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THE PROCESS YEAR BOOK



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PRESIDENT OF THE ROYAL SOCIETY, 1913

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EDITED BY

WILLIAM GAMBLE, F.R.P.S.



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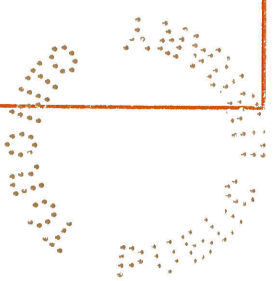
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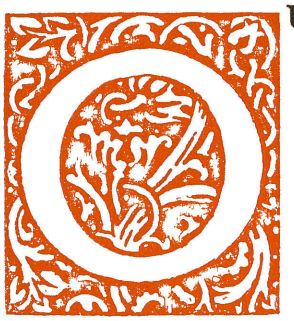
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FOREWORD



UR readers will notice a distinctly new departure has been made this year in the typographical style and arrangement of our volume. It is not necessary that we should make any apology for this, as we believe the change will be acceptable, especially to those who do not like highly-glazed papers. sharply-cut type and garish colouring. We have endeavoured to comply, as far as is possible in a book dealing with the modern developments of the graphic arts, with the canons of good taste in typography and bookmaking.

The placing of the illustrations at the end of the volume, except where they relate to the articles, will be, we feel sure, generally approved.

Finally, we would ask our readers if they notice a falling off in the quantity—there is none, we are assured, in quality—of the illustrations and text matter, to bear in mind the great difficulties and commercial risks attendant on the production of a book of this kind at such a time. We were at first dubious about issuing the book this year, but we felt it would be a pity to break the continuity of twenty years' consecutive publication. We, therefore, decided that we must "carry on" and show that one great British industry could still proudly lift up its head amid the clash of arms and the general disintegration of things around it.

We trust our friends will reward our enterprise by their liberal support as of old, and that they will excuse any shortcomings.

THE EDITOR.

December, 1914.

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THE YEAR'S PROGRESS IN PROCESS WORK

BY THE EDITOR

THE outstanding feature of the year's work is the astonishing progress of the Rotary Photogravure process. Last year we said that "so far no English newspaper has taken it up," but hardly had our book been issued than the *Southend Standard* published its first illustration (actually on December 18th, 1913) by this process, and it is now regularly producing rotary photogravure illustrations, printing them at the rate of about 20,000 per hour from a single cylinder. Without making any ambitious pretensions this journal has shown what can be done by the average provincial weekly newspaper, without using any special paper or altering any of their existing arrangements for printing the rest of the newspaper. The quality of some of the illustrations may be criticized by those who do not know, or do not appreciate, the conditions under which they have to be produced to fit in with the exigencies of newspaper production, but even so these illustrations are far away better than the best coarse screen half-tones as found in newspapers which give careful attention to the production and making ready of their illustrations. The work of the *Southend Standard* is a pioneer effort and as such it is praiseworthy and altogether commendable. No doubt we shall soon see one of our big London newspapers pioneering the work in their particular field, and with such resources as a metropolitan daily newspaper can command, the result should carry us a considerable step nearer towards the full realization

The Year's Progress.

of the idea of rotary photogravure for newspapers. For a high-class weekly periodical the *Illustrated London News* and *Sketch* show what can be accomplished and no doubt we shall soon see some of our monthly magazines adopting it. We know that preparations towards that end are being made. Several fine catalogues have been printed wholly by the new process—both text and illustrations, so that the application of the process to various classes of printing has been fully demonstrated.

Text Photogravure.

This brings us to the consideration of the question whether the process is likely to supersede typography for the printing of the text. Our own idea is that it will do so wherever text has to be printed with gravure illustrations, but it is hardly conceivable that it will do so for text alone. To a printer it may seem an absurd idea to set up the type and go to the trouble of printing a very good proof from it, transferring this to the copper cylinder by a photographic method, developing and finally etching the type matter. But when we come to consider the stages the type goes through after being set up in order to be printed in the ordinary typographic manner, and when we also compare these stages with those of the gravure method it begins to be obvious that there is something to be said for the latter. Let us consider first the tedious process of making up the formes, adjusting blocks which are often none too square, locking up, and making ready on the machine. Next the slower printing has to be considered, as well as the necessity of using a relatively expensive paper and ink, and above all the depreciation of the type through wear and tear, besides the interest on capital invested in quantities of type-matter which has to be kept standing, with a considerable reserve in the cases. Of course, this latter problem of idle type has been largely overcome by the use of the Linotype and Monotype, but against that must be set off the interest on capital in the purchase of such machinery, the cost of power and upkeep, the allowance for depreciation, and the value of metal in standing matter. Again, there is the consideration of stereotyping or electrotyping for long runs and the expense of running departments for this work. All

these things, too, create expense in floor space, in lighting and in manual work. In fact, when one comes to consider all the stages which a printing job goes through in letterpress printing the clumsiness of the routine becomes obvious.

The Advantage of Intaglio.

If, by the adoption of intaglio, it becomes only a question of setting up type for the purpose of pulling a proof or a transfer, applying this to a cylinder, and etching it, after which the cylinder can be placed straight on the machine and printed from right away without make ready, there is obviously a great gain in many ways. Moreover, roller troubles and difficulties of ink and paper are largely overcome, whilst the machining requires less skilled attention, and the speed attained is higher than in letterpress printing. Again, we must remember that when the printing is finished there is no distribution, nor the expense and trouble of remelting and replenishing the metal if type composing machines are used. The type matter is moreover quickly released, since it can be broken up as soon as the proof for photogravure reproduction has been made. It is true that the work must be ground off and the cylinder repolished, but this is now done on an almost automatic machine in a comparatively short time. Further, it may be urged that there is the initial cost of the cylinders and the wastage of copper to be made good. It is doubtful, however, whether the cylinders cost more initially and in upkeep than type or matrices and metal. Again, there is no need to keep a lot of cylinders for standing matter; the negatives and positives, and the original proofs of the text can be kept and carefully filed away in a very small space.

Objections to the Photographic Method.

If we assume the foregoing advantages to be admitted, the typographic printer may regard as a formidable objection the necessity of running a photogravure department, and urge that to do so would be costly and inconvenient. But, putting aside the possibility that photo-engraving houses will lay themselves out for producing the cylinders, is it so costly after all?

There is now the cost of the half-tone blocks which have to be provided either by the customer or the printer, and we doubt whether this would be any less than producing the cylinder. We should rather think it would be the other way, when we remember that the finishing and mounting is saved, as well as some cost of copper, and probably some of the expense of fine etching (a part of this being replaced by retouching or other work at earlier stages of the process). As we pointed out in our last volume the cost of the engraving and printing together—in fact the cost of the job as a whole—must be considered to arrive at any reliable indication of the economy of the photogravure process.

The Demand for Photogravure.

There are many in the printing and process trade who hold the pessimistic view that there will not be the demand for photogravure that its optimistic advocates predict. A similar view was expressed by wood engravers and lithographers when half-tone was introduced, but the new process made rapid strides into public favour and eventually overwhelmed the old processes. It is not wise to postulate too positively in these matters. There may not seem to be the demand now, but as the photogravure process gets more and more into use, and is reduced in price to the level of half-tone blocks plus the cost of printing them the buyers of printing will want the new process, and will probably make even more extensive use of it than they have hitherto done with half-tone blocks and art printing. We do not suppose for a moment that the new process will eventually supersede entirely the half-tone process —there will always be a use for it just as there is still for wood-engraving, but probably not so many blocks will be wanted, nor will they be required of such a high quality, so that it may result in the half-tone process being used for a cheaper grade of work. The high-class catalogue, book and magazine work which has been the mainstay of the photo-engraver may pass from him. It is, indeed, a serious outlook for the photo-engraving trade, and unless some forethought is taken much of the business may pass into the hands of the printers.

Photogravure for Colour Work.

We have heard some photo-engravers consoling themselves with the idea that at least there will be colour work left, but even in regard to that they must not be too sure. There is a lot of pioneer work being done in that direction which to our own knowledge is most promising. Given as much experience in it as the photo-engraver has now had in making half-tone colour blocks there is no knowing what colour photogravure may accomplish. There is undoubtedly a richness and charm about photogravure in colour that will carry all before it, once it can be done faithfully to the original. We admit a difficulty in that respect at present, but it is a difficulty that has been surmounted in block work. The supposition that the difficulty is one of getting register is entirely erroneous. There are, no doubt, ink troubles to overcome, and some little difficulties in the engraving process, but these do not appear to be insurmountable.

Photogravure Text Printing.

Whilst it may be admitted that there is much to be said in favour of photogravure printing of text where illustrations are to be worked with it, probably it may be thought a bold thing to predict that it may be used for printing work in which only text, perhaps in combination with ornamental designs, is in consideration. But why should it be regarded as an impossibility. We know that for a large amount of printing, such as for cheques, bonds, share certificates, stamps, letter headings, show-cards, business cards, etc., copper-plate and steel-plate engraving has survived the introduction of process work, and even the improvement of letterpress printing. But will such work survive photogravure when it comes to be properly applied to such work? We are afraid that the speed and cheapness of the new process will make it a serious rival of the older ones, and we believe the quality of the new method will be quite acceptable to the public. Thus the photogravure printer may at one and the same time be a very powerful competitor of the copper-plate printer and the lithographic printer. Even

the offset process may not save the situation. In connection with this question of text printing it is a source of satisfaction to the trade that the attempt to create a monopoly in the printing of text by the photogravure method has been defeated, and the Mertens patent which was threateningly held over the heads of the trade has been revoked, as it deserved to be. After what has been published in this Year Book on the subject of rotary photogravure in our early volumes, and in view of the pioneer work done by the Rembrandt Intaglio Company long before the date of the patent, the claim made by Dr. Mertens was not less astonishing than the attempt made to sustain it. Now that the trade has been freed from this threatened danger of restriction we do not doubt that the reproduction of text by the photogravure method will make immense strides.

Offset Lithography.

It may very well be asked where the offset process stands, or is going to stand, in relation to rotary photogravure. We have a great admiration for the offset method for certain classes of work, and it has certainly helped lithography to regain some of its former prestige. But we cannot help thinking that the photogravure process will run it very closely in competition. At present the lithographer has the advantage of well-organized facilities for designing and engraving of commercial work, and the intaglio process has not been fully developed for displayed text. But as the process is improved we can see that a much better quality of work—more akin in fact to die-press printing—may be produced by the intaglio process with no greater cost, and with greater speed. There will be the same advantage of using rough-surfaced papers. Moreover, the difficulties in regard to inking and damping the plate and deterioration of the work during the run, which are incidental to offset printing, will not be present in intaglio work. We admit that the preparation of the litho zinc or aluminium plate is a very simple and inexpensive matter compared with an intaglio cylinder, whilst the ease with which jobs may be repeated many times on the plate by retransfer or by a photographic "step-and-repeat" process is an advantage. Yet even here

it does not do to claim too much, because it has been shown that the " step-and-repeat " process can be very successfully applied to cylinders. It must further be allowed that the offset method is very adaptable to commercial colour printing, and in that respect intaglio has a long way to go before it catches up. It may be years yet before intaglio seriously challenges offset printing, but we feel sure the prospect must eventually be faced, and we should not be doing our duty if we failed to warn the lithographic trade of this possibility. We have the greatest possible admiration for offset printing and some wonderful work has been done during the past year in the adaptation of half-tone and three-colour work to it, but it has inherent limitations which we have pointed out in previous volumes.

Direct Photo-Lithography.

A great deal has been done during the past year in the application of photo-mechanical methods to lithography. The successful " step-and-repeat " process of the Printex Company is being taken up by the trade, and its merits have now been well proved. Mr. C. Alison Ker, who wrote about his method in our last volume, is also doing good work in this line by a different method. In America the Huebner-Bleistein process, the principal feature of which is a " step-and-repeat " method, has proven its value by the excellent work turned out. Now there is a new candidate for favour in this direction in the Fritsche Process Plate. We have seen excellent specimens showing as many as fifty-two repeats on a plate done in forty-five minutes. An apparent advantage of the process is that the work put down may be from various originals and reproduced in different sizes on the same plate. The Vacuum Transfer Process is another candidate for the lithographer's favour, but its novelty seems to be questionable. Nevertheless some good work is being turned out by it. A direct photo-lithographic process on stone—the latter being sensitized and printed under a glass negative clamped down on it—is brought forward as a new method, though the description published does not reveal anything that can be regarded as novel. The process of Mr. J. Gaskin Wood, which we briefly referred to last year, seems

likely to come to the front. The patent specification reveals the interesting new feature of inking the sensitized surface before exposure, and using the grain of the lithographic plate to form the grain for reproducing the tones of the picture. Mr. Ettling, who showed two examples of a new direct grain process in Vol. 17 of our Annual, has further developed his method, and with increased facilities of production, this process promises to be a useful aid to the lithographer, especially for coloured poster work. A curious process that has been patented during the past year is a method for reproducing existing printed matter, such as the page of a book, without using a camera. A glass plate coated with a special sensitive emulsion is laid film downwards on the page of printed matter, and the light is allowed to act through. The result is that a negative is produced, and this can be used for direct printing on to metal. Such a process should be very useful for reproducing old books, prints, etc.

Photo-Lithographic Transfers.

Whilst on the one hand direct photo-lithography is being largely exploited the transfer method is by no means being superseded. There is a large amount of transfer work being done, and the simplicity of the means employed is a great point in its favour. Mr. Shawcross's "Amphitype" process has entered on a new phase during the past year, owing to improvements made in the manufacture of the sensitive paper, and it is now more easy to work than when originally introduced. A good deal of work, especially such as enlargements for posters, is being done by a modification of the Bromoil process, and those who are interested will find full instructions in the current issue of the "Penrose Pocket Book." Whether it will be possible to apply the emulsion to the zinc or aluminium plate and enlarge direct on to it seems doubtful at present, but if it can be accomplished it will be a great gain. Mr. S. G. Yerbury has been making some promising efforts to apply the collotype image to lithographic printing, pulling transfers from a collotype plate, and also applying the collotype image by direct printing on aluminium plates. If the beauty of the collotype can be

retained such a method would remove the difficulties of collotype printing, and thus probably popularize this beautiful process. Mr. Yerbury suggests in an article elsewhere in this volume that collotype is the coming process for colour work.

Colour Processes.

This brings us to the consideration of the progress made in colour work. There is nothing very striking to record, but there is a consistent improvement in the quality of the work produced by the old processes. In direct colour photography the Autochrome, Dufay, and Paget screen plate processes continue to be largely used, and are proving useful to colour engravers as guides for colour effect, whilst the transparencies are in some cases successfully reproduced as three-colour blocks. The Polychromide process, so successfully worked out by Mr. Aron Hamburger at the Dover Street Studios, has been brought to quite a commercial stage of perfection and a very large amount of excellent work is being done, especially in portraits from life. The reproductions we give from negatives made by this process show how excellent a method it is for producing originals for the photo-engraver. The essential feature is the taking of the three-colour selection negatives at one instantaneous exposure. Mr. Jan Szczepanik, although little has been heard publicly about him of late, is still actively working on his idea of producing colour prints on paper by his bleachng-out process at one printing. Dr. Smith at the same time continues to improve and make more certain his "Uto" paper. There is also evidence in the photographic press and in the patent records that many inventors are at work trying to perfect colour methods in one way or another. In the matter of colour block making there are now being exploited in two different directions processes which have for their object the reduction of the excessive amount of hand work which must now be put into colour blocks by fine etching. One process is that patented by Mr. E. H. Gamble; the feature is that whilst making the three-colour separation negatives a monochrome image from a diapositive is projected by means of a lantern on to the original picture. This has the effect of

stopping down some colours of the original and making others more brilliant. In this way a brighter negative is obtained, and less fine etching is required. Several large firms who have tried the process report very favourably on it. The other method, which has the same object, is that of Mr. W. J. Wilkinson, of the well-known New York firm of Zeese-Wilkinson. So far as we can gather this is a process of stopping-out which is done during the printing of the negative on to the metal, or, as Mr. Wilkinson himself expresses it, "surprinting from another special negative." The results shown certainly indicate that a much brighter plate is obtained, and while fine etching is not entirely done away with the necessity for it is at any rate greatly diminished. One would hardly have thought that it was possible to take out a patent in these days for the choice of the best screen angles for colour work, but Dr. E. Albert has discovered a point which has apparently been overlooked, *viz.*, that of making one of the two angular positions of the screen used for one colour agree with one of the two angular positions of the screen used for a second colour plate. For instance, the positions may be 0° and 30° for the one plate, 30° and 60° for the second plate, and 0° and 60° for the third plate. Another feature of the process is that in printing one of the two negatives having the same angular position is given a shorter exposure, and the width of spacing in the screens is varied when producing plates for a large number of colours.

Half-tone and Line Work.

Block work, both half-tone and line, is probably as good as it ever will be. A degree of perfection has been attained which it seems hardly possible to surpass. In high-class catalogue illustration the half-tone process has reached a point where it can go no further. The only refinement is in the addition of tint blocks for two-colour printing and splendid work is being done in that direction. The combination of half-tone pictures with half-line borders is also largely in evidence, especially in the high-class weekly periodicals. Line work is now at its best, thanks to the introduction of etching

machines, and has been almost entirely restored from the low estate into which it had fallen through low prices and cheap labour. As regards newspaper half-tones, though they are more than ever used, they show no marked improvement and it does not seem possible to make any, as the stereotyping and printing conditions are altogether against any likelihood of improvement.

The Tendency towards Large Work.

There is now a marked inclination on the part of process houses to attempt larger and larger work. Lithographic houses which have gone in for process work now essay posters of 60×40 inches, which means handling plates of still larger size and these are produced by photo-mechanical methods. Messrs. David Allen & Sons, Ltd,. have for some years past been producing line, half-tone and colour blocks of the above size and over for letterpress printing. This large work, both for lithographic and typographic work has, however, been of coarse grain when in half-tone. Now the Menpes Printing and Engraving Company, of Watford, have laid themselves out for doing fine grain colour work for art printing of any size up to 45 inches, that being the size of their circular screen. Anything that will come within a circle of that diameter will be accepted by this enterprising firm, who have bought a complete outfit of a unique character for dealing with this colossal work. This outfit has been specially built in the Penrose Camera Factory, and was shown at the recent Printers' Exhibition at the Agricultural Hall, London, where it attracted universal attention. The camera especially is a very fine instrument, extending about 10 feet and having an iron and steel base, with massive cast-iron turntable, supported on an iron carriage running on a heavy frame of steel girder construction 24 feet in length. The dark slide is about 50 inches square, and the front body consists of an iron casting, with mechanism for raising and lowering the big Cooke Process lens of 48 inches focus. A copyboard of over 6 feet square and a set of four powerful arc lamps complete this magnificent outfit, which may fairly be described as the largest in the world.

Position and Prospects.

Considering the work of the past year as a whole our readers

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may very well ask for an expression of opinion as to whether real progress has been made, or whether it is simply a matter of marking time. In reply we would say our view is that there is a substantial advance in many ways. In the first place no one can gainsay that the quality of present-day work reaches a very high standard of excellence, and an important point is that good work is done with speed and certainty. So far as British work is concerned it is a matter for national pride that it is everywhere held in the highest estimation. Even in America and on the Continent, where exceptionally fine process work is unquestionably done, there is a feeling of admiration expressed for British work. Time was when it was said of process that "They do this work much better abroad," but that cannot be said now. There is no need for British firms to send their work to other countries, as was once the case. In fact it is now the other way and English process firms receive a considerable amount of orders from the Continent—at least they did before the war. Neither can it be said that British workers have been backward in improving the processes used. We have in fact always pioneered in photo-mechanical processes though we may have been slow to apply them to commercial advantage. It is just over fifty years since Fox Talbot laid down the principles of the first practical photo-engraving process, and it is to his credit that his methods continue in use to-day, with very little difference in their essential principles. His work, together with that of Ponton and Swan laid the foundation of the process which we hail to-day as the latest and most promising—that of rotary photogravure. We do not forget the work of Karl Klic in this connection. He saw the application of the idea, but it was with English capital and through the enterprise of an English firm that he brought it to a successful issue. We can acknowledge our indebtedness to the workers of other nations—and especially to those of America—for the way in which they improved on the first crude ideas of the early inventors and carried the work forward. We have in turn taken up the running, and made further advances. With us it may truly be said that "Progress, the goal of yesterday, will be the starting point of to-morrow."



1. Original Autochromes—showing weak red, yellow, green, and folds of background screen.



2 Fixed-out ordinary plate showing stained surface to rectify weaknesses.



3. Original Autochrome and worked-up cover glass superimposed.

Blocks by the Marshall Engraving Co.

Inks by Shackell, Edwards & Co., Ltd.

COLOUR SCREEN-PLATE ORIGINALS FOR PROCESS REPRODUCTION

BY ARTHUR E. MORTON, F.R.P.S.

DURING recent years an increasing use has been made of screen-plate originals—as represented by the autochrome and Paget processes—for three-colour half-tone illustrations for books, catalogues and the like. Excellent tri-chrome reproductions can be secured from properly exposed transparencies, as is evidenced by the examples in this publication.

The production of a screen-plate photograph is simplicity itself. The apparatus required is just an ordinary camera with the addition of a filter, and the provision of a dark-room safe-light. An autochrome plate or a Paget taking-screen needs to be exposed with the glass towards the lens, so that the light passes through the plate or screen before reaching the emulsion, the preponderating action of the blue rays being cut down by the interposition of a special yellow filter between the subject and the plate. The departure from ordinary practice is in the development of the autochrome; the developed image is not fixed, but dissolved away, the undeveloped portion of the film being exposed to white light and then developed to form a positive image. In the Paget process a separate screen-plate is used in conjunction with a backed panchromatic plate which,

Colour Screen-plate Originals for Process Reproduction

after exposure, is developed and fixed like an ordinary monochrome negative; a positive transparency is then made therefrom and registered in contact with a viewing-screen. The autochrome and panchromatic plates being colour-sensitive it is necessary to use an illuminant transmitting a narrow portion of the spectrum in the blue-green and the plates should be exposed as little as possible to this light. Before placing the plate or screen into the dark slide carefully clean the back by breathing on it and polishing with a clean silk handkerchief—a splash of emulsion or other dirty mark will be reproduced in the finished transparency as a blemish.

Correct exposure is imperative, more particularly with the Autochrome plate. An error does not mean variation in density, but degradation of colours. Slight over-exposure causes whites to look pinkish; excessive over-exposure causes a general deficiency in colour. Slight under-exposure causes bluish-whites; excessive under-exposure produces hard or buried colours with an excess of blue. With the Paget, the exposure should be of sufficient duration to secure full detail in the shadows; then, to secure correct colour rendering, make a soft positive from a dense negative, and *vice-versa*. In both processes intensification and reduction can be effected, but at the expense of accurate colour rendering. The duration of exposure depends upon the actinic value of the light and the colour and distance of the subject. The writer prefers bright diffused light for near subjects, weak sunlight for mid-distant subjects, and brilliant sunlight for distant subjects. The comparative luminosity and depth of colour must be allowed for. Dry weather is preferable, because wet shiny surfaces, such as the foliage of ivy, laurel, etc. reflect too much white light, whereby their colours are weakened or lost. Employ a narrow-angle lens working at the widest aperture possible—a wide-angle lens transmits the light rays at too oblique an angle, particularly towards the edges of the plate, while a small stop degrades the colours by lessening their luminosity.

The natural limitations of colour photography impose a severe restriction on the worker. In landscape work he must select the most pleasing arrangement of the component parts

of the subject and modify the result in a limited degree by subsequent methods of manipulation, but in still life studies he has a larger degree of latitude in creating by manipulation.

In landscape work the accentuation or the introduction of a harmonising colour here and there, the insertion of clouds, and the modifying of colour effects are quite possible and are often necessary to successful tri-chrome reproduction.

These modifications should be performed in daylight and the procedure is to coat the transparency with a gum dammar varnish and work upon this surface with transparent water colours applied with a finely pointed and almost dry sable brush. In this way any loss of colour in the high-lights can be rectified, or a white sun-bonnet or white flowers can be tinted a delicate hue. Again, an ordinary unexposed dry plate can be fixed-out, dried and then, by placing the transparency with the film down and the ordinary plate film up in a retouching desk, a dilute dye solution can be used for staining in a sky, or the plate can be partly or wholly immersed in a yellow dye to rectify a preponderance of blue, or it may be stained to form a background, as in the accompanying illustrations. The manipulated plate is used as the cover glass for an autochrome or as an extra cover glass with the Paget positive and viewing-screen. Pinholes can be touched out with a finely pointed lead pencil applied with accurate precision. Subtraction of any matter—such as offending spots with a dissecting needle—must be effected *before* varnishing, and the addition of anything *after* varnishing.

In still life studies the influence of coloured reflections and colour contrasts must not be overlooked. Portions of an object and its shadow may assume quite a different shade by the admixture of a pronounced reflected tint from adjacent furniture, curtains or wall-paper. Colour contrasts can be resorted to for increasing colour intensity, secured either by the use of separate objects or a suitable background. A large sheet of ground glass is extremely useful, since pieces of complementary coloured papers can be placed behind it to secure subdued tints, or coloured chalks can be applied to the matt surface and blended with the dry fingers, the lighter contrasting tints at the rear of dark-coloured objects and *vice versa*.

VELOGRAVURE APPLIED TO SILK AND SATIN PRINTING

BY JOHN WIDDOP

ABOUT three and a half years ago a firm of city silk merchants consulted me on the possibility of printing tone subjects in three-colour on silks and satins. At that time the only process that I thought would be satisfactory was gravure, but there was then neither plant nor process obtainable. Now it struck me that the Velogravure process would be just the process for this work. By the process in use flat tints can be done satisfactorily and there is a very large quantity of beautiful work done this way, but what is wanted is a process that will reproduce pictures, portraits, etc., in all their tones, and I know there would be a great demand for this work. In printing on silks and satins the colour has to be carried into the material and the medium with which the ink is mixed is removed afterwards, so that the *sheen* of the silk or satin is always on the top. In printing by the present method this is removed at the same time as the printing, but by what I have seen of gravure printing on satin this could be dispensed with, or if not an appliance could be fixed on the Velogravure machine to do this—that is, taking the medium from the ink after printing.

From what I know of the silk trade there is a great opening for this kind of work to get away from the old floral and geometrical designs.

If Screen-gravure, as at present in use, does not give depth enough, Mezzotint-gravure would do so and should be cheaper.

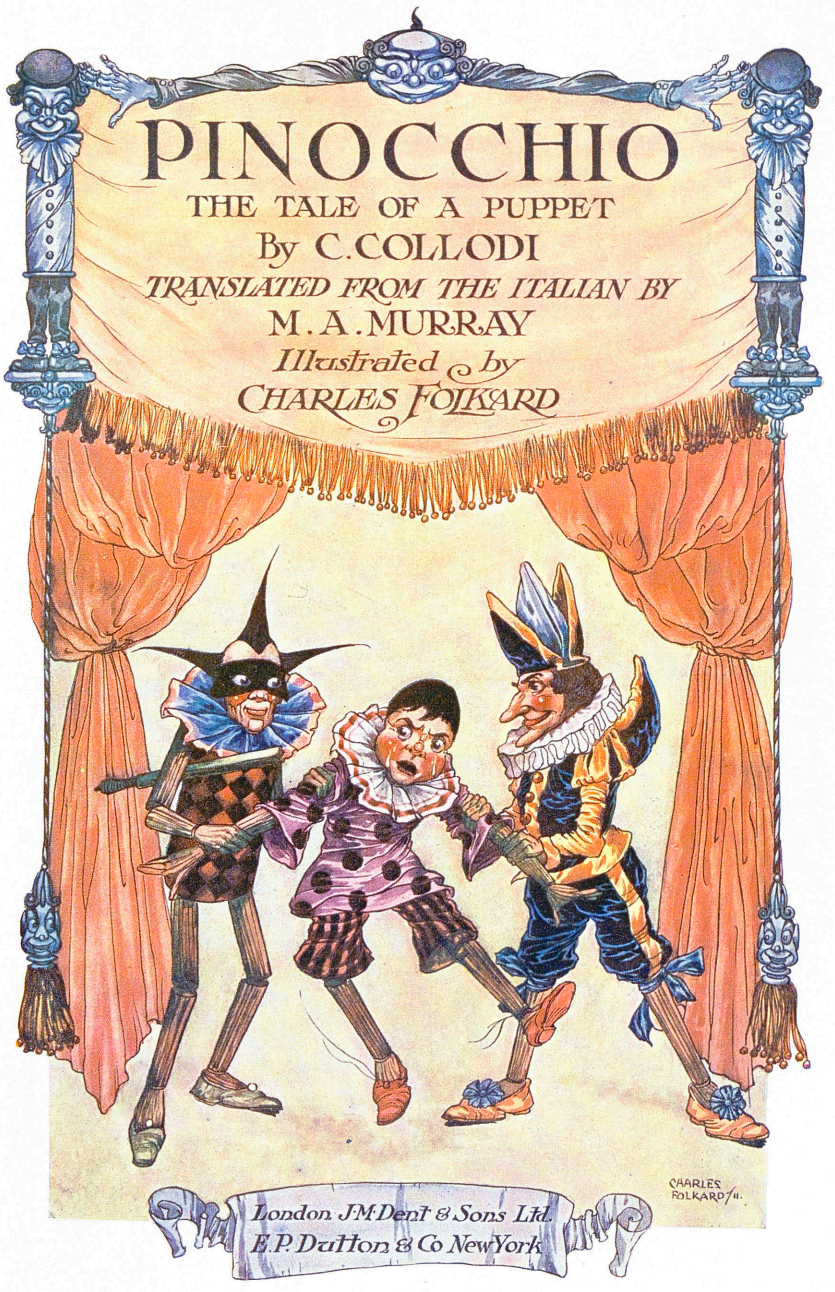


Fig. 11.

Design by CHARLES FOLKARD.

Blocks kindly loaned by J. M. Dent & Sons, Ltd.

Inks by Shackell, Edwards & Co., Ltd.

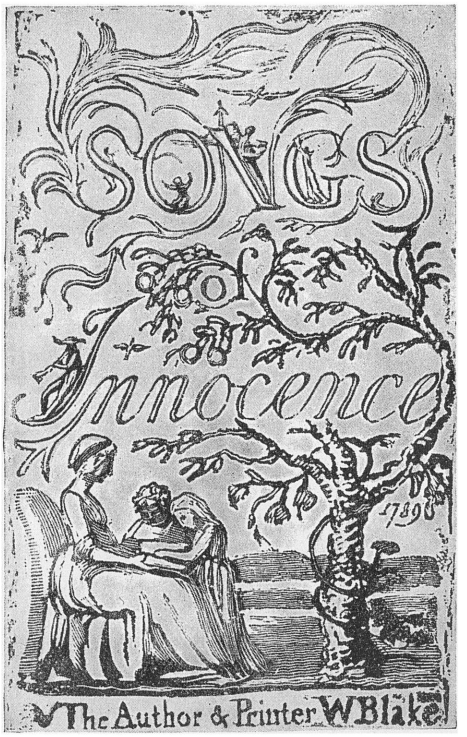


Fig. 6

Design by WILLIAM BLAKE

Block supplied by courtesy of B. T. Batsford

MODERN DECORATIVE TITLE PAGES

BY GEO. A. STEPHEN, F.L.A.

(*City Librarian, Norwich, author of "Commercial Bookbinding," etc.*)

NOTHING can be plainer, as a rule, than a modern English title-page," wrote the late Andrew Lang in his collection of essays entitled *Books and Bookmen*, which he published about twenty-seven years ago; but *nous avons changé tout cela*, and decorative title-pages are an important feature of certain classes of books published at the present time. Decorative title-pages date back almost to the infancy of printing, the earliest known specimen being the *Kalendario* printed by Bernard Pictor, Peter Loeslein and Erhard Ratdolt, at Venice, in 1476, which is ornamented with a woodcut border. During the succeeding centuries decorative title-pages passed through many vicissitudes, the ornament, sometimes restricted and sometimes exceedingly elaborated, being effected by means of wood-engraving, copper or steel engraving, etching, a combination of etching and engraving, or the modern processes of line-engraving, half-tone, three and four-colour, etc.

The design and execution of some of the earlier title-pages made them veritable works of art, and thus vandals were led to extract and collect title-pages for the sake of the engravings. Although works of art in themselves, there was generally no artistic relation of type and ornament throughout the whole book. The harmony between text and illustration is traceable to the influence of the work of William Blake, the poet, seer and artist of the latter part of the eighteenth century, who had

a contempt for purely mechanical processes, and therefore wrote with his own hand the text of his poems, and decorated the pages. In John Sampson's introduction to the Oxford edition of Blake's poetical works, published last year, it is stated that by far the greater number of Blake's works were produced by a process of his own discovery which he termed " Illuminated Printing." " In this process," says the writer, " the text and surrounding pictorial embellishments were executed in reverse in some species of varnish upon copper plates, which were afterwards etched in a bath of acid until the whole design stood in relief as on a stereotype. From these plates impressions were printed in various schemes of monochrome, and afterwards delicately tinted by the artist in washes of water-colour, each copy thus possessing an individuality of its own." The seed sown by Blake was nurtured by William Morris—man of letters, craftsman and socialist—and brought to fruition by a brilliant band of decorators, ornamentists and high-class printers, who have realized that " Books are the windows through which the soul looks out," and who have endeavoured to provide a worthy setting for an author's best work. The publisher's present general practice of commissioning one artist to decorate the interior and exterior of a book has had a most salutory effect in securing harmony in the decorative scheme, and it is now reiterating a truism to say that book-decoration has reached a high state of perfection.

The diversity of the designs of modern decorative title-pages is due to the numerous book-illustrators engaged in their production, to the extensive field afforded them by reason of the variety in the purport, style and size of books, and to the different mechanical processes used in printing them. One naturally expects an artist, when designing a title-page, to recognise the rectangular character of the page, to consider the size of the lettering in relation to the size of the page, and the character of the lettering in relation to the type used for the book. One cannot, however, expect a rigid adherence to the canons of one man, because of the diverse work of the innumerable artists engaged in book-illustration; nevertheless, the opinion of Walter Crane, as expressed in his book entitled

Of the Decoration of Books, Old and New, is worth quoting. His view is that a decorative end-paper should be delicately suggestive of the character and contents of the book; it may be considered as a kind of quadrangle, forecourt, or even a garden or grass plot before the door. Having passed the end-paper and read the half-title "we are supposed to pass on

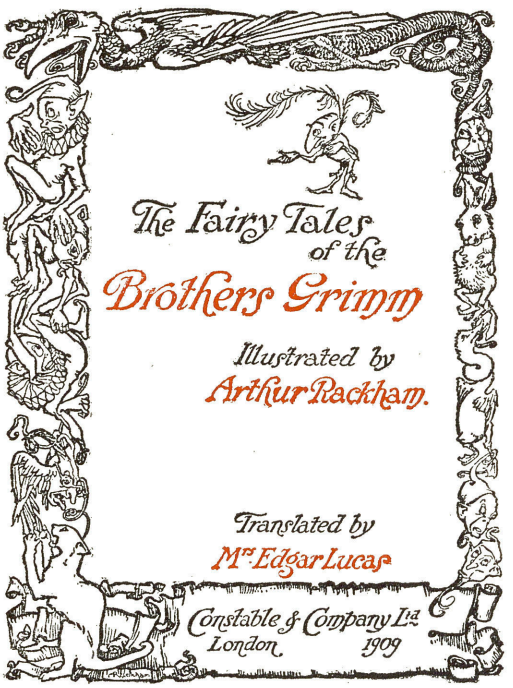


Fig. 1
Design by Arthur Rackham
Courtesy of Constable & Co., Ltd.

with somewhat bated breath until we come to the double doors, and the front and full title are disclosed in all their splendour. Even here, though, the whole secret of the book should not be let out, but rather played with or suggested in a symbolic way, especially in any ornament on the title-page, in which the lettering should be the chief ornamental feature. A frontis-

piece may be more pictorial in treatment if desired, and it is reasonable to occupy the whole of the type page both for the lettering of title and the picture in the front; then, if richness of effect is desired, the margin may be covered also almost to the edge of the paper by enclosing borders varying according to the varying width of the paper margin, and in the same

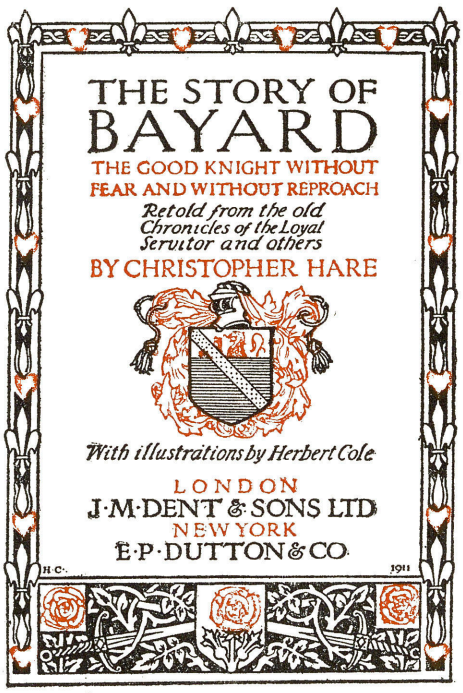


Fig. 2
Design by Christopher Hare
Courtesy of J. M. Dent & Sons, Ltd.

proportions, *recto* and *verso* as the case may be, the broad side turning outwards to the edge of the book each way."

The designs of ornamental title-pages may be broadly classified into six groups. Mr. G. Woolliscroft Rhead in his excellent book on *Modern Practical Design* (published in 1912) has succinctly summarized four groups or systems: "1. The

lettering may be enclosed within a border more or less elaborate either on the symmetrical or unsymmetrical system. 2. It may be placed on a scroll, tablet, cartouche or other ornamental device, the field being filled with either an all-over pattern, or a more or less naturalistic arrangement of plant form or figures, the scroll, tablet, etc., serving the purpose of separating

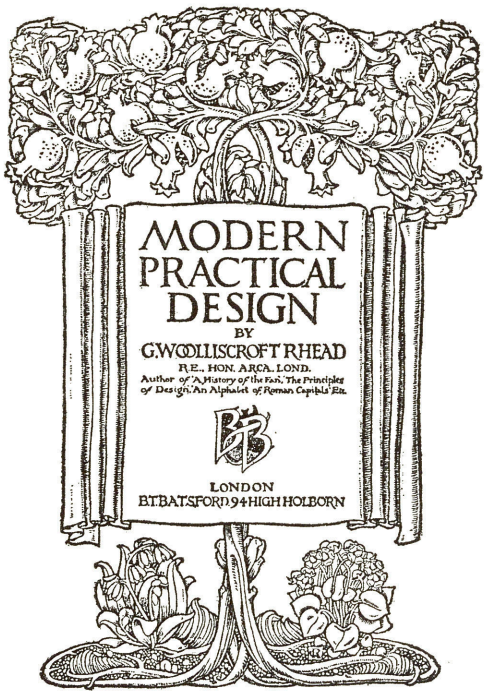


Fig. 3
Designed by G. Woolliscroft Rhead
Courtesy of B. T. Batsford

the lettering from the ornamental portion. 3. The lettering may be incorporated with the design without any such separating devices, as in the extremely naïve title-page for Blake's Songs of Innocence" (Fig. 6). 4. The title-page may be a combination of lettering, border and enclosing picture or other device. In all cases, the decorative motif of the design should

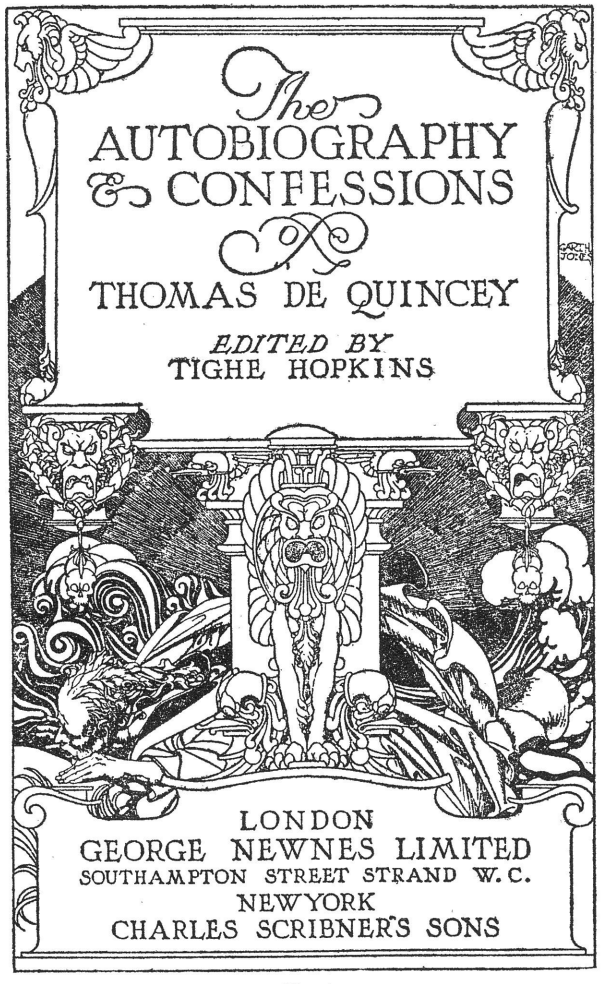


Fig. 4
Design by GARTH JONES
Courtesy of Simpkin Marshall, Ltd.

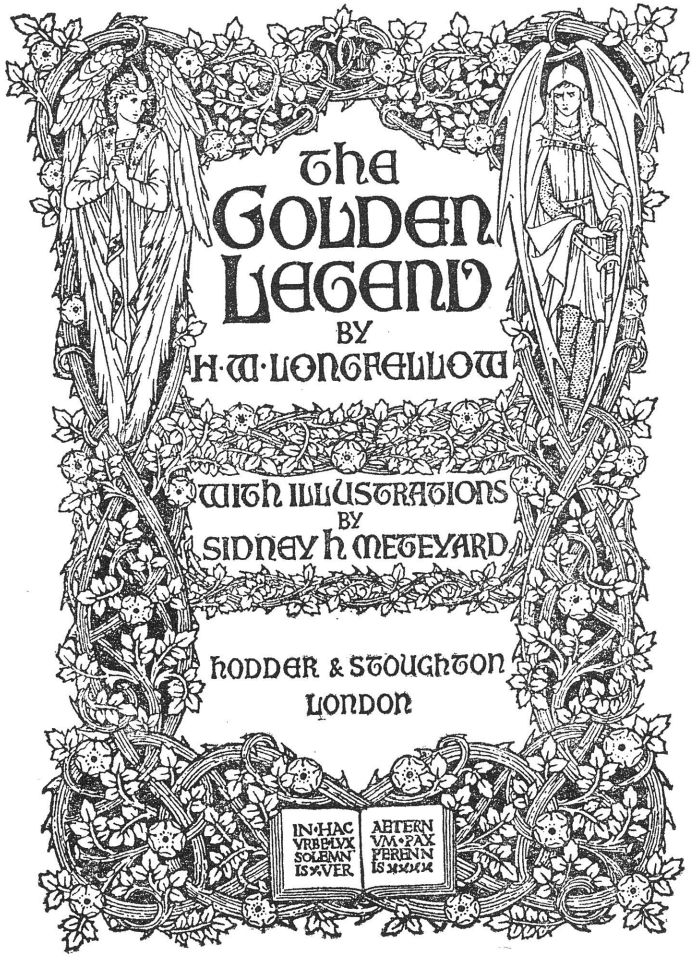


Fig. 5
Design by SIDNEY H. METEYARD
Courtesy of Hodder & Stoughton

be appropriate, and whenever possible should suggest the character of the book." In addition to these groups the present writer ventures to add two others, *viz.*, the title-pages which have a publisher's ornamental device, and those that are purely pictorial in character.

The pleasing specimen of a title-page placed within a border—Mr. Rhead's first-named style—is the title-page (Fig. 1) of the edition of Grimm's *Fairy Tales*, illustrated by Arthur Rackham, and published by Messrs. Constable & Co. in 1909, by whose courtesy it is reproduced. Probably the work of no book-illustrator at the present day has met with so much genuine appreciation by juveniles and "children of a larger growth" as that of Arthur Rackham. The border of the title-page selected for illustration, which is composed of elves, birds and animals intertwined, and terminating in a scroll for the publisher's name, exhibits his rich vein of humour and phantasy, and gives a foretaste of the delightful tales and the finely-executed illustrations in the book. The calligraphic lettering is printed in red and black, and harmonises well with the border, the three lines in red imparting a dignified and rich effect.

By kind permission of Messrs. J. M. Dent & Sons an illustration is given of the title-page of *The Story of Bayard* (Fig. 2), retold by Christopher Hare, printed in red and black, which has a simple but effective border. The flaming heart alternating with the fleur-de-lys, and the crossed swords are all symbolic of the French knight of the Middle Ages whose chivalrous life is told in the volume.

The title-page of Mr. Rhead's book, from which his classification of title-pages has been quoted, serves as an admirable specimen of his second class. By kind consent of the publisher, Mr. B. T. Batsford, a reproduction is given (Fig. 3). It will be noticed that the designer has placed the lettering, including the publisher's monogram, in a scroll to separate it from the ornamental portion—a pomegranate tree having its roots in the ground, throwing out branches and bearing fruit, being symbolic of the book and its various parts.

A second example of a title-page in this class is that designed by Garth Jones for the edition of Thomas De Quincey's

Confessions of an Opium Eater, at one time published by Messrs. George Newnes, Ltd., and now published by Messrs. Simpkin Marshall, Ltd., by whose kind permission it is reproduced (Fig. 4). This design is typical of the imaginative work of Garth Jones, one of the group of artists who collectively form the Carlton Studio, who stands in the front rank of modern decorative illustrators. The title is prominent in the tablet forming part of the appropriate architectural design; the lean prostrate figure with drawn features, as a result of intense suffering, and the skulls are very suggestive of the opium habit to which De Quincey was addicted.

The title-page of the edition de luxe of Longfellow's *Golden Legend*, illustrated by Sidney H. Meteyard, and published by Messrs. Hodder & Stoughton, by whose courtesy it is reproduced (Fig. 5), is another example of this class, the design being frankly suggestive of the striking dramatic poem which embodies Longfellow's conception of Christianity in the Middle Ages. Prince Henry's allusion to the immortal roses brought to St. Cecilia's bridal chamber, and the subsequent dialogue between him and Elsie provide the *motif* of the design. These two, the principal characters, are prominently portrayed in the design, and at the base is the Latin couplet chanted by the pilgrims. The triple enclosures clearly display the title of the book and the names of the author, illustrator and publisher; and the whole design, being printed in gold, is very rich and effective.

Examples illustrating the third class, of which the title-page of William Blake's *Songs of Innocence* (Fig. 6), already referred to, are not very common. In this example, reproduced by the kindness of Mr. B. T. Batsford, who provided the block, the author-designer has portrayed two children at their mother's knee—symbolic of innocence—while the lettering is intermingled with the branches of the tree of knowledge.

Were it not for the border one might perhaps include in this class the accomplished and elaborate title-page (Fig. 7), of Messrs. George Allen & Sons' sumptuous edition of Edmund Spenser's epoch-making poem *The Faerie Queene*, in six volumes, decorated by Walter Crane, the precursor of a prolific school of decorative illustrators. However, as there is



Fig. 7
Design by WALTER CRANE
Courtesy of George Allen & Sons

a bold border it must be classified in group four. The work of illustrating this great allegory was a most congenial one for Walter Crane, his abilities being admirably suited to its pictorial representation; in his autobiographical work, *An Artist's Reminiscences*, he states that *The Faerie Queene* had long been known to him and that he had cherished a dream to illustrate it. Throughout the work there are numerous full-page designs, decorative initials, chapter headings and page terminations or tail pieces, in which the artist has endeavoured " to embody the extraordinarily rich invention and complexity of much of his [Spenser's] allegory, with its historic, mythical, and classical illusions, as well as to depict the incidents and characters of the story." In the title-page the designer has treated the two pages as a decorative whole, the title of the book, intermingled with the foliage of an oak tree, forming a panel on the verso page, the sub-title and other lettering, intermingled with the foliage of a laurel tree, forming a panel on the recto page. In the fanciful borders the subjects of the six books of the poem are typified, and the virtues are heraldically treated. The work of this undertaking extended over three years, and on the completion of the designs on January 3rd, 1897, the designer expressed his feelings in the following stanza :—

" Great Spenser's noble rhyme have I essayed
To picture, striving still, as faithful squyre,
Each faerie knight to serve, in armes arrayde
'Gainst salvage force, and deathful dragons dire,
Or Blatant Beast with poisonous tongues of fire;
To limn the Lion mylde with Una fayre,
The false Duessa, and the Warlike Mayd.
' Be Bolde,' I read, and did this emprise dare,
And now the door is oped, so let the masque forth fare."

The plan of treating the two pages as a decorative whole is one to which William Morris was partial, the title-page and first page of *The Glittering Plain* being a typical example of his exquisite work. " It was natural," he said, " that I, a decorator by profession, should wish to find suitable decoration for my books." By the kindness of William Morris' trustees, the first opening of the book is reproduced (Fig. 8). In this example

Morris placed his title on the verso page facing the first page of the opening chapter, and in treating the two pages as one he placed narrow margins inwards and at the top and broad margins outwards and at the foot. The whole design gives one a good idea of the remarkably rich effect he obtained by the use of bold black and white ornament and decorative woodcuts in open line.

Another good example illustrating this plan, and also a good example of the fourth class, is the title-page of the edition of George Borrow's *Romany Rye*, in Messrs. J. M. Dent and Sons' world-famous "Everyman's Library," by whose courtesy it is reproduced. The design is the work of Reginald L. Knowles, a decorator of many books, whose work generally reveals an undercurrent of symbolism. His title-pages for the volumes of "Everyman's Library" are all symbolic, most of them belonging to the first class. In the title-page illustrated (Fig. 9), he has used the same border for the other volumes of fiction in this series, but he has introduced, presumably, the figure of Knowledge holding the scroll of learning, on either side of whom are his words of counsel:

"Everyman, I will go with thee and be thy guide
In thy most need to go by thy side."

The designer has conceived fiction to be the rich fruits of the human imagination, and accordingly rich swags of fruit are prominent in the border. The different stories all being more or less concerned with human passions, the designer has formed the roots at the base of his design into a heart-shape, in which a fragrant rose is set; on each side of this two nightingales sing their love-delirium, and rising up through the whole design are flame-shapes, suggestive of the emotions burning within the human breast. From the illustration it will be observed that the border is unsymmetrical, and reversed on the verso page.

Besides the four classes of title-page designs enumerated by Mr. Rhead, reference must be made to those title-pages which have a publisher's device or similar ornament, to form a pleasing contrast to the lettering. An excellent example of this class is the title-page of W. S. Gilbert's *Iolanthe and other Plays* (Fig. 10), illustrated by W. Russell Flint, and published by Messrs. George Bell & Sons, who have kindly granted permission for the

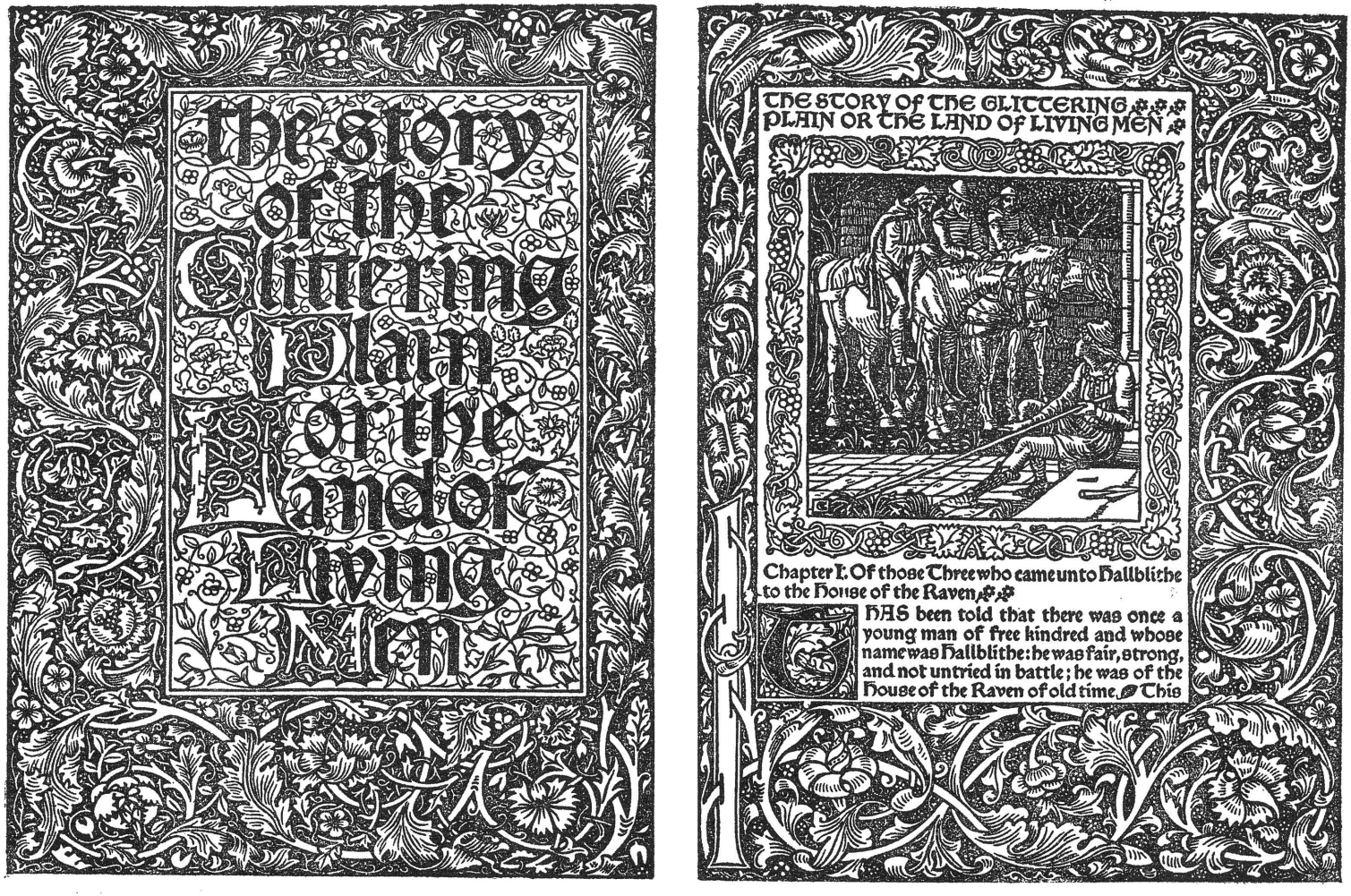


Fig. 8
Design by William Morris and Walter Crane
Courtesy of William Morris' Trustees

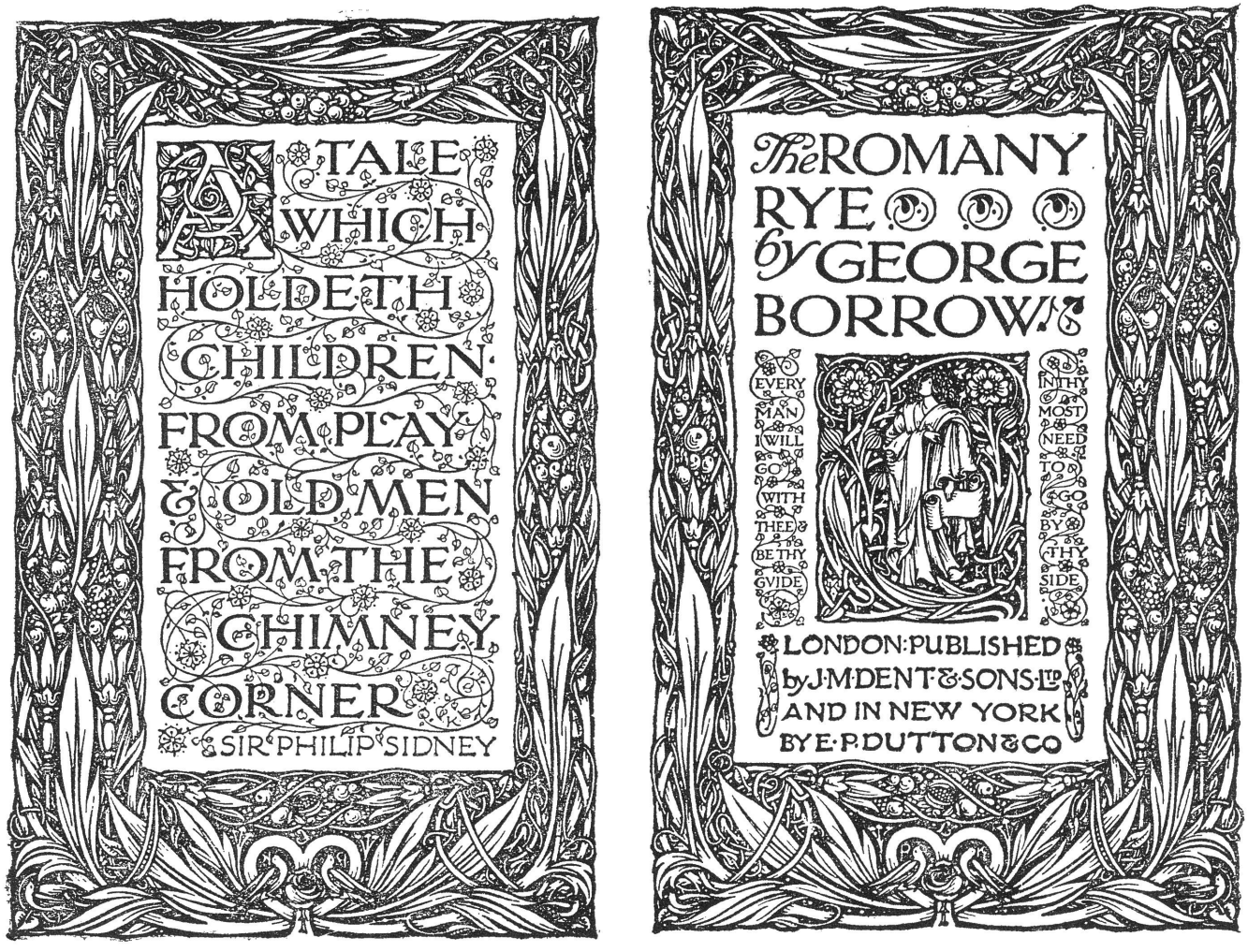


Fig. 9
Design by Reginald L. Knowles
Courtesy of J. M. Dent & Sons

reproduction of the design. In this example the ornamentation consists of a combination of four figures suggestive of the titles of the plays, indicated on the scrolls, supported by the publisher's devices—a dolphin, an anchor and a bell, the latter being also emblematic of the publisher's name.

Finally there are the title-pages which may be described

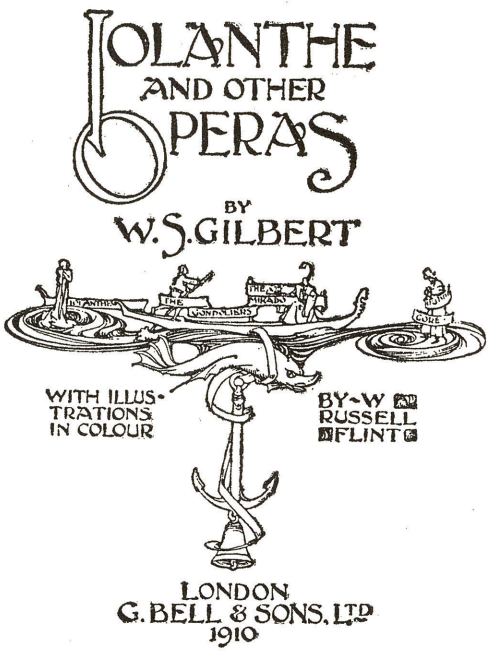


Fig. 10
Design by W. Russell Flint
Courtesy of G. Bell & Sons

as pictorial; these frequently depict an important scene, or one or more of the prominent characters in the book. A typical title-page of this class is that of C. Collodi's *Pinocchio* (published by Messrs. J. M. Dent & Sons), illustrated at Fig. 11, which is the work of Charles Folkard, an excellent artist whose charming illustrations have enhanced many books. In this example the

artist, who throughout the book has caught the spirit of this quaint and delightful Italian fairy story, has chosen one of the incidents in the story of the puppet Pinocchio, and has portrayed him in charge of Harlequin and Punchinello on the stage of the puppet theatre. This title-page, printed by the three-colour process—an



Fig. 12
Design by Walter Crane
Courtesy of G. Bell & Sons

additional attraction for children—will make a strong appeal to the juvenile mind, and prepare them for the imagination, excellent humour and pathos of the book.

It may not be inappropriate to label as a pictorial title-page the charming and appropriate title-page of Walter Crane's

Ideals in Art, published by Messrs. George Bell & Sons, who have kindly permitted its reproduction (Fig. 12). The artist, to illustrate his " Ideal," has portrayed a fair lady holding the lamp of truth and of inspiration, and at her feet are the artist's palette and instruments, and laurels; she is ascending to a visioned temple of beauty. When one contemplates the Greek lamp, the laurel—the tree sacred to Apollo—the Greek temple, and the design generally, one cannot but think that the artist had thoughts of Athene, the Greek Goddess of Knowledge and of the Arts, who personified the clear air as well as mental clearness and acuteness. Not only is the varied work of Walter Crane always interesting, but his fascinating books on art and design, and his volume of *Reminiscences* will repay attentive study, and will convince the reader that this original artist has indeed " Ideals in Art."

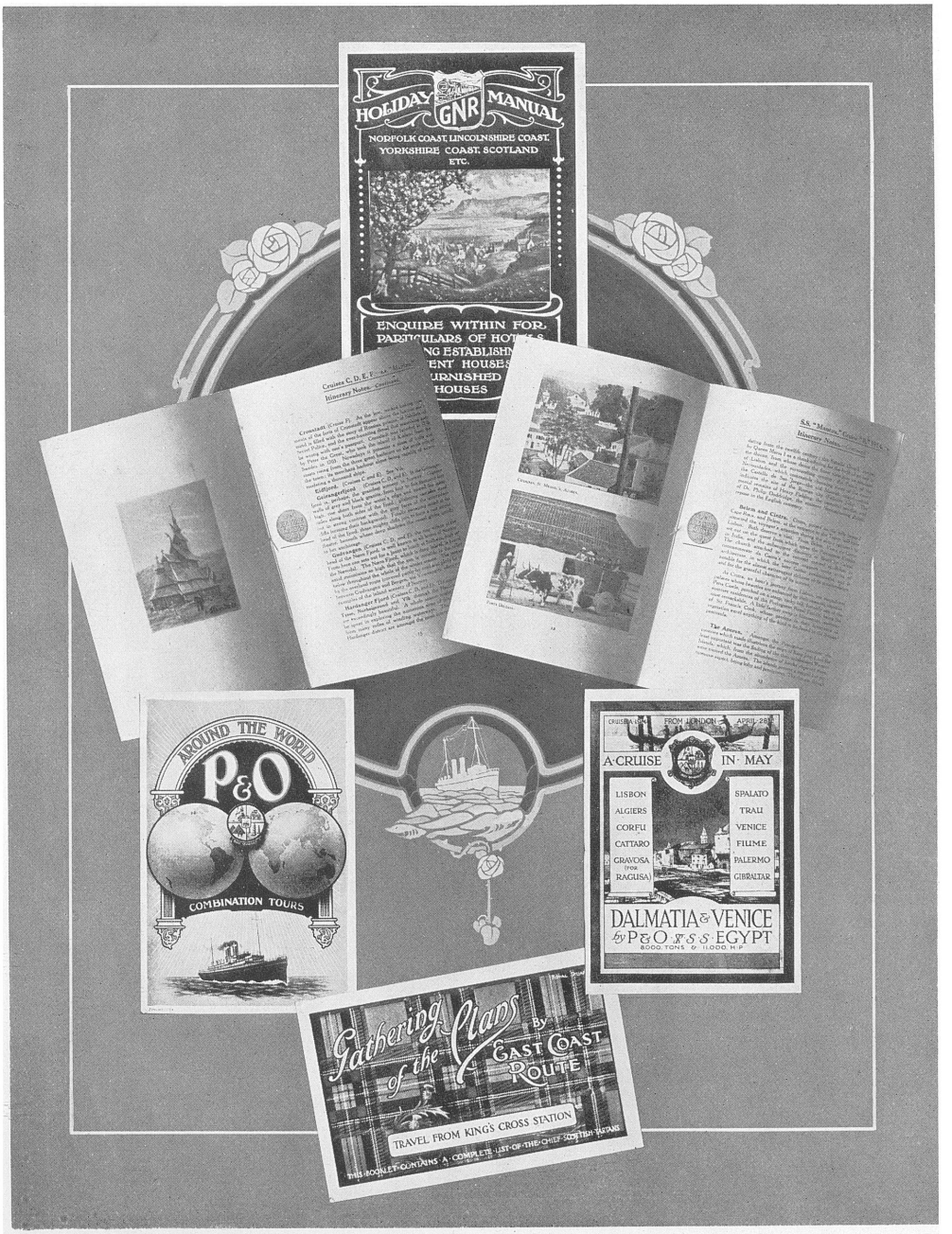
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POSTER DESIGNS

Inks by Shackell, Edwards & Co., Ltd.



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ADVERTISING BOOKLETS.

TRANSPORT ADVERTISING

BY FRED A. BRIDGE

IT is no exaggeration to say that few commercial undertakings afford such an extensive scope for really profitable advertising as do the Railway and Shipping industries. Yet, until comparatively recent years very little was done, at all events in this country, to bring before the general community the numerous facilities which undoubtedly exist for travel—not only in the British Isles, but throughout the world.

Then, gradually, the need for greater and infinitely better publicity arose, and, to-day, the railway and steamship poster, handbook or press announcement ranks amongst the most dignified specimens of commercial advertising.

It must not, however, be forgotten that modern transport advertising is still in its infancy. Although a great deal has been done to raise the status of such publicity, much to make it still more profitable remains to be carried out. No hypercritical analysis is needed to discern that the field which Railway and Shipping Companies can claim as their own is indeed a wide one, and, metaphorically, can boast much virgin soil, the cultivation of which cannot fail to bring about a splendid harvest.

In the case of a railway desirous of advertising the health resorts along its lines, there are, I believe, many disadvantages to be overcome. For instance, there is a sad lack of interest shown by the residents and councils of the various holiday-places.

The railway is expected to bear the entire expense of such advertising, although the business residents in the town, and, indeed, the Council itself, undoubtedly receive, through a greater number of visitors, more than is their share of increased revenues. This is hardly reasonable, and it is a point worthy of praise that practically none of the Railway Companies have ceased to advertise under conditions so unequal. Fortunately developments are rapidly taking place which should do much to lift part of the cost from the Railway Companies' shoulders. Help by the co-operation of the local health resort Councils is becoming more generous each season, and I venture to hope that before long they will combine with the railway in forceful and profitable campaigns. If these be carried out as they should there is little fear that the results obtained will more than justify the expenditure. The opinion expressed in the early part of 1914 by the President of the Local Government Board to the effect that health and pleasure resorts, did they get powers to advertise, would not profit by them as they imagined, is one with which I do not think many business people will concur. Railway Companies have led the way in holiday advertising and that they still remain in the publicity field is sufficient reason for believing that they have proved to their own satisfaction that such advertising is worth while.

Practically there are three forms of publicity at present followed for Transport Advertising :—

(1) Posters on the hoardings.
(2) Press advertising.
(3) Handbooks.

and I now propose to deal briefly with these methods, each under a separate heading.

Posters.

Naturally, the question of what constitutes the ideal railway poster is a matter for argument, but without endeavouring to lay down any specific rules upon a question where rules are useless, one may be permitted to claim that the bare statement that such and such a resort is bracing is not good advertising. This in numerous cases is the sum and substance of the mes-

sage conveyed by many a poster above complaint in other respects. Indeed, out of six fairly recent railway posters I was able to discover but one which mentioned that additional information would be given on request.

Similarly with the posters issued by the various Steamship lines. Most of these, judged from an artistic point of view, leave nothing to be desired, but criticised from the standpoint of commercial value, would appear to be wanting in what might be termed "selling force." I allude particularly to those which show perhaps a vessel in mid-ocean or a piece of British or foreign scenery with no other wording than "TO —— BY —— LINE," or a similar statement. In such a phrase there seems little inducement to travel bv the particular line of Steamships advertised. Surely something more effective than this might be done. There must be many exclusive attractions which one sea route possesses as against another. Good use should be made of any such features. If their number is too great to detail on a single poster (for it must not be expected of a poster that it should do the work of a booklet), then why not state that a handbook containing further information is available?

Press Advertising.

One of the most direct methods of entering the homes of the British public is through the medium of the press. The choice of suitable media is extensive and caters for every class. It was not, however, until recent years, long after the advent of their first posters, that Railways and Shipping Companies utilised this source of communication to any serious extent. Even to-day the former are considerably more to the front, although why this should be so I do not understand. They seem well alive to the fact that advertising in daily and weekly publications possesses many possibilities of adequate reward, and have put out, and are still putting out, distinctly good work in this direction. I commend their example to every Passenger Ship Company as well worth following. Obviously there are readers of daily newspapers as well as of weekly periodicals who are in a position to go the shorter sea voyages, not only when called by business, but also for pleasure. I

believe, too, that there are numerous sea excursions round Britain alone which could be profitably advertised; but I have rarely seen one of these cruises announced in the newspapers, whilst the specimens that have appeared leave much room for doubt as to their practical value.

Handbooks.

Just as the mission of the Railway or Shipping poster should be to create interest, and the function of the press announcement to stimulate a desire on the part of the reader to learn more of the place advertised and the facilities offered of travelling thereto, so it should be the task of the handbook to state all that is worth telling on these points. Nor do I think that the average handbook issued by the Railway and Shipping Companies falls short in this respect. On the other hand, the books that I have seen are exceedingly informative. Of course, there are exceptions, but fortunately these are in the minority, and the ambitious and profusely illustrated literature that can be obtained are indisputable arguments to the fact that this section of transport advertising is of the highest order.

The various Companies—both Railway and Shipping—appear to exercise very great care in the compilation and production of their booklets, making them not only communicative but attractive; embellishing them with well-chosen photographs and illustrations by many of the foremost artists of the present day; placing their printing in the hands of high-class houses, and leaving nothing undone that can make them both pleasing and useful.

The advertising of Railway and Shipping lines is naturally a costly matter, but I quote the words of Mr. David Davies, M.P., to show that the expenditure is not useless. Presiding at the Annual Meeting of the Cambrian Railways Company on February 27th, 1914, Mr. Davies, M.P., said that they had had in the year 1913 the most expensive advertising scheme they had ever attempted. It had been so successful that they intended to go even further during the season.

THE ADVENTURES OF THE FIRST THREE-COLOUR PRINTER

BY H. SCHENKKAN

JACQUES CHRISTOPHE LE BLON was born at Frankfurt in the year 1670. There were in his family many well-known copper-plate engravers and artists, so that his inclination towards these arts was not at all remarkable. It has never been known for certain where le Blon learned the first principles of his art, but it was probably a copper-plate engraver named C. Meyer, of Zurich, who gave him his first lessons; and it is certain that he also worked in the studio of the famous French engraver Abraham Bosse. Probably young le Blon at this time acquired also a knowledge of the technique of painting. A nobleman, the Count of Martinitz, took a great interest in le Blon and presumably took him to Rome to the studio of Carl Maratte. Le Blon had scarcely been a year in Rome, when a Dutchman, Bonaventure van Overbeck, promised wonders if the young painter would go to Amsterdam. He went in about the year 1696, and painted principally miniatures, succeeding so well that Jan van Gool, about 1750, said they were almost as great as a handsome snuff-box, moreover being as exactly drawn and as vividly coloured as oil-paintings. However, the eye-sight of the young man grew very bad through doing this microscopic painting work, and therefore he commenced to paint genre pictures.

His luxurious inclinations and perhaps scarcity of money forced him to seek new ways of success in the field of art in mezzotint. In this process the artist, beginning with a polished copper-plate as usual, has to roughen the surface all over with a roulette or by help of the " berceau " or rocker, a semi-circular toothed chisel, which is rocked all over the plate. In that way little holes and ridges are produced all over it. In this condition the plate will give an entirely black print, by taking a pull from it in the usual manner of etched plates. By scraping away these ridges and by burnishing the little holes here and there, it is possible to get gradations, because these places, being nearly or quite flat, cannot hold the ink and will give high-lights. The most important advantage of the new process was in getting pictures by printing, without any visible grain.

It is certain that le Blon must have known of the experiments in polychrome printing, those " chiaroscuros " by Hans Baldung, Lucas Cranach, etc. But in this the intention was only, by help of black, brown and grey, or black, green and blue plates to reproduce more perfectly the different gradations from the original drawing. He must have known, too, of experiments to obtain polychrome prints with a single engraved plate, the plate being inked up locally in various coloured inks. But the method of le Blon was quite different from those old processes, and far more beautiful. He knew of and assented entirely to the theories of Newton concerning the mixture of rays of light and colours. In his book, " Il colorito," he interpreted clearly these theories.*

Without any optical help, relying only on his well-cultivated taste for colours, he produced his colour-plates in mezzotints and printed one over the other in yellow, red and blue. Our heliographic printers of to-day will be the best judges of the enormous difficulties he had to overcome. At this moment there are but few firms doing heliographic three-colour work and considering the optical and chemical aids we now possess we must have the fullest admiration for this clever worker, the first to enter on this sphere of work. He abundantly deserves some

* " Il colorito," by J. C. le Blon, London, 1722.

part of the fame which was gained by Gutenberg, Senefelder, Nièpce, Daguerre and Fox Talbot.

The first colour prints came out about 1704, and they fetched three and four hundred guilders (about £25 to £33). The inventor knew very well the value of his method and kept it thoroughly secret in order to make money by it. Therefore he went to the Hague, to found a company for colour printing. But the circumspect Dutchmen took no interest in his speculative projects and his efforts to secure co-operation failed completely.

By no means discouraged, he went once more to Paris, where he was also disappointed, but in London he at last succeeded. A rich and influential connoisseur, Colonel Guy, was won over to his scheme, and in a few weeks le Blon founded his company with some hundred shareholders. Immediately after closing the lists, the shares of £10 rose in value 250 per cent.

First the company imitated the pictures of the celebrated Masters of the Flemish and Italian Schools, and we read that these reproductions created great astonishment in the art world, indeed the wonderment must have been almost equivalent to that aroused by the first printed books.

The business having so far succeeded very well, the inventor, flushed with success, lost interest in his work. He lived as a gentleman of fashion and cared little for the business. In order to finish the work, which demanded much time, he engaged artisans who were put under his cousin, who knew the secret of the method, and they were expected to make the pictures which needed his master hand and practised eyes. The evil consequences of this lack of personal attention were to be expected. In the first place the cost of the work increased enormously, and on the other hand the beauty of the pictures deteriorated rapidly. In a short time the company became bankrupt. Everything was sold by order of the court, and the inventor narrowly escaped being imprisoned for debt.

How he succeeded in escaping is not known for certain, but probably his rich friends did not forsake him. The invincible optimist was soon seeking for fresh capitalists for a new project. He proposed to manufacture in England those paper-tapestries

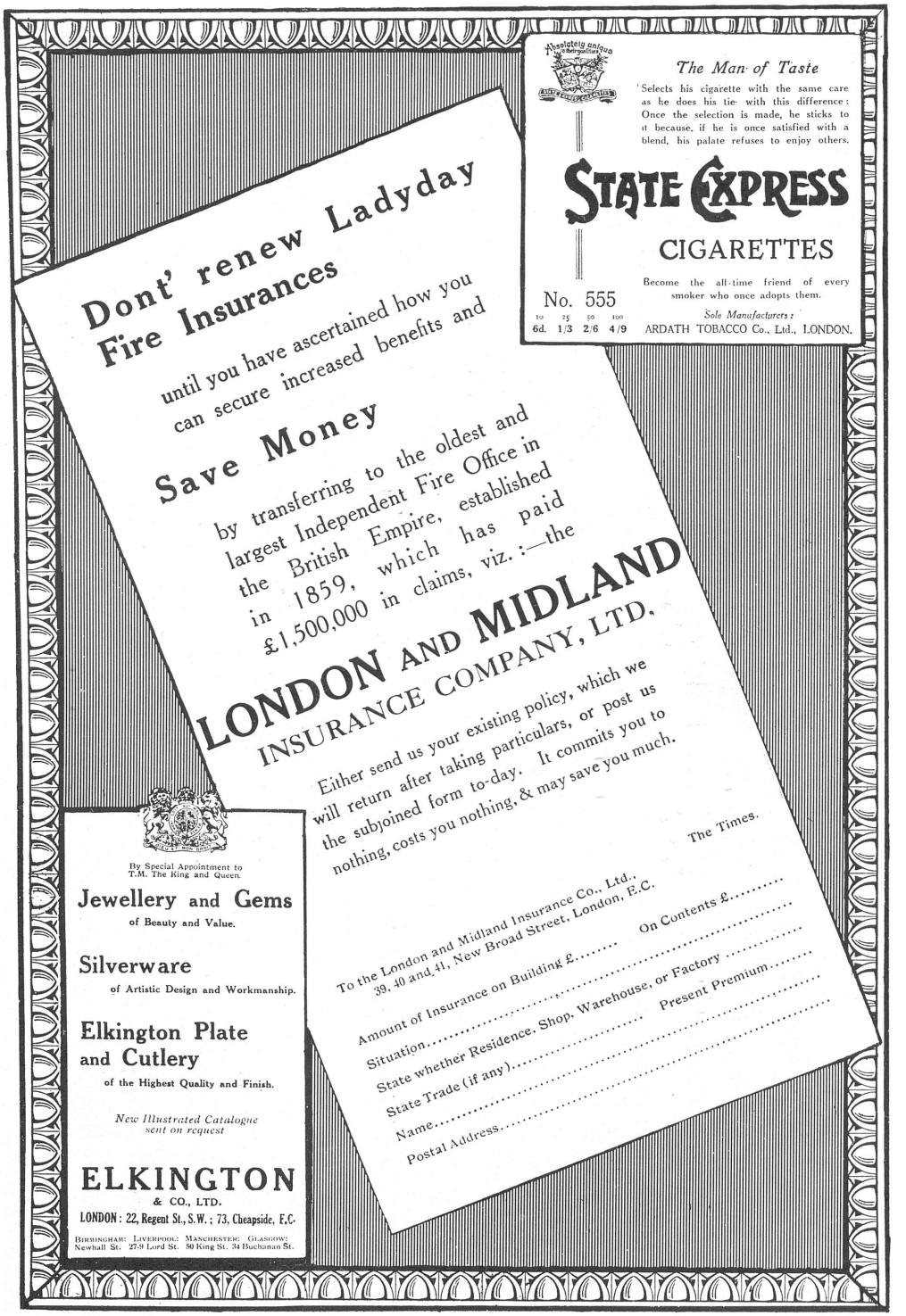
of Brabant, and this in a perfectly artistic manner. His claims were very characteristic; for instance, he said he would change every common dwelling house into a museum.

He succeeded for a second time and a big manufactory was erected in Chelsea. A Dutch painter, Jan Vogelsang, was engaged for sketching the tapestries and once more le Blon was on the zenith of success.

It can hardly have been the fault of the master alone that, in a very short time, the company became bankrupt like the first. Perhaps the capital was not sufficient, or his imagination and self-confidence had been too great. Le Blon vanished, and came penniless to the Hague in 1732. With a hundred guilders, lent to him for old friendship's sake he got to Paris. But his energy was not by any means abated. After five years he got a patent from the King of France for the production of his colour-prints.

He was an old man now, sixty-eight years of age. His spirit may have been fresh and strong, but his frame was weak. His bad eyesight no longer permitted his delicate work to be done with the necessary exactitude. The results grew more and more inferior, and he became slower in finishing his plates. His financial state grew still more precarious, and eventually he vanished from the circle of well-known artists in which he had moved. How he died, and where, has never been determined for certain.

Like a meteor le Blon illuminated the sky of the world of Art of his time. He was admired and worshipped; then he vanished and has been forgotten.



John Swain & Son, Ltd.

EXAMPLES OF NEWSPAPER ADVERTISING.

EFFICIENCY IN PRESS ADVERTISING

BY "MACBETH"

Of the "Organiser Magazine"

THE past year has seen a steady advance in the standard of press publicity. Advertisements have been better written, illustrations have shown marked improvement and typesetting has gone rapidly ahead. Advertising is better understood; advertisements are reaching a higher standard of efficiency.

Let me explain what I mean by efficiency in advertising. When a man decides to spend a certain amount of money in the press, say, for instance, £1000, it is possible for him to obtain a certain maximum amount of business; what that amount is no one can say, but if his advertisements were placed and written in such a way that they produced that maximum, they would be 100 per cent. efficient. In order to attain to that desirable state, the appropriation would have been allocated over various media in the very best way, the spaces chosen would have to be just right. The copy, illustrations, type setting, etc., would have to be the best possible. No one is ever 100 per cent. efficient in advertising, but I think few of us realize how far we fall short.

No very great results can be obtained unless one has, in the first place, an article that is worth advertising, and for which it is possible to create a more or less satisfactory demand; but given the right article, I think most of us approach the matter of advertising without realizing the great possibilities

which exist, and this accounts for the mediocre standard which still obtains in spite of the improvement shown during recent years.

We do not aim high enough. We say " Here is so much money to spend, if we can get so much business the result will be satisfactory." As a matter of fact, the ultimate result usually falls short of that which was hoped for and it nearly always will. The better plan would be to realise, if we have an article which it will be to the public's advantage to buy, that we have a certain amount of money to spend in order to induce sales, and that if only we can find the ideal way it must be possible to obtain quite an enormous amount of business. We should aim higher, and we should be then less satisfied with our little stereotyped methods and tricks of advertising, which are sufficient to obtain a certain mediocre standard of results which the average advertiser has come to look upon as satisfactory.

Few firms have yet realized that it pays to apply any really high standard of capacity to advertising. It is the custom to talk a great deal about the wonderful power of advertising and the marvellous capacities of the men connected with this divine work, but we don't really believe it. If Shakespeare, Michael Angelo and Andrew Carnegie started an advertising agency in Fleet Street to-morrow and promised you the very finest copy, the best illustrations and settings, and the most shrewdly devised allocation of expenditure, few would pay them more than 10 per cent., and they would then have to devote half their energies to securing contracts, and would only have half of them left for carrying out the work.

And so, instead of any very high standard of advertising, we are content with mediocrity. Instead of being 70 or 80 per cent. efficient, we stay, say, at 20 or 30 per cent., and if a man gets 31 per cent. we call him a genius.

Instead of getting imagination, sincerity, public service and humanity into our advertisements, we continue, most of us, with our little counterfeits that the public have long since learnt to recognise for what they are. We copy each other's methods and fall down in worship of catchy drawings, smart head-lines, slick copy, and good stunts.

I hope my readers will pardon this little tirade, but it has a purpose to serve, *viz.*, to turn us from that self-complacency with which it is now the fashion to regard ourselves and each other, whenever we talk and think of advertising. And now let us cheer up for a moment and look at one or two selected "smart ads." from the press.

I am not selecting the very best, nor the very worst for review; it would be easy to praise the former and condemn the latter. Let us take the average kind of advertisement which passes muster to-day and see where it could be improved.

Roderick Dearlove has a speciality—by the way I wish people would have specialties instead of specialities, the former is a much nicer word. He makes hunting, golf and sports costumes. Therefore he has a block made to show two of his costumes and especially to illustrate how they look when their wearers are playing golf. "Aberdare" has just made an impossible effort to hit the ball; in order to get into her present position she would have had to knock "Midlothian's" head off. The drawing is ridiculous. Every golfer will recognise the absurdity of "Aberdare's" position, and would at once be put out of humour with the advertisement. If this were pointed out to Mr. Roderick Dearlove, probably he would say that he put these two costumes in such close proximity on the tee because he thought he would get just twice as much value as he could obtain from one. He accepts absurdity in exchange for so much imagined economy. He is wrong, it would not have been too good for him nor for his customer, if he wanted to show someone playing golf, to show them playing golf in the right way; he should have gone to an artist who understood golf, and if he had shown a good posture his picture would have been of interest to golfers, who, after all are the people who will buy golf costumes.

Whenever I see that fine golfing poster of Johnnie Walker, after having obtained a magnificent "Follow-through", I always look at it with great interest and wish it were possible for me to do the same. Moreover it is easier, especially in a small advertisement, to sell one article than to sell several.

There is nothing in the advertisement to show that Roderick

Dearlove makes good costumes, but merely that he makes costumes in exchange for five guineas, also that he sells rain and race coats, but then so do many other people.

This is a fair average everyday example of the tailors' advertising in illustrated magazines.

Take a typical railway press advertisement. If you have made up your mind to go away at any period of the year, you know enough to find out how best to get there. The Great Northern Railway just gives you this information and nothing else. It is practical, I admit, so far as it goes, but it does not go far enough. It tells you what you would find out for yourself in any case.

It does not deal with the advantage of going by the Great Northern Railway, it does not make that particular railway mean anything particular to you in the way of special comfort, cleanliness, speed or punctuality; it is just a railway; it happens to be called the Great Northern Railway. It gets you from London to certain other points and the advertisement saves you the trouble, if you happen to see it, of obtaining information that is necessary to you if you propose to travel by it.

What would I propose? My answer is: Think of the Underground Railway, think of the interest they have brought to bear on their system. Compare their opportunities, not as they present themselves to you to-day now that you have seen what has been made out of them, but as you might have viewed them five years ago—the opportunities of advertising a hole in the ground, by comparison with a great main line system like the G.N.R.

Elkington & Co. are a firm of world-wide repute. My cutting illustrates the manner in which they advertise themselves in the "Times." Three bald statements followed by the words "New Illustrated Catalogue sent on request." Copy as copy is absent; the typography is of the crudest. Can anyone, Messrs. Elkington included, think they have reached any high standard of efficiency in this announcement?

They are advertising articles of great beauty. They do not even take the trouble to save their advertising from ugliness.

No one but a well-established firm could afford to put in an advertisement of this description; Elkingtons being so well-known, by reminding the public of their name and stating that their new catalogue is ready, will probably obtain a small number of applications, certainly not a third of what they might have received. And this advertisement did not appear merely once, the copy was repeated in the same paper.

Ardath Tobacco Co. give us an example of that sloppy kind of writing which is often called advertising "Literature." They tell us that "The man of taste selects his cigarette with the same care as he does his tie—with this difference: once the selection is made, he sticks to it, because, if he is once satisfied with a blend, his palate refuses to enjoy others." In the first place the difference referred to has nothing to do with the selection; whether a man of taste "sticks to it" or not does not affect the care with which the choice is made. And why a tie should be dragged in at all I cannot think, since both are selected for entirely different purposes and by entirely different methods.

The statement that once a man is satisfied with a cigarette his palate refuses to enjoy others is simply untrue.

This advertisement cannot be expected to carry conviction; it will produce some business, but not much, and yet it cannot be said to be below the average of other cigarette advertisements appearing to-day. The consumption of cigarettes is so tremendous that every firm keeping the name of their brand before the public will get a share of the trade, but there is no reason why advertisers should not attempt to get the fullest possible return for the money they lay out in newspaper space.

Finally, Insurance. Insurance Companies make money so easily that they do not feel it necessary, as a rule, to pay great attention to their methods of advertising. As a matter of custom they take a certain amount of space and submit to the boredom of having to fill it. Recently, however, one or two of the Companies have been trying to do something better, amongst them the London and Midland.

An Insurance Company is a corporation of some importance, it is right that it should be dignified in its advertising. In the past the Companies have been dignified, and deadly dull.

Dullness and dignity do not necessarily go together, it is possible to be dignified and interesting.

The London and Midland are not dignified. To begin with, their typography puts one completely out of humour. It is ugly and raw looking. The leaded lines, the broken rules and failure to carry them right round the advertisement are no doubt responsible for this. The choice of type is also poor.

A lesson could profitably be learnt from the Edinburgh Insurance Companies, who have adhered rigidly to Caslon Old Face type, which is easily read and always carries distinction and character. Cheltenham Bold, fine type as it is, is not ideal for the use of financial corporations. It shouts too much. At the same time it must be admitted that the type has been sadly mishandled. The copy might have been worse, it is an advance on that generally used by Insurance Companies, but the " Don't renew " jars and is out of character with the traditions of an old established fire office. I always think it is a mistake to start an advertisement by telling people what not to do. It is surely better to inform them what they should do, and the two first words, could, with advantage, have been replaced with " Before renewing." It would have been still better to have connected the heading with the coupon by some such line as " Effect economies by posting this form to-day."

As already stated, I have not dealt with the exceptional advertisements; it would have been easy to select examples which fall far short of those mentioned, and it is pleasant to note that a few advertisers are making a conspicuous success and must realize something of the hidden possibilities of this all too complacent art.

The block to illustrate this article was made by Messrs. John Swain & Son, Ltd.

THE GREAT WAR

BY W. ILSTON COX

NO one can say if the title of this article will represent the one thought uppermost in our minds when this book is published, and I can only hope that when these lines are permitted to see the light of day the title would be considered more topical if it were inscribed " The Great Peace,"

At the moment of writing, our placards and newspapers are full of the terrible bombardment of Antwerp and to the mind of the colour maker, when his thoughts are permitted to dwell on his craft, the word " Antwerp " suggests a commercially useful blue. It is not of Antwerp blue, however, that I would write at this moment, but of the more popular colour, the blue with a " bloom," known in the printing trade as bronze blue.

After red, bronze blue is the most largely used of all printing colours and it is somewhat remarkable to note what a hold this colour has on popular fancy. To some readers of the " Process Year Book," bronze blue would not appear to be an important factor in its production, so I would say for their information that few coloured illustrations are produced without a refined form of this indispensable colour.

There is no pigment used in the world of print that is more affected by this disastrous war than bronze blue, and at the present time it fetches about 100 per cent. more than its normal price.

Part of the material for making this kind of blue is produced in England, but one of the ingredients, known as prussiate of potash, is obtained from Germany, with the result that

when our present stocks of this chemical are exhausted, not only this country, but the whole world, will, for a time, have to cease making bronze blue while the war is upon us.

The name " potash " originates from the fact that at one period it was simply ash produced in a pot from a certain kind of wood.

At the time of the Napoleonic Wars, it was used in the making of soap—to-day we use soda—and we have ceased to make potash, because we can get it from natural sources in Germany.

In times of peace there is no inducement for any nation to start producing potash in competition with Germany. Attempts have been made to use soda as a substitute for potash and in the case of certain yellows, bichromate of soda is a useful alternative, but on the other hand trials with prussiate of soda for making bronze blue have not, so far, been a conspicuous success.

It is an economic law, supported by our system of international exchange and competition, that every country should be encouraged to produce that which it can do best, and much as we should like to believe that it is possible to obtain everything necessary to our civilization within the confines of the British empire, it is an indisputable fact which is brought out very clearly by the war, that there are a number of articles for which we have to rely on foreign nations.

In business one sometimes hears the remark that we are not at war with commercial Germany—but I beg to differ—we are always at war in a competitive sense. There are many things we can make better than Germany, but there are some we cannot produce as well, and so of necessity we must always be in a warlike state of mind while our inferiority in a number of manufactured goods is beyond dispute. In the matter of material for making bronze blues and certain dyes, no country in the world can, at present, successfully compete with our Teuton neighbours, and in spite of our patriotic desires and enthusiastic endeavours, it will be a very long time before we can supply all our needs in this direction.

Let us hope no time is being wasted.

THE CHARACTER OF PAPER USED FOR PHOTO-MECHANICAL PRINTS

BY A. J. BULL

IN looking over back numbers of the "Process Year Book" for the last sixteen years, some interesting points may be noted with regard to the surface of the paper used for the illustrations. In the 1898 Year Book the smoother papers for printing half-tone have already come into use. This is a consequence of the efforts to obtain the best results from the half-tone blocks. It is only when the paper is capable of receiving the impression of every individual dot, with all its variation, not only of size, but of shape as well, that the qualities of a block are seen at their best. All through the development of the half-tone process one can follow this relation between the paper and the block, and the use of coated papers was necessitated by the use of fine screens.

That these glossy papers, with their occasional reflections of bright light, are irritating, and hence, under some circumstances, injurious, has been gradually recognised. As early as the Year Book of 1898, there occurs on page 52 an example of a coated paper which has evidently been slightly roughened by rolling after the three-colour half-tone was printed. A few years later, as may be seen by examples in the 1902 and 1905 Year Books, this method became fairly common, but it did not obviate the occasional reflection from the still glossy paper surface, for while the rolling breaks up the evenness of the surface it does not destroy its intrinsic smoothness. The ill effects of glossy papers for book illustrations, and particularly for reading, have been so far recognised that last year the educational authority for London took steps to mitigate it, as far as was practicable, in its school books.

The Character of Paper Used for Photo-Mechanical Prints

There is, however, another aspect of the matter. It is widely recognised that much more pleasing and artistic effects are obtainable on a paper with a rough surface than with one of extreme smoothness. The use of glossy papers has, in fact, been a common source of criticism of photo-engraving by artists. Although much has been done towards the printing of half-tones on matt surface papers of the type to be seen on the title page of the Year Book for 1906-7, and this often with conspicuous success, it remained for the advent of the rubber offset method of printing to enable printing to be done on paper of any required surface. The specimen opposite page 177 of the Year Book for 1909-10 well illustrates its possibilities. This method has accomplished much, it has made possible the printing of fine lines and half-tone work on any desired paper, it has been the means of producing some notable examples of colour printing (Year Book 1913-14, p. 218); but on the other hand, it is not usually characterized by any great depth of colour, nor has much three-colour work requiring exact register been yet done by it.

The rotary gravure process is another important method, which seems destined to effect great changes in the character of the paper used for illustration work, and of this there are excellent examples from the frontispiece of 1906-7 onwards.



ILLUSTRATED BOOKS

BY CHAS. T. JACOBI

Chiswick Press.

THE Editor has desired me to contribute a short article on the above subject, which will to some extent explain the fresh arrangement of the present volume and which will account for the separation, as far as is possible, of the illustrations from the explanatory or reading matter. To do this satisfactorily in a book of this kind is most difficult, because this volume is an annual review dealing with the many different reproductions used for illustration purposes, and some allowance must be made for any departures from the suggestions made for the "lay-out" or plan of the present volume. To arrive at perfection the ideal book should be in absolute harmony as regards both typography and pictures. This would mean limiting the illustrations to the line method which, of course, would defeat the very object of issuing this Year Book, embracing as it does all sorts and conditions of process work.

To carry out my instructions would be largely to repeat myself, so I have suggested that it would be well to reprint part of that article which I contributed in 1910-11, with the necessary trifling corrections or alterations necessary to bring it up to date.

"If we analyse most illustrated volumes we find that they have been designed in a somewhat haphazard manner, without any consideration whatever for the connection or relation of blocks to type, or *vice versa*. In the first place, the essential thing to consider is whether the volume is to be a mere picture book or to be of a decorative character; or it may be a com-

bination of the two, that is, it may be that the context is to be pictorial, but treated in a decorative manner. But as a general rule it can be taken that illustrated books fall under the headings (a) graphic, or (b) decorative.

"By graphic I mean those books that are pictorially printed to delineate the subject of the work, and these are usually done specially; that is, a volume is handed to the artist with an instruction to picture the most important points of the book, or sometimes it may be that the volume is to be illustrated by various reproductions obtained from different sources. On the other hand, those books to be decorated require a very special treatment and will test the uttermost resources of the artist, particularly if this decoration is to be made consistent with the type employed and at the same time designed with a regard to the literary side of the work.

"In the early days of process work many difficulties were experienced in printing satisfactorily from blocks, and a comparison of work done in former times with that done now-a-days will show the great advance made in that direction from both line and, especially half-tone reproductions. The blame was not, however, altogether due to the printer, for in those early days the blocks produced lacked much of the depth, sharpness and finish of those made at the present time.

"We must not, however, overlook the fact that a perfectly plain piece of printing quite devoid of any kind of illustration, or even decoration, may be made an artistic production. To arrive at this we must select an appropriate type and decide the proportion of the page of printed matter to the leaf of paper to a great nicety. Having done this the precise position of that page on the paper is an essential feature if the book is to be a success. The press work is also another important element to be studied, for much depends on this part, and especially so if the work should be an illustrated one.

"The printer had to alter his methods entirely, and to do this he had to rely on the machine manufacturer for such a press as would give him the right kind of impression adapted to the requirements of the altered conditions. Again, ink as the necessary medium between block and paper, had to be made

suitable for such printing, one which was not too stiff and yet quick-drying in its action. Lastly, the question of paper had to be very seriously considered, and here was a great difficulty, because half-tone printing really requires either a very highly rolled or calendered paper, or one that has been coated with some mineral substance. This last paper doubtless gives the finest and most brilliant results, but the glare—usually a dead white—is objectionable, quite apart from the uncomfortable sense imparted by the mere handling or turning over of the leaves of any work printed on this so-called 'art' paper.

"With regard to half-tone textual illustration there is certainly a lack of harmony between such blocks and printers' type. Still it is quite possible to modify that difference somewhat by a little forethought on the part of the person responsible for the designing or 'lay-out' of the volume. Here, again, the illustrations themselves must be considered, for if the general character of these blocks consists of many 'high-lights' an ordinary old-style type with the lines opened out a little will serve somewhat to preserve the relation between pictures and type. On the other hand, if the blocks comprise a large number of 'solids' or medium tones, a heavier class of type, with the lines set closer together, is necessary. All these points require an amount of discrimination which may be cultivated by all.

"If the volume consists of full-page illustrations and not textual cuts, it is a good thing to place these all together at the end of the volume, thus dividing (a) text, from (b) illustrations. By these means it is possible to limit the use of the shiny paper to the pictured part and the body of the volume may be printed on one that has a more natural surface. Care should, however, be exercised in selecting the two kinds of paper that the colour or shade does not disagree. If, however, an absolute match is impossible, a contrast is better than a bad match."

IS A SCIENTIFIC TRAINING NECESSARY?

BY J. R. RIDDELL,

Principal Saint Bride Foundation Printing School, London.

THE above question is being asked and answered from various standpoints day by day and when one, in a reminiscent mood, compares the conditions and requirements of the craft to-day with those in vogue some twenty years ago, the answer must be a most emphatic YES!

Efficiency in men and equipment is the demand of the hour, a demand that will be satisfied with nothing but the best. New methods and systems are constantly being introduced by those who are responsible for the direction of our present-day industries, not only that waste labour and energy may be diverted into profitable channels, but also that the consumer may receive the greatest possible satisfaction, and at the same time allow the producers a fair return on their investments.

One necessary rule for the successful working of any business is that those directing and controlling affairs should have a thoroughly practical and intimate knowledge of the details of their business.

To maintain progress and achieve success a business must be conducted on sound commonsense lines, and if the system adopted is the result of wide practical experience and not the "theories" of those with little or no knowledge of the technicalities of that business, then there is every hope of success being attained.

It is very gratifying to find the Printing and Kindred Trades

proving themselves no exception to the rule, for have they not accepted as an article of faith a standard Cost-Finding System! In so doing they have recognised the merits of "Scientific Management" of which Cost-Finding is but a unit.

Is a Scientific Training Necessary?

Still, the printing craft in very many instances cannot be said to be controlled by practical business men, but by those who have perforce to put a blind trust in others occupying subsidiary positions to themselves. Neither does it help matters when the business heads are surrounded by those whose practical knowledge is often limited and technical experience meagre.

Organization is undoubtedly the key that unlocks the door of success, and, this being so, "Why is it so many printers appear too busy to study closely and impartially the requirements of their business?" Successful organization will remove many ills and will rid employers to a large extent of that bugbear "routine," allowing them to give full play to their executive ability in the details of their work.

If, and there is not the slightest doubt, organization plays such an important part in the success of a business, is it not fair to assume that a practical man, scientifically trained with a thorough knowledge of the technicalities of his business, would have a much greater chance of success than one who can only "talk" theory culled from text books and trade literature?

"Monuments" have been raised to the memory of many theorists in the printing offices in this country, "Monuments" that speak eloquently of useless expenditure on unsuitable plant, fixtures and fittings. It is well to remember that a "theorist" can wreck any business, and that a logical reasoning does not always coincide with the rules of practice as we know them.

Naturally the question will be asked "Where are the Scientifically Trained men to be found?" At present they only inhabit the premises of those far-seeing firms who recognised the value of the intelligent practical man and gave him an opportunity of acquiring a commercial education that made him valuable to them in their business, in other words "a fixture" forming part of their good will. That there are

such men to be found in our printing offices filling responsible positions as managers, overseers, salesmen, travellers, estimating and cost clerks, is a hopeful augury for the future; still there are many firms where such conditions do not prevail and where the "theorist" reigns supreme. In these latter houses one not infrequently finds a lack of harmony, general discontent on the part of the employees and invariably chaos in the management of the various departments.

Once the value of the material found in the works is fully appreciated, the demand will increase for technical men trained along scientific lines to fill the more important posts, and one does not need to be a prophet to see that the Technical Schools of the future will have to take a large part in supplying the right class of man, one who has received a sound business education as well as a first-class technical training on lines demanded by modern requirements.

This may mean that the methods now prevailing in teaching and attendance in most of our schools will have to be radically altered. The aim must not be to cram the students in order to pass a particular examination, but rather to coach them along lines that will make them of real value to their employers; progressing from year to year until they shall have reached the stage when they are qualified to obtain a diploma that will rank as a hall-mark of efficiency and which will be accepted by employers as sufficient proof that the holder is practical in his particular knowledge of the craft and capable of filling an honoured post.

Before progress can take place it will be necessary for those in the craft to take a greater interest in the technical schools, even as they exist to-day, with all their shortcomings, which are not always due to the teacher and those responsible, but very often the results of a faulty system and a general lack of interest by those who would be most benefited by the opportunity our technical schools afford.



W. F. Sedgwick, Ltd.

A. E. Smith, Photo.

CATALOGUE REPRODUCTIONS.

THE PRODUCTION OF CATALOGUES

BY WALTER J. AVERY

IN these days, when "Shopping-by-Post" is becoming more popular than ever, catalogues form the most important literature issued by the advertiser, because the catalogue becomes the silent salesman to customers who are unable to travel to the store or warehouse to make their purchases. It should, therefore, contain sufficient description and illustration of the articles to convey to the mind of the prospective purchasers such information as will enable them to order the goods.

The necessity for careful compilation and production is therefore obvious, and whilst in some cases, particularly in motor-car and motor-cycle catalogues, every care is taken in the arrangement of the detail it is surprising how few catalogues show that even the fundamental principles of good style have been studied; neither is any consideration given, in the course of their production to the class of people likely to read them.

In this article I will endeavour to illustrate some principles governing the production of good catalogues, and I must ask the reader to kindly refer occasionally to the accompanying page of illustrations for examples. These illustrations, although very carefully reproduced, do not show all the good qualities of the originals, which were in colours, but they will serve to demonstrate the various points I wish to mention.

The cover of a catalogue is of primary importance, for unless this is pleasing and attractive, probably half the value of the

catalogue is lost before the contents are looked at. The covers of the " Sunbeam Motors," " Rover Motor Cars," " Mulliners, Birmingham," " Alvaston Maintenance," and " Green's Economiser at Collieries," each present different styles which are particularly good. The " Sunbeam " cover is printed and embossed in red and gold on white parchment paper, the " Rover " and " Mulliners " are respectively printed and embossed on brown and grey cover papers, whilst the " Alvaston " cover is printed in black and white on grey cover paper, showing a very clever use of the American shading medium for obtaining the beautiful sky effect. A point to be observed on this cover is that the man in the foreground looks about 10 feet in height in comparison with the surroundings, and this seems erroneous, considering that it detracts from the importance of the motor-car, which I consider should have been most prominent. The " Green's Economiser " cover shows an effect of reality produced by printing some portions, such as the furnace and the windows of the factory in red ink. Just a little touch of colour breaks up the monotone. In this case the border, which is also printed in red, seems to be too strong. It would have been better omitted.

Another feature now being introduced to enhance the appearance of catalogues is the insertion of loose end-papers which are placed between the cover and the text, both at the beginning and at the end of the catalogue. These end-papers consist of sheets of paper, usually the same colour as the cover but a little thinner, and printed in one or more tints. A specimen is shown in the top right-hand corner of the accompanying illustration and was used in a catalogue issued by Messrs. White & Poppe.

The title page is another important item in good catalogues and in looking over a number of rather high-class productions I find that there is a conspicuous lack of good title pages. The title page of Messrs. Waring & Gillow's Carpet Book is printed in two colours, the words " Carpets of Quality " being in red whilst the remainder is in black ink on white antique paper. It is one of the finest catalogue title pages I have seen, from an artistic and typographic point of view, and is in complete

harmony with the book. In the " Rover " and " Mulliners " title pages a complete contrast is seen. On the one hand, that of the " Rover," which is printed on white art paper with black printing on a pale yellow tint, is rather too overcrowded to be very artistic ; and on the other hand, that of " Mulliners," which is printed in brown ink on a grey linen surface cover paper is quite a good style because of its simplicity, its contents and its balance.

With regard to the text of catalogues much latitude is shown in the amount of matter usually printed on each page. It may be necessary in the case of the " Rover " text page to have such a large amount of small printing, and it may be desirable in the case of the " Mulliners " text page to have a small amount of matter and an illustration, but putting the two side by side for comparison the " Mulliners " text page looks the best. It just contains sufficient information, and the illustration " tells the story."

The most effective catalogues are those which contain illustrations, and the use of illustrations in catalogues is a subject which is receiving the attention of shrewd advertisers who recognise what a valuable asset good illustrations are to a catalogue. There is also a growing tendency to reproduce the illustrations in natural colours.

There are two methods employed for the insertion of these " facsimile " illustrations ; the first method is to print the illustrations separately and paste them in amongst the text. This method has been employed by Messrs. Waring & Gillow in their Carpet Book and by Messrs. Mulliners in their Motor Body Book, and the result is very effective and good. The second method is to print the colour illustrations with the text.

In the former method any kind of rough or coloured paper can be used for printing the text, but the cost of pasting the illustrations into the catalogue is an expensive item, and in the latter method only art paper can be used.

A very fine example of this method is shown in a supplement to the *Ladies' Field*—March 28th, 1914—issued by Messrs. Harvey, Nichol & Co., Ltd., and which also contains a clever

border design around each page. It is an excellent example of good printing and good block making.

In Messrs. Burberry's catalogue the illustrations are reproduced from pen sketches in line work and are used very advantageously in displaying some very delicate shading effects.

In conclusion, let me suggest a more intimate relationship between the advertiser, printer and engraver, so that the result of their co-operation and the harmonious working of each will be the publication of catalogues which will be a credit to the producers and a profitable investment to the advertiser.

I am indebted to the following firms for their assistance in the production of the article, to whom I render my sincere thanks—The various firms named whose publications are reproduced; Messrs. Percy Lund, Humphries & Co., Ltd., and Messrs. W. W. Curtis, Ltd., for providing the original catalogues from which some of the illustrations have been made; Messrs. W. F. Sedgwick, Ltd., for making the half-tone block; and to Mr. A. E. Smith for making the photographs.



Block and Design by L. C. C. School of Photo-Engraving and Lithography.



Drawing and Blocks by Philipson & Son. Ernest Marriage, Photo.

JAM!

Inks by Shackell, Edwards & Co., Ltd.

THE PHOTOGRAPHIC ADVERTISEMENT

BY ERNEST MARRIAGE, F.R.P.S.

THERE is a good deal of scope for the use of child models in advertising. I do not mean the fat naked baby idea in connection with patent foods—that is probably worked to death and ceases to attract—but photographs of pleasing healthy-looking children engaged in some way with the goods to be advertised. It is most desirable that the child (one is easier and probably better than two) should be caught unconscious of the camera, and for this purpose there is nothing so good as a reflex fitted with a telephoto lens of portrait type. My illustrations were made with such an outfit, 5×4 size, worked upon a tripod; the lens was an 8-inch *f*/3 portrait lens fitted with a 5-inch negative attachment, which gives an equivalent focus of 24 inches with an aperture of *f*/9. One of the modern fixed-focus telephoto lenses would be almost equally useful. A long-focus lens is best for the work, as it puts difficulties in the way of the inclusion of unnecessary detail, and gives a type of perspective which makes the final result more suitable for viewing from a distance than is obtained with short-focus lenses.

My young model, as soon as he found there was jam in the jar (not too much, for reasons good) was quite content to pose over it with a spoon, and leave me in peace with my eyes on the

finder. Fig. 1 is one of the first that were taken. The other illustrations were made a month or so later, but the child's interest in the work was still keen, and when the jar was produced he immediately brought the cushion to make a comfortable seat on the gravel.

There are several failings in Fig. 1 which are avoided in the later prints. The aforesaid cushion is too prominent, and so are the bricks in the wall and the doorway of the house. The idea in this case was to make the jar and the label as prominent as possible by selective focussing, a result which has been achieved to a great extent. In some cases this method may be useful, but generally the print will be lettered afterwards, and it is better probably to rely upon the introduced lettering to call attention to the maker of the product. There is hardly sufficient space left for lettering in this case, and the label is not prominent enough to give the needful publicity alone.

After this experiment I decided to neglect the label and focus for the best effect on the group. A brown-paper background took the place of the brick wall, and the cushion, though it had to be used for the sitter's comfort, was tucked in so as not to show. The action in Fig. 2 is better than in either of the others, but the expression on the boy's face was thought to be open to a wrong construction, so a pose similar to fig. 3 was actually used for the show card. It may be noted that in both these prints there is a feeling that something is wanted to fill up the background. There is this emptiness particularly in Fig. 2. That is as it should be; the photograph must be arranged with the final effect of the added wording in the mind.

A word or two of warning as to the block maker may be desirable. Do not let him touch up the print or the half-tone block. By all means in your power ensure that the print is a good one and that any defects or alterations are made correct before passing it on, then insist that the blocks must give a replica of the print. It is fatally easy to work up a good photograph into a mongrel product that makes a less obvious appeal to the public.

COMBINED LETTERPRESS AND PHOTOGRAVURE

By Major-General J. WATERHOUSE, I.A.

PHOTO-ENGRAVED plates usually require some lettering and this may be done by hand or by reproduction of type. The former is the usual method, but requires the services of a skilled engraver and takes time, while the latter, though perhaps not so neat and finished, can be done by transfers much more speedily and cheaply.

A method of doing this was worked out in 1887 and practised by the late Mr. A. W. Turner, in the Survey of India Office, Calcutta, and was described by me in the Annual Report of the Photographic Office, Survey of India, 1887-8, as follows :

" The lettering for half-tone plates is usually done by hand, but recently we have adopted a method of lettering the transparencies by printing from type on slips of thin collodionized gelatine, which are cut and fastened on their proper places in the transparency. In order to make the printing more opaque it is dusted over with red bronze powder which adheres to the feebly printed letters and gives them great opacity. Facsimile names and writing or printing on thin paper can also be inserted by coating the plate with sensitive asphaltum solution and exposing it to light under the writing, etc., then developing with turpentine or benzine and etching with perchloride of iron. Flat or shaded tints can also be inserted on the plates by applying the dust grain, then stopping out the plate all but the parts required to be tinted, and etching with solution of perchloride of iron at 20°B.

Combined Letterpress and Photogravure

In the Report for 1888-89 I wrote:—"The method of lettering the transparencies for photo-etching, by printing from type on strips of collodionized gelatine, referred to in last year's Report, was frequently employed and found very useful, as also was the method of introducing flat or shaded tints, which was found to add very much to the utility of the process, particularly in improving an uneven background. By its means irregularities arising from a defective negative, or due to the material used as a background can be evened up in a remarkable way. A tint laid on the face of an etched plate seems to lighten the shadows and darken the lights, thus producing an even ground, instead of a rough and uneven one."

A method of joining up several transparencies to form one plate was also devised by Mr. Turner and is described in the latter Report. "A clean glass plate is polished with French chalk, collodionized and washed. Transparencies of the different subjects required to be etched together on one plate are developed on it in the usual way, and when dry a sheet of paper thickly coated with gelatine is squeegeed upon the glass plate. The paper is allowed to dry, when it will easily come away from the glass support, bringing the images with it. The transparency on paper can now be cut up and the different subjects joined together in any way required, just as photo- or litho-transfers are treated. The several parts of the transparency are put in position on a second sheet of paper and secured with a little india-rubber solution. The whole is now immersed in cold water and allowed to soak for a minute or two, and then squeegeed down on a plain or collodionized plate. After five or ten minutes the plate is placed in a dish of warm water (100° to 110°F.) when the paper support will float off, or, if it does not, it may be carefully stripped from the glass and will leave the transparencies in exact position. The method necessarily requires care and delicate manipulation, but it has proved of great practical use."

It will be seen from the foregoing that the union of letterpress and photogravure on the same printing plate is no new thing, though capable of diverse applications.

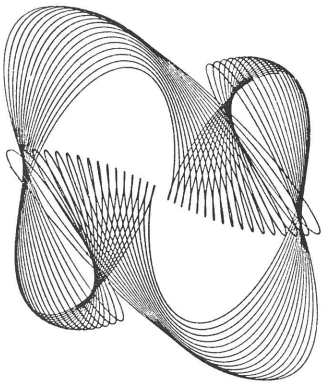


Fig. 2.

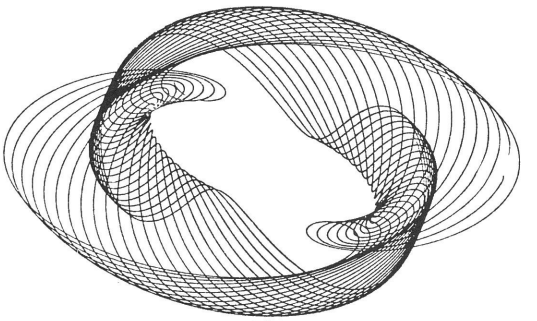


Fig. 3.

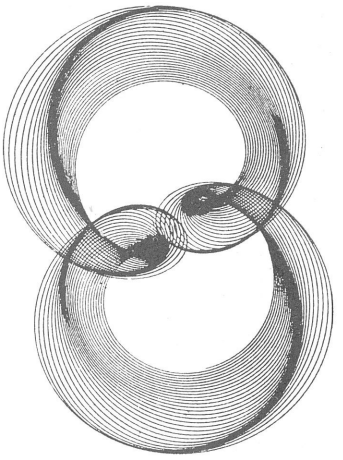


Fig. 4.

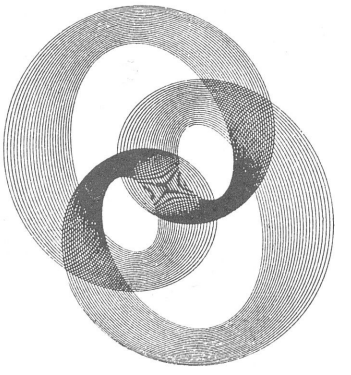


Fig. 5.

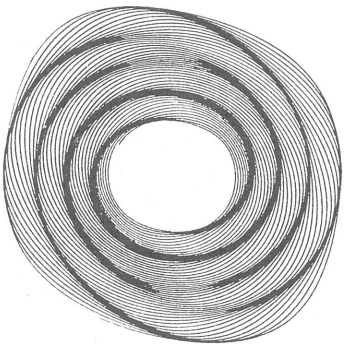


Fig. 6.

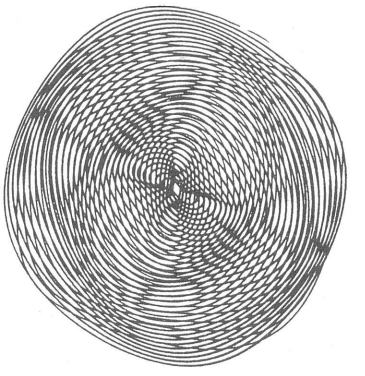


Fig. 7.

HARMONIC VIBRATIONS.

See Article by Douglas S. Cowley, A.C.A.

Messrs. Vaus & Crampton, Ltd.

HARMONIC VIBRATIONS

BY DOUGLAS S. COWLEY, A.C.A.

AN article entitled "A Revolution in Bank-note Engraving" by A. E. Bawtree, F.R.P.S., in the last issue of the "Year Book" has suggested the possibilities of a commercial use for the designs made by the Harmonograph or the "Twin Elliptic Pendulum." This apparatus, which is extremely simple in use and which consists in the utilization of the forces of nature only, produces the most wonderful designs of infinite variety and beauty of outline. It consists as shown in Figure 1 of a heavy pendulum swung from the point of a hook affixed firmly in the beam of an ordinary ceiling or roof and carrying a second pendulum (called the deflector), swinging from a point in the top pendulum as nearly as possible to its centre of gravity. The hook, from which the pendulum is suspended should be a large one, and capable of containing in a small cup at the point a bicycle ball or other hard and smooth substance. The small bar of steel which rests upon this point has a cup-like depression to prevent it sliding off the hook altogether.

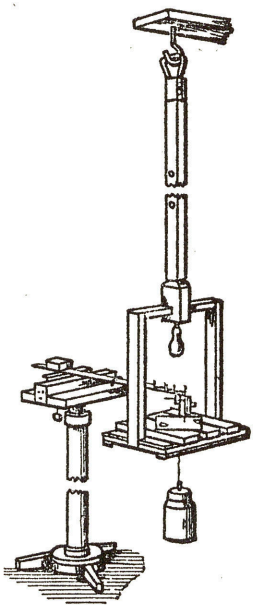


Fig. 1.

The bar of the top pendulum should be made in sections so that it may be lengthened or shortened at desire; for this, gas-tubing is excellent.

The bottom pendulum consists mainly of a weight suspended from a chain, and for this purpose boiler valve weights may be used.

The pen, which may be either an ordinary fine one, or, if delicate continuous work is required, may be made from a piece of glass tubing terminating in a hole of microscopic proportions, rests lightly upon a card placed in the centre of the block of the main pendulum as shown in illustration.

The pendulum is swung by a light pressure on the handle, care being taken to avoid anything in the nature of tortion.

Innumerable different ratios may be obtained, which give a series of different figures, but, for working purposes the ratio of 3 to 1 (equivalent to the perfect 12th) gives the finest results; such a ratio is seen in the specimens produced here, marked Figures 2, 3, 4 and 5.

Figure 2 represents a sharp setting, *i.e.*, where the ratio of the deflector to the main pendulum is slightly more than 3 to 1.

Figure 3 represents a flat setting, being the converse of figure 2.

Figures 4 and 5 represent a much more natural setting where the two pendulums are swinging practically in harmony, giving a series of double ellipses.

Figure 6 represents a sharp setting of the same ratio, where the two pendulums are swung almost in unison, there being a very small deflection.

The last figure of the series, figure 7, represents a superimposed design in the same ratio, each design being swung in opposite directions and with less deflection than in Figure 6. The interference figure shown in this design is of a very beautiful pattern and is of the general type obtainable by superimposing one design of this class upon a similar design swung in the opposite direction.

A somewhat similar effect to the superimposed design shown in Figure 7 can be obtained by a single design in a higher ratio; thus such ratios as 5 to 3, or 7 to 3 (*i.e.*, a figure with eight or ten sides) will give a beautiful shaded effect, caused by the crossing and recrossing of one continuous line.

Space forbids to reproduce more of the exceedingly beautiful designs that can be obtained by a careful setting of the higher ratios.

The Harmonograph is a machine which can easily and rapidly

be erected at small cost; and with a little patience and study of the various ratios, weights, lengths, friction, etc., it opens up a very wide field to anyone interested in beautiful curves and shaded effects. As it is impossible to reproduce exactly any given design (except by photography) there is no monotony caused by the continued pursuit of fresh figures.

As previously stated the ratio of 3 to 1 gives the best results, but a very beautiful ratio, namely 5 to 3 can be obtained, by reducing the length of the main pendulum and increasing the length of the deflector; or conversely, by increasing the length of the main pendulum and reducing the length of the deflector a ratio such as 5 to 1 can be obtained. The simplest ratio of all is 2 to 1 (*i.e.* the octave); this also gives good results with the lengths of the pendulums such as that described above for the ratio of 5 to 3.

One word more as to the apparatus. The ink is usually made from an aniline dye and should be strong, deep in colour and quick drying. If a glass pen is used, the best results are obtainable from enamel cards, but with an ordinary pen the enamel is apt to clog the point. The writer has found that Bristol board cards give the best results. In this connection it may be stated that the diagrams shown in the accompanying pages have been done in waterproof ink manufactured by Messrs. A. W. Penrose & Company, Ltd., from whom, also, the Bristol cards were obtained.

The writer desires to acknowledge his great indebtedness to Mr. Joseph Goold, of Nottingham, who has for a number of years made the study of the " Twin Elliptic Pendulum " his life-work, and, who has on many occasions shown great kindness to him in many ways.

The object of this article is to suggest that the above designs might easily be used for commercial purposes, such as the borders of cheques, or name plates, or as the heading of various kinds of commercial paper.

Once a design has been executed it cannot be duplicated (except by photography), and the harmony and beauty of the figures would draw universal attention.

POSTER TABLOIDS

BY E. O. HOPPÉ, F.R.P.S.

THE poster stamp has come as an effective and dainty adjunct to advertising. It has arrived at the psychological moment when the British manufacturer seems to be willing and eager to break away from the well-worn, stereotyped methods employed by his father and grandfather.

Since the movement started on the Continent some eight or ten years ago it has rapidly conquered the field of pictorial advertising, and is now well on the way to become an institution.

It may be asked why England has not adopted the idea before, and why it had waited for the Continent to give the lead. But it is only fair to state that a number of English artists have repeatedly tried to popularise the poster stamp here a long time ago. The way of the pioneer is always slow, however, and it takes time to make innovations. But when the soundness of an idea has been tested and it is found to ring true, people know how to go forward with it.

One great factor in favour of the employment of this new vehicle for gaining publicity, is its extreme cheapness. Smaller firms who, for financial reasons, had hitherto to abstain from advertising, through the poster stamp can now well afford to enter the arena. There is no reason why the name of a firm which may be little known at the present moment should not become a household word the whole world over, through the issue of one of these little designs.











POSTER STAMPS.

There is great practical value in the poster stamp idea to the manufacturer, as well as to the buyer of goods. It helps to stimulate business on the one hand, and it tends to develop the artistic sense on the other. The one condition to success, however, lies in the employment of the best possible design. In this respect there is almost unlimited scope for individuality. The obvious and common-place should be rigorously avoided, otherwise the new movement will soon degenerate and sink to the level of the vulgar and banal. The *artistic* stamp makes an instant appeal and creates thereby the demand for the product it advertises, but the poorly executed stamp is merely wasted effort.

Artistic work of the highest order is required, and the advertiser has begun to see that it really pays to employ the best men he can get hold of. A few years ago he was prone to say that no one could afford to be artistic in business. Times have altered and the public will not now look twice at the advertisement that is common-place.

The poster stamp is universal in its appeal. It is used by manufacturers and merchants, communities and institutions, organizers of festivals and exhibitions, and authorities of sea-side and watering places. These little miniature posters are being affixed to envelopes, parcels, noteheadings and invoices, and distributed by the thousands amongst agents and retailers, employees and officials.

The principal condition for the successful and brilliant poster stamp is that it be decorative and simple, yet striking in design and conception, and bold and strong in colouring. Great ingenuity can be shown in the concentrated idea. The design should not be on too large a scale, the aim being to obtain as broad as possible an effect in a small compass. It will be found advisable to employ two or three colours only. Avoid thin and transparent washes, but rather work with masses of flat and opaque colour without attempt at shading of any sort.

It is necessary to pay the greatest attention to the lettering. This should form a vital part of the design and should certainly not be added as an afterthought. The wording must be short and precise. Do not lose sight of the important fact that it is

Poster Tabloids

intended to bring lucidly to the mind of the public the wares it advertises.

In countries such as Germany, Austria, Italy, America, France, Hungary, Denmark, Sweden, Holland and Switzerland the stamp in tabloid form has proved extraordinarily popular. The great commercial houses have their own individual stamp, or in many cases sets of Stamps. These are eagerly sought after by the numerous collectors, and each new issue is registered by two or three Societies, who have been founded for the special purpose of fostering the movement towards art in advertising, and to stimulate the public taste. They are in constant touch with the collectors, and arrange for the sale and exchange of the really artistic stamps in shops throughout the Continent.

The greatest credit is due to the Society of Poster Art in London, who were the first to take energetic measures in introducing the idea into this country. The writer is greatly indebted to the Society for placing at his disposal a number of artistic stamps which accompany these short notes.

In conclusion it may be urged that from the stand-point of utility as well as beauty, this new form of advertising should open a fresh and lucrative field for the English colour printer. I understand that two or three London firms have already begun to specialize in this work. Amongst them may be mentioned the Anglo Engraving Co., who have produced several designs of striking beauty for a number of leading English business houses.

A NEW METHOD OF MAKING COLOUR PRINTS

BY THE EDITOR

WE have had submitted for our inspection some interesting prints in colour, made by Mr. John Lewisohn, of New York, who has taken out an American patent for his process. The method starts from a blue print basis, and red and yellow colour washes are used to modify the blue effect and form the desired colour effects, which at the same time retain the fine shade values and relatively true and soft tones of the original blue print.

In carrying out the process a negative of a coloured object is made on an orthochromatic plate with a yellow screen. From such a negative an ordinary blue print is made, this showing up the different shade values in their proper proportions. This blue print is then coloured either wholly or in part with dye or paint, but preferably by applying eosin for the red and aurantia for the yellow, or a mixture of the two to modify the blue to form any of the spectrum colours. The blue colour shows through the applied washes with more or less intensity depending upon the extent of the coating wash. Should it be desired to make all or any material portion of the print either red or yellow, or any other colour in which blue is not used the blue of the blue print is either wholly or partially dissolved by a weak solution of nitrate of silver, which will fix the colours, and at the same time will gradually bleach the

blue. Further, the blue print may be washed with this solution if it is desired to merely weaken the blue colour of the object, after the eosin or aurantia has been applied. Should it be desired to restore the blue locally or entirely, or to darken the blue colour, the blue print is respectively touched up or bathed with a solution of ferric chloride, and this may be applied in stronger solution or in succession until that part of the object is practically black. Instead of painting or bathing the entire print in any one of these colours certain specks may be touched up locally, in order to darken or lighten those particular parts. In addition to this local treatment the entire print may be submerged in either of these primary colours, or any combination of same to give the different colour background and a different tint to each picture.

It will be gathered from the above description which is taken from the patent specification, that the process is an extremely simple one, well within the means and reach of any amateur photographer. The results we have seen are very effective, the prints comprising a flower subject, a sea-scape, and a reproduction of a piece of coloured plaid cloth. We should have liked to reproduce one of these examples in this volume, but at the time the prints were submitted our preparations were too far advanced. We shall be pleased to put any of our readers in communication with the inventor













DESIGNS BY HOWARD McCORMICK.

See Article "An Artist in Wood," by Amos Stote.

AN ARTIST IN WOOD

BY AMOS STOTE

IF you are the fortunate possessor of a copy of Volume I. number one, of "The Studio" you have no doubt repeatedly admired some wonderful reproductions it contains of certain line drawings, by one Aubrey Beardsley to whom the then youthful artist-writer, Joseph Pennell, refers as a new illustrator.

This article by Mr. Pennell contains much that is of peculiar interest to me. The fact that he stoutly vindicates his purpose to give prominence to the artistic creations of a man who had not then proved his stability and whose slender portfolio, while it contained works of undoubted genius, might never offer anything more virile than those drawings which were then being praised, gives us a romantic chapter in the romantic life of the wonderful Beardsley. Yet it is not this contention which holds the greatest interest, but one which I feel sure the Pennell of later years has come to consider a mistaken statement.

Mr. Pennell, in praising the marvellous richness displayed in the pen line of Beardsley, writes to the effect that when such quality may be obtained with the pen wood engraving, as an art, is replaced. That such a belief became most generally prevalent among workers in the graphic art is proved by the fact that wood engraving was soon relegated to the minor position of reproducing only such commercial products as the camera had not then been able to define with sufficient accuracy to ensure a clear reproduction.

Because of this belief the presses of the World denied them-

selves one of the most classic and literary forms of decoration and illustration possible to the beautifying of the printed page, as well as the production of more pretentious works created for their individual pictorial value.

Now that wood engraving is again coming into its own, and more happily, because of the intelligent appreciation with which it is received, it is fitting that we know something of the beliefs of the artist who has done so much for this work in the States. When I asked Mr. Howard McCormick to explain why his striving to put wood engraving into the preferred lists of the art reproductive has met with so gratifying recognition, and to tell why the wood engraving print must ever carry a richer quality than that which may be found in the proof of the reproduced line drawing, he replied :—

" In the first place, the drawing cut in the wood is now being considered as never before, because the sincere printer and his client are both looking for a finer quality in the product of the press. Consequently they have acquired a more technical appreciation of the colourful beauty of this medium.

" And in the second place, they have discovered that, however cleverly the line drawing may be executed to simulate the wood cut, it can not only never deceive the expert, but it also can never bring the same visual pleasure to even the reasonably intelligent, who, though they may not be able to define their feelings or describe the differences, nevertheless feel the lack of rich atmosphere in the line block when compared with the wood block proof.

" The reason for this is as easy of comprehension as it is of explanation, because the fundamental principles controlling the production of the two blocks are radically different. The black line shown in the reproduced pen drawing is the line which was made by the artist with his pen, while the black line shown in the print pulled from the wood engraving is the line which, in a sense, was not made by the engraver, for it is the line around which his efforts were employed. This may be even more clearly expressed by saying that what you make with the pen is seen, while that which you make with the graver is not seen.

" Of course the keen critic will at once say : ' The line made by the graver is the line which makes the beauty and life of the wood cut.' This is most assuredly true when we consider the impression which would be produced by uncut wood, or the solid black print without design or composition. From this we come logically to a consideration of the white line, or the portions of the block which the engraver has cut away in the task of creating his decoration.

" In saying that the white line is the portion of the wood cut which is not seen I am merely taking the customary view point assumed in connection with every phase of graphic art reproduction. Type offers us the most perfect example of the meaning of this saying. We think of the legibility of type purely from the stand-point of the formation of the characters of the alphabet, but no one denies the value of the contrasting surface offered by the paper on which the type is printed. No one would think of printing black type impressions on black paper ; and so, what might here be termed the *white line*, enters in to both the legibility and beauty of the printed page."

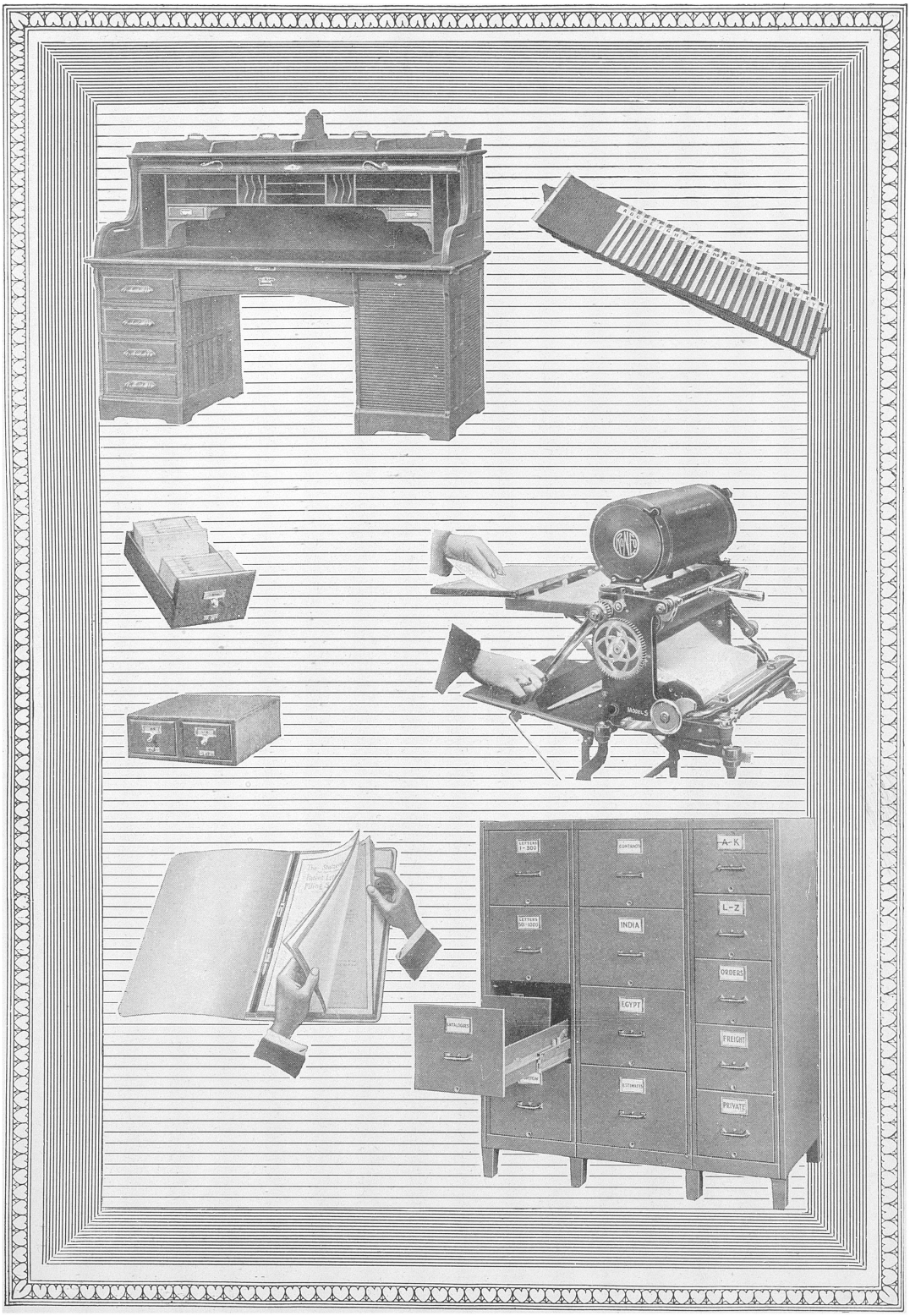
It is this subtle devotion to the white line which has made the art of Howard McCormick so potential a factor in the revival of wood engraving in America. The very edges of the black line left by the graver in his hands have a delicacy of texture impossible of attainment with the pen ; and with such understanding does he secure the attractive value of the white line that if we would feel the whole charm the woodcut holds we must consciously study the lively values of the unprinted spaces which separate and delineate the various portions of the printing surfaces of his blocks. While in the pen drawing the delicacy or thickness of the pen line attracts us, in the McCormick-cut blocks the wonderful gradation of whites are beautiful in themselves. The truth of this is emphasized when we consider what the result would be if the pen drawing was reversed and the white spaces were made to print. In the majority of instances the result would be practically unintelligible, certainly unbeautiful ; while with a McCormick woodcut the same trial would result in the production of a decoration quite as beautiful and almost as clear in definition—for the original white lines are

as truly his creation as are the black lines of the pen drawing the creation of the artist making them.

Just why Howard McCormick has been able to do so much for the return of wood engraving as a really fine, though graphic, art may be attributed to the fact that he is also a master of illustration in practically every medium. The colour he has been able to put into the four colour wood blocks he has cut for the printing of magazine covers was learned from the palette and the canvas. Also he first discovered the fascination we all find in the very odour of printing ink when making pen drawings, as a boy, for an Indiana newspaper. And now, when the visitor gains access to his studio, the question arises whether this artist is a mural painter, illustrator in the more conventional mediums, or an engraver on wood. He will tell you his joy in each keeps them distinct, while making them one in harmony of occupation, for they produce a rhythmic division of labour.



Block and Design by L. C. C. School of Photo-Engraving and Lithography.



A. E. Dent & Co., Ltd.

MODERN OFFICE EQUIPMENT.

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SYSTEMS OF FILING

BY J. P. VINALL

Editor "Organisation" *

THE filing of correspondence and other documents receives to-day much more attention than in former times. There is almost as much difference between the old horse-drawn omnibus and the present-day motor-omnibus as between the old pigeon-hole system and the modern horizontal and vertical methods of filing.

Time is money, and business men cannot afford to lose precious moments in searching for this or that letter or document. It is, therefore, not surprising to find that most city offices have what is called a "filing department," and the juniors in the establishment, after they leave school, have to serve some form of apprenticeship or probation in the filing department prior to doing superior, while perhaps *not* more important work.

There should be as far as possible someone in charge of the filing department who will see that whatever system is adopted is worked properly. It is frequently not the fault of the system but laxity in the carrying out of the methods which leads to condemnation of some systems in vogue, and it is not the purpose of this article to applaud one system over that of another, but only to indicate some of the merits in each and leave the reader to judge for himself of that which will most closely meet his needs.

First and foremost, it is necessary to determine under what

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Systems of Filing

heading documents should be filed. Secondly, the importance of being able to place one's hand quickly upon the papers required. Thirdly, storage.

It is general knowledge that the pigeon hole system is dead and cannot be recommended. The time taken in folding over letters, marking them outside, placing them in the pigeon-hole, untying and re-tying red tape is most unsatisfactory, while invariably the pigeon-holes become receptacles for dust.

In connection therewith it has only to be mentioned that roll top desks fitted with pigeon-holes are frequently discarded because of this objectionable accumulation of dust in the pigeon-holes, so that makers of furniture have avoided as far as possible having these fitments in modern desks and instead have introduced wide spaces to take a flat file.

THE VERTICAL FILING SYSTEM.—The fundamental idea is to bring together in one folder all letters to and from each correspondent or referring to any given subject. To do this copies of out-going letters are taken either by the carbon process or by a rotary copier. Each copy is placed next the letter it answers, and the papers should be filed in chronological order. Folders are filed vertically in the cabinet drawer, so that any folder may be taken out and put back readily. In connection with this system there is Numeric Filing involving the numbering of the files "1" upwards, and the keeping of a card index. This is quite simple and self-explanatory. In filing vertically, however, the wad of papers lies at the bottom of the file and so there is a considerable waste of space, while when the folders have a number of papers inside them, the drawer itself presents a somewhat untidy appearance incidental to the irregular height of folder tops. The difficulty is somewhat overcome by the use of "Compensator" Guides. Mention should be made, too, of some elaborate forms of tabbing both folders and guides, subdividing the correspondence in a number of different ways called the "Direct Name," the "Alphabetical-numerical" System as well as the "Numerical" referred to. A feature which should be mentioned in favour of the numeric filing system is cross-referencing, and the readiness with which a number of cards may be made dealing with more than one name

or subject. Irrespective of what filing system may be used, the writer of this article advocates that the value of the card index should be considered and the card index used in some form or another in every office.

THE HORIZONTAL FILING SYSTEM.—This undoubtedly has come to stay. It is the more natural way to file papers. Everything, however, depends upon the method of usage. A good system should be thoroughly investigated, and there is one which the writer has in mind which is in every way a well-devised plan of filing, meeting the requirements of any business. Of importance, and great importance—for this point should be emphasised—is the security of bind. Papers which are placed inside the folder or file should, in some way or other, be firmly attached or gripped so that there is no possibility of a paper being extracted and lost. It is not wise to allow loose papers to float about an office. All papers should be filed when done with on the individual file referring to the name or subject, and when reference is wanted the whole file should be borrowed and the history of transactions seen at a glance.

In this system a few of the labour-saving devices—aids to work—are the following :—

Primarily, the binder.—All papers are perforated, placed over metal tongues, which are then bent outwards over a metal bar with shoe catches, which firmly grip the papers as strongly as when bound by a book-binder.

Secondly, the lifter.—This is a small steel with two prongs which fit into the holes perforated and slide side by side down the prongs, thus enabling any paper or document to be quickly and easily removed, and re-filed.

CLASSIFICATION.—This is done by means of having files in various colours. They are broken up into small alphabetical divisions in the cabinets and the colour sub-divides in such a way that the hand at once can be placed on the file required.

STORAGE.—This is obtained by means of having standardized drawers fitted with trays, and considerable thought has been given to making suitable drawers or trays on the building-up principle. Full files are simply put in cupboard cabinets in numerical order.

"MISCELLANEOUS" OR "SUNDRIES" CORRESPONDENCE.—By the system, this can be dealt with at once easily and cheaply, for one file will hold 300 or more papers, and by having an index in the front of the file the "sundries" correspondence is split up finally.

The accessories of the system include the perforator and lifter already mentioned, also gummed slips and such useful office equipment as a Ready Sorter, Reminder Book, "Matters in Suspense" Files; all to be had ready-made and at a moment's notice.

The question of indexing is one in itself and no attempt in this article is made at explaining various methods, but any Filing Firm (a list can be obtained from any directory) will supply full descriptive literature.

In conclusion it is again stated that the trouble with many filing systems, is frequently not in their working, but owing to not faithfully carrying out suggestions made. Intricacies, as far as possible, should be avoided and a straight-forward system adopted, such that a youth or girl who has just left school can grasp it in a very short time.

The blocks to illustrate this article were made by Messrs. A. E. Dent & Co., Ltd.

THE PRINTING CONSULTANT

BY OLIVER A. MINNS, F.I.S.A.C.

Vice-President of
The Incorporated Society of Advertisement Consultants, London.

YOU probably know the story of the Consulting Engineer who was called in to advise on a boiler defect, which the owner's mechanic had failed to locate. When the account came in it was duly queried by the wise heads in the Counting House and referred back to the famous one. In course of post came the itemized debit note :—

To Time spent in locating defect in Boiler and replacing broken Bolt, 10 minutes ...	... £0 10 0
To Knowing How...	... 10 0 0
Total ...	£10 10 0

—And the judge gave a verdict in favour of the plaintiff.

Moral: It is good policy to pay the expert to help one out of troubles which the ordinary honest journeyman cannot fathom quite so quickly or so effectively.

Your busy brain cannot give to the planning of a booklet, or other piece of business literature intended to separate the reader from his hard-earned coin, that creative attention you should devote to it—in your own interest as in the customer's.

You just grab the handiest paper-maker's specimen book, tell Charlie to 'phone up the stockroom for the nearest that can be found to match your hastily-conceived suggestion, pass it on to the estimating clerk to figure out in such and such a size, initial the quotation and then—wonder why the order hasn't come your way, and go on determining that some poor fool of a price-cutter will lose on the job.

Scotch farmers are reputed to till their land, and great artists to mix their colours, with " brains." There is a mighty lot of printing going to waste because there's no " brains " either in the get-up, the text, the illustrations or the production.

You will retort—" Competition is against us." Of course it is if you think so. But why not leave " competition " out of it? Why not ignore it and do something better? Learn to look on printing as advertising matter that brings results and teach your customer to treat it just as he does his newspaper announcements. Then you will feel justified in getting a good price for a job well done and the advertiser will feel content to pay a better price for fair returns. Thus both parties will gain instead of filling the " W.P.B."

In most cases a keen buyer, anxious for results, is ready to appreciate brainy suggestions and willing to pay well for a better article—when he is shown why! Rough outline schemes for " copy," illustrations and layout will appeal to such a man immediately.

I remember an instance in which tenders were called for a large catalogue from six printers. The " A.C." was not in control of the field there and so prices ranged fearfully from high to low, clearly showing that some estimating fellows had fouled figures in costing. The traveller from a middle-price firm happened to call in at the critical moment of decision, offered some concessions and was given the order on his own specification, but at the lowest price quoted by a competing house.

His principals began to wobble; didn't care to let the order go past and yet could not see how they were to deliver without suffering a heavy loss.

A " live wire " of an inside man—the " expert " let us call him — was appealed to, and he at once begged to be allowed to interview the customer.

Result : At the end of two hours he returned with the firm order for two-thirds the quantity, twenty-four more pages, all on better quality stock, text to be edited, displayed lines and " pulling " phrases added, blocks and illustrations improved—at a total price of 50 per cent. more than his firm's original quote for the job !

It was a case of the expert's " knowing how " to put it to the customer ; how to edit the contents and sell the job on merit ; brains had been used in handling the whole scheme, showing the customer what he needed, but didn't know it, to get the results.

Does it not follow from this that the way out is to use the consultant — the publicity expert — the specialist, just as a local practitioner confers with a physician and calls him in for consultation on almost every case out of the ordinary ? So you would only be following a very good precedent by doing likewise.

You cannot be expected to know the ins and outs of the plan behind the copy—the golden thread running through the scheme of an extensive advertising campaign. How then can you reasonably be expected to submit the most suitable format of printed matter you are asked to tender for ? The same difficulty applies to almost every job beyond a simple leaflet. Even a folder requires care in planning and consideration in producing. The lay-out, colour scheme, size, type faces to be used and style to be followed—everything in fact connected with almost every individual piece of printing has to be thought out—brains, experience, ability to phrase and display, all are needed to do justice to all concerned. Yet in very few printeries is the job worth handling given more than scant consideration where initiative and ingenuity, originality and " brains " are demanded. " Any old thing will do "—" Let her go at that," and such epithets will no longer suffice if you want to be in front of the procession.

The Printing Consultant

The way in which badly prepared " copy " used to be thrust into a printing traveller's hands by a prospective buyer with a brusque request to " make the best job you can of it as cheaply as possible " is fortunately being rapidly superseded. Some of the larger printing firms now have men specially engaged to assist their clients in writing-up and designing, but for the smaller firms such a man would appear to be a fairly heavy additional expense.

My suggestion is that you would be well advised to arrange to " retain " the partial services of an Advertising Consultant—at a commensurate fee according to the amount of his time which you might reasonably expect to occupy. Then you would feel that the brain-racking parts of the planning could be safely left to the expert. More than one well-known house by offering the services of such a man to co-operate with their clients has found it pay over and over again.

There is a select number of such specialists—members of the Incorporated Society of Advertisement Consultants, to wit—who have qualified by many years of service in publicity, and trained in every branch of printing and reproductive work. By reason of their wide experience in planning lay-outs, dummies, " copy," designs, etc., for a variety of different classes of business, almost any one of them could quickly advise you as to the most suitable format and scheme for any particular purpose.

By a judicious arrangement your own business could be considerably extended, as such a man would plan an inexpensive campaign to ensure results for you by the offer of his services in such a way as to give prospective (and present) clients the impression that they were invited to deal with a printer of advanced ideas who realized that they—the buyers—required something more than mere paper, ink and machining, and that you were equipped to furnish the " brains " to aid them in getting results.

The fees paid to such a man could be debited to overhead charges, so that the amount would figure as a very small per-

centage on each job, or even relatively to turnover. By including his " costs " in this way, instead of as a specific item on each particular job he handled, you would feel free to get more out of him for the promotion of your own business. He could also make many suggestions which, if submitted to clients in a judicious manner, would induce them to spend more with you, especially as they would realize that they were being relieved of the difficulty of originating and scheming out the details. You would take the burden off their shoulders and many a firm would gladly spend more on printing and advertising if they had someone doing the thinking for them.

The results would follow in scientific ratio to the outlay—provided you engaged the right man—both for your customers' and your own business. What you pay your Consultant would be saved in several ways in carrying out a job, as he would lay-out and plan the arrangement of clients' copy so as to considerably reduce composition and proofing costs, as well as in designing the general get-up of the most suitable production for the purpose. My space is exhausted or I could give several illustrations, but you will easily visualize my meaning.

Think it over — then ACT !

COLLOTYPE FOR COLOUR

BY S. G. YERBURY

WHEN a film of bichromated gelatine is dried on plate glass, exposed under a negative and plunged into water, the bichromate washes out and the film reticulates into a fine, almost invisible, worm-like grain.

Later on, when the plate goes on the printing machine, the rollers ink up the hardened shadows and the moistened high-lights in exact correspondence with the negative; in fact, I know of no process, chemical or mechanical, which will give so fine a rendering of an ordinary photographic negative as a perfect collotype print.

One would have thought that a process so simple and capable of so much would have risen to the front rank, whereas, unfortunately, it is a veritable Cinderella among processes.

Firstly, as a German product, its introduction into this country was badly managed. Platemakers were brought over to teach our men, but they seemed to prefer German printers for their plates, and would have us infer that collotype plates understood the German language somehow, and would respond to no other.

Then the blame for bad work was laid on the already overburdened shoulders of our climate, and the myth is religiously believed to this day, and if you ask any stationer why his collotype post-cards come from Germany he will tell you it is due to the superiority of their climate.

The only real objection to the process is a slight lack of uniformity. Each time the paper comes in contact with the plate and an impression is taken, the paper takes also a small

amount of moisture out of the high-lights of the picture, so that no two prints are absolutely alike.

No perceptible difference may appear for twenty or thirty prints, but eventually the printer has to stop the machine, clean the plate up, re-moisten and go on.

In the hands of a good printer this variation will be very slight, but it has been enough to bring the process down till it is one of the least used at the present day.

The atmospheric conditions now receive proper attention and it is found that at a temperature of 60° F. and a normal moisture, *viz.*, 65 per cent., the plates print with only the faintest variation, and attempts have been made to use some sort of mechanical moistener.

It is pre-eminently true of the process world that nothing stands still, and recent experiments have shown that by means of a flexible collotype film, the image with all its fine gradations can be completely transferred to a fine grain litho stone, and by that means the speed and uniformity of lithography can be added to the beauty of collotype.

As soon as the most suitable flexible material has been ascertained it will become an everyday commercial practice.

In quite another direction the process is only waiting to be utilized, and is a good example of the proverb, that a dog with bad name might as well be hung.

Repeated photographic exhibitions have shown that no variety of coloured or dyed film processes can equal in beauty a collotype colour photograph. Yet no professional photographer has seriously set to work to acquire the necessary manipulative skill.

The fact is the present-day photographer has become a mere tradesman, a finisher-off of the products of the plate and paper-maker, and lacks the real craftsmanship of the old wet plate men of forty years ago.

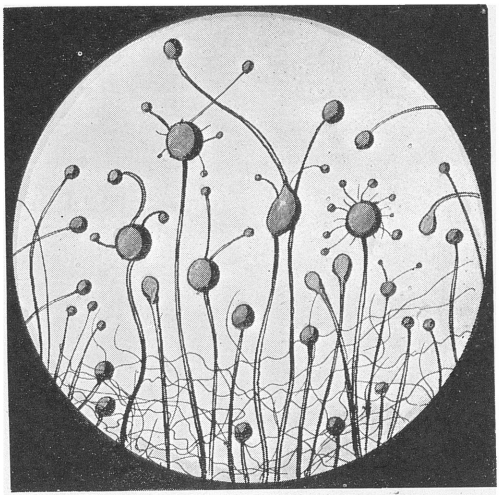
There is abundance of material ready to his hand, correct filters for abstracting the colours, either direct from nature or from autochrome or Paget transparencies, correct complementary printing inks, ready coated collotype plates, small handy bed-plates with lay pins registering to a hair, papers of various

grades to give charming variety; all can be easily obtained, but it really seems as though the prospect of having to acquire skill with his hands and become once more a craftsman is more than he cares to face.

Anyone who set about making these collotype colour photographs would obtain, I am sure, so much of partial success right away that he would determine to go on till his work was good. In itself the work is interesting, almost fascinating, and now we can produce colour photographs on glass, the demand for them on paper is so insistent that the price he should obtain for his prints would amply repay him.



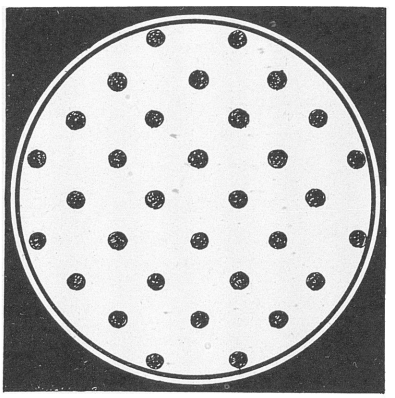
Block and Design by L. C. C. School of Photo-Engraving and Lithography.



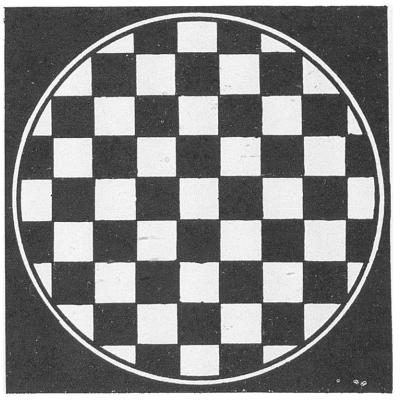
HALF-TONES THROUGH THE MICROSCOPE.

See Article by James Scott.

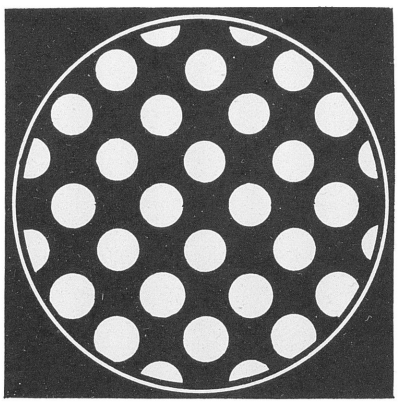
No. 1.—The circle is a magnified pin-hole, showing a common mould or micro-fungus.



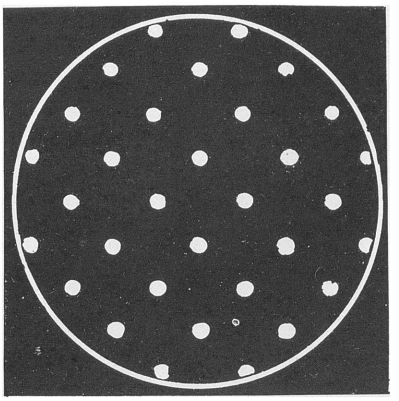
No. 2.—The circle is a pinhole view, greatly magnified, of a very faint shade in half-tone reproduction.



No. 3.—The circle is a magnified pinhole view of a medium shade in half-tone reproduction.



No. 4.—The circle depicts a space equal to a pinhole, showing a view of a dark shade of a half-tone reproduction.



No. 5.—The circle shows the appearance through a greatly magnified pinhole, of a black shade in half-tone reproduction.

HALF-TONES THROUGH THE MICROSCOPE

Written and Illustrated by JAMES SCOTT

ALTHOUGH the reader is naturally familiar with the details of half-tone work, it is none the less the fact that the process is a wonderful one. Its striking phases are brought very effectively before the observer who uses a lens wherewith to examine a fine reproduction of either a photograph or wash drawing. In such a case, the regularity and symmetry of the dots composing the illustration are very conspicuously revealed. But when the strong compound microscope is substituted for other magnifiers, the disclosures are extremely attractive, in a technical sense, and bring home to us the real minuteness of the various features which make up the lights and shades.

The structures of the many screens used for the purpose of reproducing illustrations in half-tone are too well known to need any description in this article; but the reader may be briefly reminded that the commonest range of patterns have crossed parallel lines ruled diagonally at distances apart from one another which vary from *comparatively* narrow to wide ones, although such differences do not appeal so forcibly to the naked eye as might be expected.

It is quite a recognised truism among microscopists that although in normal conditions—that is, when viewed in the usual way—many small objects resemble one another very closely, they show, when they are respectively magnified to sufficiently large proportions, very great contrasts in actual dimensions. We take, say, a pinch of arrowroot starch and another of rice starch. Now, both of these substances, when in the dried and crushed form, look much the same as one another, and would simply

be regarded as *equally* fine white powders, whether casually looked at or carefully fingered. Yet the plain truth is that each of the grains of arrowroot starch—they are somewhat oval in shape— is *many hundreds* of times larger than a grain of rice starch, which is angular.

It is the same with reproductions done in half-tone. We may have before us a set of several pictures, all of which are neat and nice on the same style of art paper, there being very little to choose between them all. When, however, they are magnified under the compound microscope (the most powerful instrument it is possible to procure) one after another the level of merit vanishes, and there appear a series of disclosures ranging from coarse to fine, or *vice versa*, according to the procedure of viewing. A thorough study of these disclosures would account for the different effects produced by apparently similar blocks on *various* kinds of paper.

I am well aware that it will require some effort on the reader's part to realize the extent to which the illustrations *of an illustration* have been drawn; but let him imagine that each circle is reduced to the dimensions of a pinhole—say, a pinhole of about one-twenty-fifth of an inch ($\frac{1}{25}$ inch) in diameter—and he will at least understand what an amount of detail has been crammed by some of his fellow workers—and is regularly crammed by himself—into that minute amount of space.

Let him persuade a friend to hold the designs upright in front of himself, and recede backwards for a distance of several yards. Onlookers will observe the circles getting smaller and smaller, meantime the series of dots becoming less obvious, and the spaces assuming an appearance of uniformity. This experiment will possess its weaknesses, of course, but the trouble taken in it will be repaid.

When an object is magnified, it is not actually enlarged—that would be an utter impossibility. What happens is that, by the law of optics, we bring it nearer to the eye by means of the systematical arrangement of lenses. The head of a pin held an inch or so behind a pinhole made through a piece of cardboard, the latter being held close up to the eye, appears for the same reason quite huge.

The half-tone engraver is used to my work, since I have done several thousands of original black and white and wash drawings in connection with microscopical, natural history and scientific subjects, for several years. It will, therefore, be appropriate for me to show him just how his own efforts appear when they are magnified. Certainly he has been a friend to the artist by reproducing the latter's work so faithfully.

In magnifying the general surface of half-tone reproductions it is always advisable to avoid setting forth details which might injure—even if only temporarily—the eyes. If photos of such details are taken within certain limits we see patches of black dots on white spaces; or white dots on black spaces, which can only be inspected for a second or two on account of their dazzling results. The observer has to turn away, perhaps disappointed, because the strain on vision is too much to be borne. Yet the degree of magnification may not be really very great, nor the details so informative as they might have been.

When, however, the use of the compound microscope is adopted, we obtain genuinely effective revelations which give one a real idea of the importance of half-tone work.

I give in No. 1 an original illustration of a magnified fungus which grows over various decayed substances. The whole amount depicted would be practically invisible to the naked eye. A curious fact concerning this species is that the little globes meet, fuse their contents together, and the seeds (spores) which subsequently mature in the combined cases represent the fertilized product of " male " and " female " parts. Upon magnifying any of the paler tones of this illustration it appears as shown in No. 2, the dots being apparently far apart. In the deeper—or medium—tones the dots are square, and united corner to corner as in No. 3. Intermediate between these shades comes that in which the dots are larger than those in No. 2, but not up to the size of the contents of No. 3. In the black patches the squares have so far overlapped—or run out—as to cause the development of white dots, the sizes of which are diminished according to the amount of blackness. Nos. 4 and 5 will make these matters clear. In No. 4 the positions of the black squares may be noted. Their corners having been

regularly extended, white circles result. The reader will understand that as there are about thirty-two square white, or black, spaces across illustration No. 3, and as the original diameter of the circle was $\frac{1}{25}$ inch, there must have been a great number of lines up and across every superficial inch of the screen.

The reader is no doubt aware that when a photograph or drawing is being reproduced on to a negative with the screen intervening, the sizes of the dots and the texture—*i.e.*, whether black or white, round or square—depend on the amount of light which passes through each space on the screen. Faint light passing through causes the appearance of a mere round spot in the negative, because there is not enough to penetrate through the whole of the square. A further quantity of light, however, increases the sizes of the spots, but they are still round. When the amount of light is equal to the accommodation provided, a set of square dots, touching each other at the corners, is provided, corresponding with the clear openings through the screen. By increasing the quantity the slender light beams overlap after passing through the screen, with the result that the spots overlap, and cause the appearance of black patches covered with white spots. The stronger the light the smaller the spot.

It should be borne in mind that the whites in the negative become blacks on the sensitized surface of the zinc or copper plate, while the blacks become whites.

Reverting to the peculiar fact that light passing through the clear spaces in a screen imprints a circular spot on the negative, it may be pointed out that somewhat similar effects are often produced when the sunshine passes between the leaves of a tree, and is cast on to a pavement, or even ground. Grassy soil hinders the phenomenon from displaying properly. One can see several bright *circular* spots, yet the interstices between the overlapping leaves, which enable the light to go through, are not by any means regular or symmetrical. By holding a large, stiff sheet of cardboard at various distances beneath the foliage on a sunny day, the half-tone worker would learn a lot of valuable information applicable to his processes.

PHOTOGRAPHIC KEY PLATES FOR OFFSET PRINTING

BY BURMAN NORTON

AN improvement in making the indispensable key plate by a photographic process, which has the advantage of retaining the drawing, and ensures that the ultimate reproduction will have the feeling and individuality of the artist's coloured sketch, will be of interest and utility to readers of the "Process Year Book." My contribution is a practical method of getting a monochrome printing plate in relatively correct analysis of the black gradation by the elimination of all spectral reflected light from the coloured original, on the principle of the scientific fact of light transmission and absorption by the three-colour standard filters.

By this method the black is dissected relatively from the reflected colour of the original transmitted by the filters. This means that by exposing with the three-colour filters on a backed panchromatic plate, which is sensitive to all colours of the spectrum, *we fill each gap of the filter absorption with the complementary colour in turn*, which naturally leaves a true record of the black in perfect gradation, owing to the panchromatic plate being insensitive to black, and sensitive to all spectral reflected coloured light. On development we now have a black key negative, not faked up by hand in any way, but made by absorption and transmission of coloured light. By this procedure it is possible to get the most perfect key plates for the offset press, which will give a fac-simile reproduction of the

original if the colours have been drawn in true relative strength so as to assert their values through the key, and if the litho. colours are anything like correct the fidelity of the reproduction will be very close to the sketch on first proofing.

There are methods by which tones may be lightened on the aluminium plate, *viz.*, placing the plate under water and brushing with a hog-hair brush the way of the screen, but the inked print on metal must be under water the whole time. As an alternative method, have the key printed in a broken black, the colour of which must be determined by the general effect of the sketch. This latter method is the safest, as the key is practically correct in gradation; the former method is apt to show badly the alterations if this gradation of tone is interfered with. It is better to try what can be done with the modifications in printing the key in a colour, the density of same being suitable to the drawn colours.

Where there may possibly be too much black on the colours, this degradation would be on the greens and deep purples, owing to the poor reflective power of these colours; the corresponding densities in the negative can be retouched. There is a patented process for bringing up these colours to a high light. I should be pleased to give the patentee's address to those interested. Briefly described, this latter process concentrates the light, from an independent lamp, on the non-reflective colours automatically, and brings them up to high light on the negative, also having other advantages, which a process house making a speciality of colour-work would find useful and efficient for enabling the operators to get any particular result wanted, which would not be possible by any other means.

This method of eliminating all colour with the filters is also a great saving of time in the four-colour etching process, owing to the gradation being correct. It will make the fine etching more expeditious, as the former practice was to use one of the primary printing plates, usually the blue printing colour, at the correct screen angle for the black printer. This plate was then etched and faked up to represent the black, and it depended upon the etcher entirely if the ultimate finished proof was a good reproduction of the original. This means

that a lot of time had to be expended, and the result will never be as smooth as a plate correct in gradation at the start, having all the colours eliminated by the filters.

The procedure of making this monochrome negative I will explain as clearly as possible, giving detailed data of an exposure. The first consideration is that of the lens. This must be a modern anastigmat corrected for colour, so as to ensure the three exposures through the relative colour filters on the one plate falling in exact register. Assuming your lens will give you a negative with all three filters in perfect register, which on development will be perfectly sharp, showing no overlapping, you will know that you have a good lens corrected for colour. We require next a panchromatic plate, which must be backed. The colour filters most suitable to use are the squares of stained gelatine, colour standard filters made by Wratten & Wainwright. These stained films are used in a split stop, inserted in lens diaphragm. Why I recommend these gelatine filters is, that the errors of refraction are altogether eliminated. If the ordinary glass filters were used, there is always this possibility of error due to refraction, owing to the introduction of other glass, and you are sure to get this error with some lenses, even if optical flat filters are used. There is another danger of getting a doubled image, unless great care is exercised when changing over the filter, or in capping the lens on completion of each exposure. See that all is rigid, and lens fittings, etc., tightened up.

Having got your coloured original pinned up, with the chart, the latter being a guide to show the correctness of exposure, etc., you can proceed with the exposure.

I give the data of an exposure for the black from an oil painting, size for size. A pair ½ watt Osram lamps, 1,000 c.p. distance from centre of original 2 ft. 9 in., angle 60.

	Stop.	Time.	Light allowed.	Light transmitted.
Red Filter.....	F32	50 seconds	Blue.	644 to 590μ
Green „	F32	2 minutes	Red.	600 to 480μ
Violet „	F32	40 seconds	Yellow	490 to 360μ

Ilford Panchromatic Plate *backed*. Development, Rodinal, 1 oz. in 40 ozs. water; time from 60-15 minutes. To get best result it is not necessary to keep to the exact ratio; if green predominates in the original you naturally wish to transmit as much as possible of that colour; therefore you give an exposure with the green filter as long as possible, bearing in mind that you have two more exposures to make, *viz.*, with the red filter and the violet on the same plate, and if you gave too much with the green filter there would be no time left for the other two exposures, which would mean over-exposure. Some originals would necessitate the use of only two filters to get the desired result. Say the sketch was composed of yellow greys and greenish middle tones with a general warm colour effect, the red and green filters would transmit all that would be required. It would depend upon what colours are wanted to be transmitted, and experience with this method will soon demonstrate its possibilities and advantages to operators engaged in making lithographic key plates on aluminium or zinc for the offset lithographic press.

LITHOGRAPHY AND THE WORLD'S GREATEST WAR

BY JOSEPH GOODMAN

Hon. Silver and Bronze Medallist in Lithography and Photo-Mechanical Processes

Author of "Practical Modern Metalithography," etc.

LOOKING backwards over the latter part of the last century—in conjunction with the whole period of the present one—in a general survey of lithography; we are forcibly reminded of the vast progressive strides made by this art-craft, due to the various mechanical constructional triumphs, and technical craft developments, which have, during that tranquil period, been successfully imported into its realms.

All these previous advances moreover, have been of a *creative* and internally recuperative nature; ultimately becoming soundly and firmly established for the interests and advantage of the whole craft.

Such was the case when the use of the cumbrous litho.-stone was supplanted by the more pliant, economic, and accommodating *zinc* and *aluminium plates*, efficiently serving as the actual printing surface medium of the craft.

Again, when the "Rubber Offset" method of transfer printing replaced that of the original, *direct*, harsh method hitherto in vogue.

And still again when the trade utilized and adopted the speedy, automatic "Photo-Mechanical" processes and devices for its permanent welfare. These then all contributed to enhancing the value and potency of lithography as the most perfect colour art-craft of printerdom.

Now, however, a temporary change has ensued, as, for the first time within the living history of the craft it is being subjected to a violent shock, and unprecedented retarding influence from without.

On this occasion it is a *destructive* agent, and not a "creative" one that disturbs it—the World's Empire War. A colossal war that will kill war. Its immediate influence may be said to have partially and temporarily devitalized the major portion of lithography's living essentials,—the human element—by the implied devastation inflicted upon so large a mass of its trained and experienced units as what this conscript war has involved, thus depriving it of much of that technical resource so intrinsically essential to its general welfare.

What this may mean in the long run, and the ultimate advantages that are likely to accrue to the peculiarly favoured English lithographic industry, can be well surmised from a brief examination of the actual facts, as at present operating.

Let us first of all consider the effect as produced by that suicidal martial policy of promiscuous compulsory service, which virtually enforces every lithographic worker—in conjunction with all other workers capable of bearing arms—to perforce desert his peaceful vocation, which is thus left bereft of working facilities, to become a possible victim of war, so that in one moment a lifetime's craft training is destroyed and irrevocably lost to the useful domains of production. In Germany there are 8,068 litho. printers and 3,494 litho. artists.

How many thousands of these compulsory warriors of lithography will ever again return to the workshop of the German fatherland?

What an irretrievable loss to that nation in her campaign for the world's commerce!

Now what is here true in respect to this decimation of Prussia's industrial artisans, applies with equal force also to her ally, Austria-Hungary, and latterly to Turkey; and from the same military reasons, is also unfortunately applicable to our own ally, France; and in a limited measure to Belgium and Servia also; and likewise to our huge Eastern ally, Russia.

Assuredly never before in the whole career of lithography has its *personnel* of the trade been subjected to such a tremendously calamitous and annihilating influence as that which now thus assails it on the Continent of Western Europe.

The only redeeming feature from which we can derive any consolation—and that is, unfortunately, a selfish one—is that the military exigencies of this country, and the indigenous nature of our coast-girt island home, has spared us lithography in a specially-favoured manner which none other of the belligerent powers can lay claim to.

Yet Germany was the birthplace of lithography, and has always striven to maintain her lead ever since. I have myself worked in Germany to acquire experience and study her methods, and have thus seen how well she succeeds with her high-class work, and her mammoth sheets of composite chromos, as well as the smaller chromo-litho. art productions which are garnished with spangle, snow powder, flock, and mother of pearl adornment, etc., a range of production which is virtually unattempted here.

How this reflects upon British trade was recently impressed upon the writer when conversing with some of the officials of a large London print emporium (which lacks an English name), when one of them admitted that nearly 80 per cent. of the colour-printed litho. commodities which they were offering to the British public consisted of foreign supplies, chiefly German.

This bears out the assurance tendered by Mr. J. H. Reynolds, the quondam Director of Manchester Technical School, when informing me of his visit to the works of Messrs. Nister & Co., of Nuremburg, whom he said employed a staff of 1,700 workpeople; and yet every scrap of colour printing that was being done there at the time of his visit was being produced for the British market.

Away down at Stuttgart, in Wurtemberg, at a small lithographic works there that I was at, I found that they had been using the camera for practically every colour job that they printed by lithography. By this means the famous Berlin painter (Skarbini) had most of his pictures reproduced.

Even in times of war, Germany knows how to utilize lithography in a manner that might prove an education to some of our own Government officials who remain unadvised by practical experts of the craft.

Take the case of the recent British aeroplane raid upon the Düsseldorf Zeppelin shed, when their military governor was bombarded with shoals of reproach letters from the citizens; he speedily reassured confidence by replying with an *auto-lithographed letter* which was sent to every householder in the city.

We believe, then, that it is apparent to all, that now is our golden opportunity to " wake-up " industrially and commercially. What Germany has hitherto done, we can now do!

Government must organize a PERMANENT INSTITUTION OF NATIONAL CRAFT RESEARCH AND TRADE INFORMATION, in which the best expert, practical, and technical craft skill must be employed, for the purpose of affording any manufacturer free advice and helpful information of the most suitable technical methods of production in International competitive work, whenever he is in doubt or difficulty.

The stupid and indefensible policy of choking up trade departments with mere academical or influence-borne officialdom must be scotched once for all; merit, practical ability, and fitness must be the standards which supplant privilege and favouritism.

Cannot we have an English " Charlottenberg " to advance the interests of our commercial manufacturers? Is not the wealth of all nations built up from industrial pursuits? Then is it not the duty of good government to make every provision to aid and succour private effort in productive manufacture, where such is being surpassed or assailed by foreign state-aided rivals?

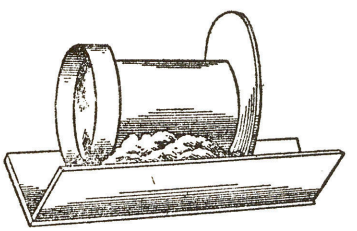
From the above considerations we are calmly persuaded that, when Europe is relieved of war's fearsome coil, a prosperous era awaits lithography, as the nature of the issuing circumstances plainly indicates, the outcome of which will illustriously expand the frontier of English lithography, and its kindred manifold interests.

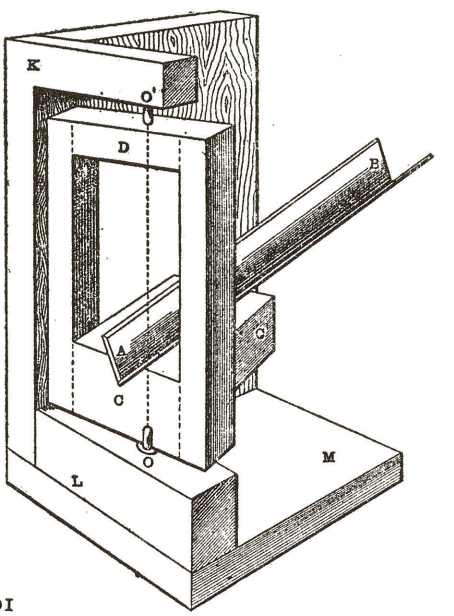
A SIMPLE TURNTABLE FOR LENS MEASUREMENT

BY DR. REGINALD S. CLAY

HAVING occasion recently to make a series of measurements of focal lengths of lenses for which the usual "Nodal Slide" was unsuitable, I devised a very simple one, which gave excellent results. It was home-made, and as it may be useful to other workers I am giving an illustration with a short description.

The illustration is almost self-explanatory. A piece of 1-inch angle-brass, AB, is mounted on a block, CC, forming part of a frame, CD, which can be rotated about a vertical axis, OO. The





pivots consist simply of two short pieces of stout steel wire which are inserted in the stand KLM, and work smoothly in holes in the frame

A Simple Turntable for Lens Measurement

CD; a washer on the stand at O lifts the frame off the stand and so enables it to rotate easily. The only points to be noticed in constructing the apparatus are that the axis OO^1 shall be vertical, that the angle of the angle-brass shall intersect this axis, and that the angle-brass itself shall be horizontal.

The lens to be tested can lie directly in the angle brass, or if preferred may be mounted on a short length of angle-brass with a lump of plasticine, and then this whole thing can be placed on the angle-brass of the turntable. To find the focal length of a lens, it is placed on the V, pointed at a distant object, and the image focussed on a piece of ground glass. The turntable is then rotated slightly, and if the image on the ground glass moves (as it is, of course, almost sure to do) the lens is moved along in the V either towards A or towards B, the image re-focussed, and the turntable again rotated. It is easy after a few attempts to find a position of the lens for which the image remains stationary as the turntable is rotated. When this position is found the focal length of the lens is the *distance from the axis of rotation OO^1, to the ground-glass surface* on which the image is focussed. The position of the axis can be marked on the instrument once for all, so that a series of focal lengths can be very rapidly and accurately determined.

Block and Design by L. C. C. School of Photo-Engraving and Lithography

A FEW NOTES ON TYPE FACES

BY W. H. AMERY

IN the almost illimitable supply of type faces it is surprising to find how few are necessary to do good and excellent work, while, of the number, those that really possess tasteful characters are extremely limited. As to what is tasteful or otherwise, opinions may vary, but when such differences in tastes are allowed for, the number remaining is small.

In the selection of a suitable type face the work to be produced must be taken into consideration.

For the setting of books we have three distinct kinds of type faces—the old face, the revived (or modernized) old style and the modern face. If a reproduction of an early edition, or a desire to adopt a similar style, old face type is needed, and for beauty of characters it would be difficult to surpass the Caslon old face, a letter which, although designed during the early part of the eighteenth century, still maintains its premier position as a body fount.

If a fairly modern work, then the revived old style type is to many more suitable, as it possesses to a limited extent the beauty of the old face, newer notions of symmetry, with modern perfection of finish. There is much to be said in favour of its regularity of lining, counter, etc., but such features point rather to mechanical accuracy than to legibility and artistic merit, for although to-day we have delicately constructed machines costing as much as one thousand pounds apiece for preparing the punches (cutting the letters on steel previous to the making

of the actual type), yet it is argued, and rightly so, that the modern machine-cut letter does not possess the legibility and artistic beauty in its graduated sizes that the early and even present-day hand-cut punch type so clearly reveals. It lacks, as it were, the touch of the artist, which no mechanism can ever replace. However, in the following extract the late Theodore L. De Vinne clearly points to the class of work for which the modernized old style is so admirably adapted.

" The general effect of the smaller sizes is that of a pleasing and a restful monotony. It does not irritate the eye with sharp contrasts of bristling angles and thick and thin lines; it does not challenge the reader's attention to a study of its individual characters. For this reason it is preferred by many authors for serious books, and by many publishers as the best form of colourless text letter to put around engravings on wood that show strong contrasts of black and white."

Caslon's old style No. 2, or better still, the old style lining No. 4, are among the best that can be obtained in the revived or modernized old styles.

The modern face. This letter has been designed on distinctively new lines, and when viewed letter by letter is undoubtedly pretty; when, however, composed in page form does not to many possess the legibility of the old style. That such is really the case may be proved by placing a print of old-style type beside a print of modern-face type, then, gradually retreating from same, it will be found that the old style can be read when the modern face has passed into a blur. Naturally, pages must be equal in weight of appearance to successfully carry out this test. Books, however, are occasionally printed in the modern face, and even from the famous De Vinne Press one may still find the letter employed for such purposes. During the past one hundred years, the modern face has been largely used for newspapers, Government and municipal documents.

A word as to the size of type necessary. For many years it has been customary to use a large number of small type faces, and when one considers the price at which many popular editions are sold, the reasons for same can be understood. However, this custom is rapidly giving place to a revival of the

ancient and better plan of using larger faces. As examples:

For demy or royal octavo books. Small pica or 11 point, pica or 12 point, are excellent readable sizes.

For demy or royal quarto books. English or 14 point, great primer or 18 point types are best.

Smaller sizes than these are not recommended, unless special reasons compel their use.

The question as to solid (no space between the lines) or leaded type (space between the lines) must also be taken into consideration. In the old face, plenty of margin (or beard, as it is technically known) is allowed round the letter—or, to put it clearer, a small face is cast on a large body owing to the depth of the descenders. The early type-founders undoubtedly cast their types with the intention of using them as they were cast, or, as is technically termed, solid. The famous Jenson type and the Caslon old face undoubtedly look at their best when set with close spacing between the words and no space between the lines. On the other hand, the revived old style has been cast with the idea of placing as large a face as possible on the body, hence when set solid looks too heavy, and needs spacing material between the lines to produce the correct appearance of the page as a whole. Therefore, the custom is for old-face type to be set solid; revived old style leaded. The modern face, both leaded and solid, looks well, provided too much space is not placed between the lines. It will not do to rely altogether on the rule to set the old face solid, for before very long it is quite possible this letter may be recut and placed on a body more in keeping with the size of its face. This may possibly cause a slight alteration to the descenders of the letters, a rather risky proceeding when dealing with an old face type.

It has lately been thought correct to set books in antique Roman or in Italian old style—better known as Jenson. Antique is a Roman in which the lines of all the characters are nearly uniform as to thickness, with square corners and of greatly increased boldness. Italian old style or Jenson is a Roman in which the positions of hairlines and thick strokes have in some letters been transposed. These faces undoubtedly

are more suitable for pamphlets, small booklets, or what is technically known as " display " purposes.

Although the careful choosing of paper, proper margins and many other points largely contribute to excellent book work, the correct selection of type must always remain the chief consideration.

Turning from books we come to " display " work—matter in which prominence is given to certain parts of the wording. A wider field now opens for the use of various faces of letters. Nevertheless, great care is as necessary here as before. From the artistic side, the present-day tendency is to reduce very largely the number of faces employed, and also the number of lines brought out or displayed.

The most popular types (or faces) in use to-day are the larger sizes of the Caslon old face. These are very beautiful and an excellent effect is obtained when a job is set in a series of this letter. Again, the antique Roman and the present-day Italian old style or Jenson face—designed after the golden type used by William Morris—are also in good taste. For advertising purposes many prefer the larger sizes of the Cheltenham old style—a monotone letter—the round letters of which are small and the ascenders long, much resembling the Roman lettering in the music portion of Schœffer's Psalter of 1459, and the Roman type face used by English printers before the advent of Caslon. Other type faces are used, but those already given are among the most suitable.

In the simple styles of display two methods are considered correct. 1. The bookwork. 2. The straight line.

In the former—which was largely the method of the early printers—a line here and there is " brought out " or displayed, while the majority of the wording is run on in paragraph form. This is undoubtedly the best plan to follow for certain classes of work: the use of as few sizes as possible giving greater artistic effect.

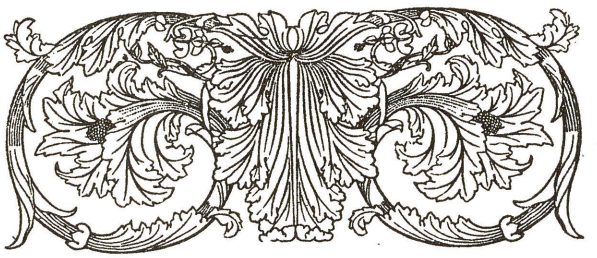
As to the latter style, in which almost every line is set out, the tendency is to make a feature of too many lines and too many sizes of type, leaving the job as a whole somewhat disjointed and in many cases very unsatisfactory.

For the higher branches of "display" one should be well trained and possess special qualifications, as the modern arrangement of advertising matter, circulars, etc., calls for no mean ability. On close examination, modern display will be found to be largely a mixture of the paragraph or bookwork style with the straight line, blended.

It has doubtless been noticed that the type faces so popular in bookwork are also in their larger sizes suitable for display purposes, and for artistic effect such cannot be excelled. This should clearly show that the number of type faces necessary to produce beautiful printing, whether bookwork or display, need not be many.

In addition to all that has been here written, the trained hand, the artistic taste of high quality, together with the vigilance and love for craft possessed by the early printers, are as necessary in our workmen of to-day as they were in the past. Unless such is recognised and readily obtained, the most careful selection of type faces, paper, ink, binding, etc., will be wasted.

The specimens of type mentioned in this article appear on the following page.



Block and Design by L. C. C. School of Photo-Engraving and Lithography.

The Types Mentioned

IT would not be suitable or profitable to encumber such an investigation of that part of the history of typography which relates to type and typemaking of the fifteenth century by an attempt to solve the great question of the introduction of the art, for the man who invented typography was the man who

14 Point Caslon Old Face. No. 2 Solid.

AND yet the world to-day is very little nearer a finite answer to the question, indeed, the dust of battle has very largely increased rather than dismissed, the numerous mysterious clouds that so closely envelop this problem, inasmuch that we are tempted to seek refuge in an agnosticism that almost refuses to believe that

Caslon's 12 Point Old Style Lining, No. 4. 2 Point Leaded.

IT would not be suitable or profitable to encumber such an investigation of that part of the history of typography which relates to type and type making of the fifteenth century by an attempt to solve the great question of the introduction of the art, for the man who invented typography was the man who

S. B. & Co.'s 12 Point Modern, No. 20. 2 Point Leaded.

IT would be neither fitting nor profitable to encumber an investigation of that stage of the history of typography which relates to the type and typemaking of the fifteenth century by a fruitless attempt to discuss the question of the introduction of the art, for the man who undoubtedly

S. B. & Co.'s 12 Point Antique Roman. 2 Point Leaded.

IT would, however, be neither fitting nor profitable to encumber an investigation of that stage of the history of typography which relates to the typemaking of the fifteenth century by an attempt to discuss the question of the introduction of the art, for the man who invented typography was no doubt the man who invented

S. B. & Co.'s 12 Point Italian Old Style. 2 Point Leaded.

OFFSET METHODS APPLIED TO LETTERPRESS AND INTAGLIO PRINTING

BY R. B. FISHENDEN, F.R.P.S.
The School of Technology, Manchester.

DIRECT printing methods, wherein printing ink is transferred from a letterpress, lithographic, or intaglio surface to paper or other material, are almost exclusively used in every department of the industry; and it is only in recent years that the offset method has been adopted in lithography, the ink being transferred from the printing surface to a resilient material—usually indiarubber—and from thence to the paper.

Direct printing introduces many technical difficulties which the skill of the craftsman and machine designer has largely overcome, but there are many advantages to be derived from a more general adoption of the offset principle. Before dealing with these it will be of help to review some of the drawbacks of direct methods of printing.

A good letterpress impression should be perfectly even in the strength of colour, the amount of the paper covered with ink exactly corresponding with the area of printing surface. This is a condition which can never be fulfilled in direct letterpress printing, for the printing ink is of a semi-fluid nature, and in the taking of an impression there is always a slight amount of "squash" due to the ink spreading beyond the actual printing areas. This is particularly apparent in half-tone printing, where

Offset Methods Applied to Letterpress and Intaglio Printing

an examination under the microscope of a proof on coated paper invariably shows grey dots surrounded by a dense black ring. If it be attempted to print on non-coated or rough paper by direct printing, the result is grey, because the amount of ink that can conveniently be used is insufficient to fill up the minute spaces between the fibres. If the amount of ink is increased, the result will be improved, but in no case can so vigorous a proof be obtained as when coated paper is used. It is not possible here to discuss fully the use of coated papers for ordinary half-tone printing, but the necessity for them is generally admitted.

The difficulties in lithography are similar in some respects, but as the printing and non-printing portions of the surface are at the same level, the ink does not "squash" unless the amount be abnormally large. In printing on a hard-sized paper, particularly if it has not been well calendered, it is not easy to obtain a uniformly solid impression; and if the amount of ink be increased sufficiently to obtain a "solid" impression, the ink spreads, and a "squashed" impression is obtained, although it will not have, under the microscope, the appearance of the letterpress impression.

In intaglio printing direct work has the fullest advantage, because a soft, yielding backing is used, and there is no liability to "squash." The impression is made on a soft sized or damped paper, which becomes moulded to the shape of the cavities in the engraving, thus imparting to the prints a "quality" which is characteristic of intaglio processes.

In dealing with the more extended use of offset in place of direct printing, reference may be made to the known advantages of the former in connection with lithography. It is established that a wider range of papers is available for printing, a smaller amount of ink is required, and a higher running speed may be attained. Although offset methods have been applied almost exclusively to lithographic work, there is no reason why the idea should not be equally successful in letterpress or intaglio printing.

The experiment of applying "offset" to letterpress work was tried some years ago in the Heureka machine, which was

designed for the printing of newspapers from the web, using a flat forme of type, but the idea does not seem to have developed into a practical process. In connection with high-grade printing the writer has seen the results of some interesting experiments which have been made in this direction by an English firm of repute. The prints are equally satisfactory on any kind of rough or smooth paper, and both type and vignetted half-tones possess the velvety richness which is characteristic of offset lithography. Half-tone blocks require to be carefully interlaid instead of being overlaid, but this is a matter familiar to a letterpress printer and offers no difficulty. Two of the incidental advantages would be :—greatly reduced wear on the type and the printing of paper of various thicknesses without change of make-ready.

It may be hoped that printing machine designers will turn their attention to the manufacture of letterpress machines suitable for work of this kind, for the advantage of printing illustration blocks on non-coated papers would make a wide appeal. It is evident that reversed blocks and "positive" type would be required, or as an alternative, and not impracticable, device two offset cylinders might be employed.

An objection which may be raised is that, although the transference of an ink image from a lithographic stone or litho metal plate to the material to be printed involves no damage to the rubber surface, the taking of the ink from a letterpress surface to the rubber is likely to cause permanent damage. It is not necessary, however, in every case to use rubber sheeting for the purpose of obtaining the transfer, glue or gelatine being equally satisfactory for a small number of copies. If the composition were suitably prepared, as is done for composition rollers to work at high speeds, the material might be used for long runs. The composition could be coated to a convenient thickness on a suitable flexible canvas support, and allowed to set in contact with polished metal in order that the surface should be perfectly level and smooth. Both initial cost and renewal of this material would be very small compared with that of rubber blankets.

It might be found practicable to use a gelatine-covered

Offset Methods Applied to Letterpress and Intaglio Printing

blanket for lithographic offset work in some cases, if the gelatine were treated with formalin before being used on the machines.

There appears to be little advantage in applying "offset" to intaglio printing on paper, excepting that the surface of the paper need not be crushed, and the enormous pressure used in direct printing is not necessary; although this might be advantageous in some cases, much of the beauty and richness of the intaglio effect is lost in the offsetting. The "Renaissance" process is known to be offset intaglio, and successful results are being obtained in colour by this method.

Offset is the only practicable method of printing on rigid material, such as metal plates. Tinplate printing is done in this way, and was worked from lithographic stones years before litho offset printing machines were introduced. At the present time rotary litho offset machines are built specially for this work. With suitable offset machinery, any non-flexible material possessing a reasonably level surface may be printed upon, and from what has been stated above this should apply equally to both lithography and letterpress printing. In the case of intaglio printing the offset principle has been used for many years for producing high-grade illustrations upon glass, enamelled iron, and other rigid materials.



Block and Design by L. C. C. School of Photo-Engraving and Lithography.

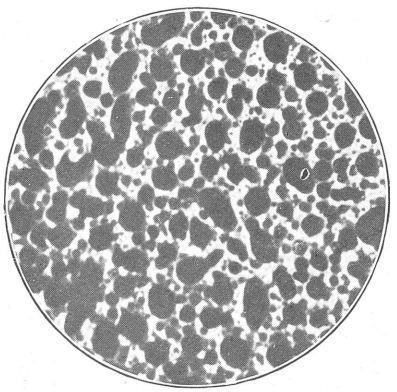


Fig. 1. Process Transfer Ink.

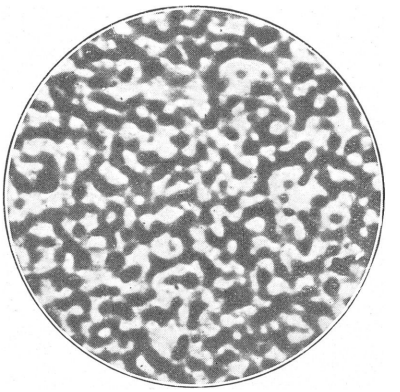


Fig. 2. Process Transfer Ink, thinned.

INK GRAIN: WHAT THE MICROSCOPE SHOWS

BY W. T. WILKINSON

FOR inking exposed Amphitype transfers a special ink is recommended, and as this ink gives decidedly better results than does ordinary photo process transfer ink, the following experiments were made.

Photo process transfer ink was mixed to the usual consistency on the slab and a glue roller charged with it. A plate of clean glass was then rolled up in just the same way as is customary with an exposed paper transfer or zinc plate, the rolling being continued until a thin, even film of ink was obtained, and the roller began to hang on to the plate. This plate was put under the microscope, and as the result was just a little startling it was photographed, and Fig. 1 shows that result to be not a homogeneous layer of ink, but one made up of blobs or dots.

Then more ink was put on the slab and mixed as usual, and the roller charged again, but in this case the rolling was continued until most of the solvents had nearly evaporated; then another clean glass plate was rolled up with this, and again a thin, even film resulted to the eye, having just the same appearance as the plate rolled up with the wetter ink, but the microscope showed quite a different result, Fig. 2, *viz.*, a distinct grain.

Two plates were then inked up with Amphitype ink and submitted to the microscope; the grain was just apparent—almost identical in fact with the Figs. 1 and 2, but there was no break in the continuity of ink, the film being quite homogeneous and it was consequently unphotographable.

Ink Grain : What the Microscope Shows

These results are quite interesting and serve to show that the Amphitype ink is quite a new departure. At the same time it must be understood that when a zinc plate (sensitized and exposed under a line negative) is rolled up either with an ink wet or nearly dry roller, although the film of ink on the exposed film of albumen shows (under the microscope) the granulated effect of Figs. 1 and 2 before development of image, still after the image is developed the ink on the whites is, by the process of development rubbed into the interstices of granulation, and when the development is complete and the film dry, the microscope shows a perfectly homogeneous covering of ink upon the lines forming the line image.



Block and Design by L. C. C. School of Photo-Engraving and Lithography.

THE GENESIS OF THE STUDIO IDEA OF ADVERTISING SERVICE

BY W. T. WALLACE

Of Carlton Studio



OOKING back upon the last twelve years of Fleet Street work, it certainly seems odd to one to note not only the developments in the particular business one happened to be engaged in, but how the standards have improved all round, and how different the outlook is in the world of advertising and in the greater world of public taste and interest.

It gives a certain tonic to one's reminiscences to think of the four unpretentiously dressed (not to put too fine a point upon it) and rather hungry young men who set to work in an East End cottage which happened to be named " Carlton Studio," making at ludicrous prices various more or less formal designs for stray clients, and spending many weary hours trudging in singularly inadequate boots to find those clients and to deliver to those clients when found.

One remembers, for instance, with affection that good soul of a landlady who surreptitiously put joints of her own in the larder and solemnly swore they were ours. But that's another story.

It isn't that there wasn't good isolated work then. There was. I don't suppose anything has been done in later days better than the Beggarstaffe work. But the general idea of an organized service in the matter of pictures for the great interests

The Genesis of the Studio Idea of Advertising Service

of the manufacturers and merchants of the country was simply in its earliest childhood. The amazing thing is that it was so at a time when in America the thing had gone already a very great way. And in those days it was considered necessary that an advertising man should have been either born or trained in America, or should at least have acquired (if the whole truth were known) in a special course of lessons by correspondence the authentic American accent.

I remember that in those early days the business side and the business possibilities of our joint venture did not appear very clearly to us. But when we once grasped the notion we not only found it profitable, but the most enormous fun to sketch our pictorial ideas on card-index cards, of which we had literally hundreds before the Studio shaped into anything like an organized body.

And the making of those cards, which I only dwell upon because it strikes the keynote of the organized Studio business, was no such simple matter as it seems to many kindly amateurs who send in " notions."

Advertising " ideas "—I use the word which is sacred in the business—to be effective must be simple and must be—pardon the platitude—picturable. We in this business all know the customer who comes with his soul full of his business and wants to explain everything about it—the size of the factory, the quality of the goods, the world-wide trade, the long established and well-known integrity of the firm, and a great deal more besides—all in the surface of a single poster.

That kind of client is very much less common now than used to be, and there's no doubt that a very much more interesting and intelligent time is coming for the advertising business in England.

A great many very well-trained men are in important responsible positions. Old-established firms, who held out as long as they possibly could on the lines that they were too well-known and too dignified to advertise, have toed the inevitable line.

Good heavens, not doing so before was very much like trying to stem Niagara with a truss of hay! But we must let byegones be byegones, and be thankful with the position as it is.

After all, the getting there, as I have said, was great fun.

I should like to put down a few notes about the essentials of the Studio-service idea.

When quite new customers come and discuss business with me for the first time I find they're extremely sceptical as to what we do as against what we profess to do. In the first place, they scarcely ever believe, except by way of politeness, that we are not something in the nature of a gigantic agency for the sale of artists' work. It takes some time for them to realize that all the work is produced actually in the studios of Carlton House, and that that is precisely the point.

For an organized Studio in the modern advertising sense is a great deal more than a mere collection of rooms, big and little, in which artists are at work.

Of course there are many considerable advantages in mere association. There is for one thing the actual help that one man gives another in the way of suggestions, and more particularly the help which the more experienced gives the less experienced with the example of his work.

The artist has the advantage of such important aids as the use of models, the costumes and the various properties, all so absolutely indispensable in the production of advertising where the actual goods are so often depicted with, I am ashamed to say, only too startling and exaggerated a realism.

Then there is the library of fine examples chosen from records of many countries, of photographs representative of action, such as, for instance, the correct stroke at golf, or the actual details of St. Paul's façade; or the authentic portrait of a public man; or the meaning of traditional symbols—and so forth.

There is again the immense help which the camera gives in saving the time of the model and giving a help to the memory of the artist. To produce real live figure work it is necessary to have a model, but it is not either necessary or advisable slavishly to work from it and risk that kind of jaded formal stuff which drawing academically from the life so often produces. The camera is used besides in our Studios, in very important ways, for the reduction and enlarging of work and for mechanical duplication of ornaments in formal design.

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A late addition has been the cinematograph, in order to get authentic studies of action and motion.

But so far all this is subsidiary, however important the central point of the whole work is that this picture-making starts from the business end. Before the artist comes to the work at all it is discussed, planned—most often, it is true, in association with him—suggestions are made, and the practicability or otherwise of the customers' requirements diligently considered.

It isn't one little bit to the discredit of the artist, who indeed is made in a finer mould, to assert that his strong point is not the business side of his job. He would not be as good an artist as he is if it were.

It is the old story really of specialization, or rather of an intelligent harmony of various specializations. It is because in the modern studio the actual work is produced under the direction of and in association with trained advertising brains that it is so well fitted to serve the great business interests of the country.

And talking of the business problem, of course, the salient point is that we are " organized for speed." Of course in an ideal world the client has, many months before an important campaign is contemplated, consulted the artist, the printer, the advertising agency, the newspaper proprietor and so forth. But current work is never done in this ideal way. All the successful and succeeding men are overdriven and the others are not the kind that do to-day what can be worse done to-morrow.

The normal advertising campaign begins in a hurry and ends in a rush, and at the latter end of the rush we are called in to get a great deal of work done by a specific date, and if we fail we shall get a quantity of kicks, together with grudged and reluctant ha'pence.

And that, as will be seen, is where the team idea comes in.

Let us take the instance of one of the special numbers of the *Times*, in the production of which we have had the honour to be frequently commissioned. A certain amount of space will have been booked early, but for one reason and another

a good many decisions have been suspended until the last moment. The general plan is hampered until these decisions have been received, and then an avalanche descends.

If a single artist were put upon a single job or set of jobs it would be days before the whole could be despatched. The only way is that the work should be rapidly planned in conference by two or three competent men and the parts of it distributed to various members of the team, and the whole assembled together before the line-blocks are made.

Not ideal conditions of work, I agree, but necessary. This kind of work can only at best be called commercial work, but it is the point of the organized Studio to make it the best commercial work that is possible. It is work very comparable to that of the skilled journalist. No one supposes that the man can sit down for a couple of hours and write emergency work to be delivered at once and make it the finest literature. Yet it is well known that some of the finest work has been done under these conditions.

Every attempt is made to deal with the question of staleness. A battle is half won if the dangers are recognised and foreseen. Not only are admirable examples provided as models, but lectures by knowledgeable outside men are given to the members of the Studio, by way of getting new view-points and criticism.

We have always made a feature of getting outside criticism, because our advertising experience has taught us that people are singularly blind to their own minor defects.

It only remains to say that the development of an artist's advertising service has practically necessitated in a modern studio the side-by-side development of a copy department. The reasons for this are obvious. Before the artist puts pencil to paper, the advertising staff has made perhaps rather clumsy, but essentially understandable, lay-outs and suggestions, together with invented slogans and quite commonly a sketching out of the whole advertising plan of campaign.

It is mere waste of time that all this work should be done again from explanations given by ourselves to others. The compact and economic way is to have it all done under the one roof.

HOW TO GET ORDERS BY DIRECT ADVERTISING

A DEFINITE PLAN WHICH CAN BE ADOPTED AT TRIFLING EXPENSE

BY MARCUS HEBER SMITH

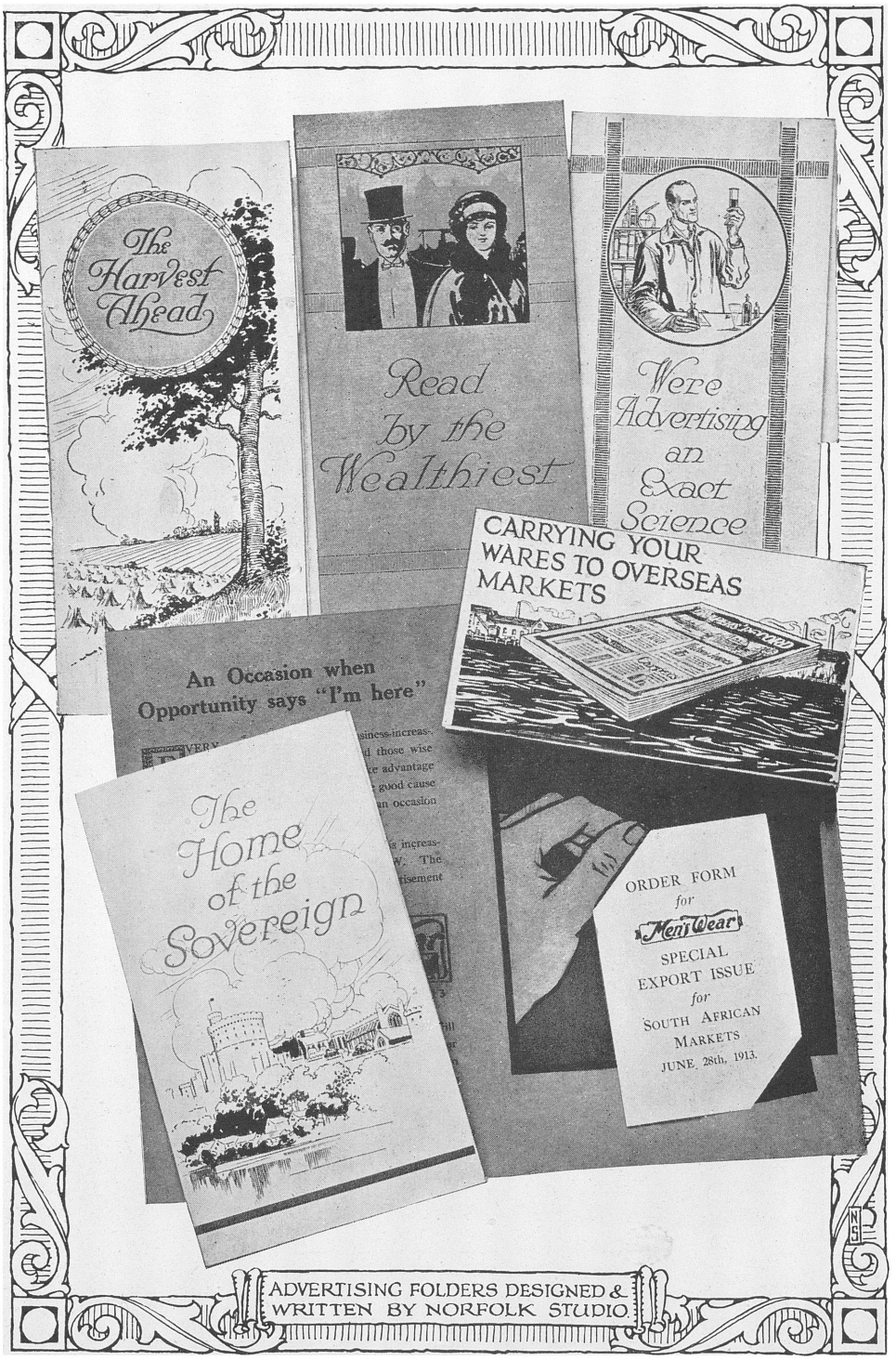


ROUND dozen years of hard work in the advertising business have convinced me of the truth of a remark made to me some time age by Mr. Thomas Russell, president of the Incorporated Society of Advertisement Consultants—perhaps the greatest living authority on advertising :—

Half—perhaps more than half—of all the money spent every year in advertising is just money thrown away—wasted.

The reason of this seems to me fairly obvious. But before discussing this question, and before attempting to show how a large degree of certainty can be ensured, let me say that it is not my purpose to plead for any particular form of publicity. The plan outlined below is given merely to indicate one means by which advertising can be made to show profitable results *immediately*. I believe that all advertising properly conducted must be beneficial. But before stating the plan referred to I should like to ask the business man who says that he does not believe in advertising at all to look at the matter in a fundamental way, and make sure of just what this thing which we call " advertising " really means.

As far back as there is any history advertising of one kind or another has always existed. For advertising is simply making known to others something which you wish them to



Hill & Co. Norfolk Studio.

ADVERTISING LITERATURE.



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Norfolk Studio.

ADVERTISING LITERATURE.

know about your service or your goods. Until about the end of the 18th century there was, however, very little need of advertising, as almost every article of commerce was made by hand and sold by the maker to the consumer. But the middle of the 19th century manufacture by machine led to the ruin of cottage industry and of the workshop behind the selling counter. As machinery increased in general use, so production tended to exceed the immediately available demand, and manufacturers were forced to go farther afield in their search for customers. This wider distribution of manufactured articles could never have been accomplished if we had not been a reading nation, and if there had not been at hand the ready means of spreading the news of what we had to sell.

It is unnecessary now for anyone to attempt to prove the value of advertising. Neither is it necessary for anyone to endeavour to show that press advertising can be made productive of satisfactory results, or that poster advertising is more profitable, or to argue about the respective merits of any of the other hundred-and-one forms of publicity.

All advertising properly done is beneficial.

The definite plan which I have in mind can be tested at an expense which can justly be called trifling. If it is tested out thoroughly, and under the right guidance and conditions, in the great majority of cases profitable results will follow.

The plan is based on what is known as the Norfolk System of Direct or Postal Advertising, and because I know from personal experience that this plan does bring results I should like every business man who does not believe in advertising, or who has had an unsatisfactory experience of advertising, to give this plan or one based on the same general principles a fair trial.

Select carefully a list of say one thousand names of possible customers. Prepare a set of six circulars, folders, form letters, mailing cards or other kind of advertising literature. Have all the six circulars printed and tied up in parcels numbered 1 to 6, ready to address and post.

Now take the list and divide it into ten sections of 100 names. Then post the first circular to the first section of 100 names. The other five circulars should be posted at regular

weekly intervals to the same 100 names. After the third circular has been posted, start off a couple of travellers or as many as may be necessary to call personally on these one hundred people.

After three weeks, when the first section of the list has been circularized three times and while the travellers are calling, take the second section of 100 names and give them the same treatment to prepare the ground for the travellers.

Continue the same plan to the remaining eight hundred names until the whole thousand possible customers have received every Tuesday or Wednesday morning a personal message from you about your goods, your shop or your service, and until every name on the list has been personally called on by your representatives. The list should then be transferred to a standing list to which should be sent a circular every month regularly and persistently, until business results.

It has been demonstrated over and over again that two travellers with the help of a series of six circulars posted to a list of names on the above plan, will get more business than it would be possible for four travellers to get by merely calling upon these people in the ordinary way without any form of circularizing to assist them.

Figure it out for yourself and you will see that this must be so. Think of the irresistible force of the persistent hammer, hammer, hammer, and then finally the personal call to clinch the sale, and get the order.

Suppose you take a thousand possible customers—men who ought to buy your goods. If you could form them up in a line where you could approach them consecutively, you would surely get some business before you got very far down the line, but before you had completed the task you would be very tired and very weary, and other departments of your business would have suffered from neglect.

The arguments you use in selling your goods can be presented by means of circulars. The points wherein your goods differ from and surpass those of your competitors can be brought out effectively by illustration and text. These facts can be repeated brightly and convincingly in various forms; insistently, but with dignity, and—you can be right on the spot with

every one of your thousand possible customers every Wednesday morning—every week for six weeks.

No doubt you may think like many other business men that your goods are " different " and that although this plan might do very well for Smith or Jones, it would not be suitable for you. A popular excuse for neglecting to extend business by advertising is " My goods cannot be advertised, because they are different." If goods were not " Different " there would be no advertising, and very little real progress, for it is precisely by difference that we go forward. A petrol engine is better for certain purposes than a steam engine, because it is different. So long as steam was our only practical prime motive-force, flying was impossible. The progress arose out of the difference. Business crawls until it is " different." Then it flies.

The very quality of " Difference " makes your goods not only more amenable to advertising, but more dependent upon it. If you will think for a minute you will agree that this is so. Consider the new industries which have sprung up in the last few years, and which have been created almost entirely by advertising—think of the many old-established firms selling standard lines of goods which have also embarked with undoubted success upon the sea of publicity. So do not let the argument " My goods are different " deter you from considering this plan, which is simply the difference between concentrated intensive advertising, and advertising in the usual spasmodic, haphazard, happy-go-lucky, " I don't-give-a-hang-for-the consequences, but-I've-made-up-my-mind-to-advertise-so-I'm-going-to-do-it " sort of method.

The strength of the foregoing plan consists in (1) The list. (2) The regularity and persistence, and (3) The advertising matter which is sent out.

1. *The List.* Here it might be mentioned that in the search for a new list of names it is surprising how many good possible customers are often discovered. Many firms when they decide to send out some circulars call in someone who makes a business of supplying addresses and then orders " a list of a thousand names." No one takes the trouble to check the list. The travellers who know the territory do not see the list. It is

selected on a very haphazard basis, by an outside concern who, while being paid for " a list " is not paid sufficient to really see that every name is a " prospect." The list is therefore probably anywhere from twenty to forty per cent. bad, perhaps more. Needless to say this is the wrong way to go to work. The list should be prepared most carefully. Every name should be checked as far as possible, so that any obviously useless name can be struck off.

2. *Regularity and Persistence.* If the best results are to be obtained it is essential that the circulars be posted with clock-work regularity. It is also essential—if the best results are to be obtained—that all six circulars be posted. Not three or four or five or eight, but six. I have on many occasions tested results with larger and smaller numbers of circulars, and I find that in the great majority of cases, six bring the best results for the amount of money spent.

3. *Advertising Matter.* I believe that even a bad circular sent out regularly once a week for six weeks would produce some sort of result, but obviously the better the circular the better the results. If, when a business man makes up his mind to try this plan, he simply dashes off some form of circular, sends it round to his printer, has it printed and posted, and then sits down and waits for results, he will even so get some results, but he will not get them cheap. There will not be enough to be cheap. The general plan behind the scheme should be worked out very carefully. The various selling points about the goods should be considered and the advantages which they possess should be brought out in the most effective and striking manner. The circulars should be in most cases brief and to the point, so that they can be read in a minute or two. If the circulars are prepared by a capable advertising man and printed properly on good paper, it will be found that this form of advertising is not by any means a gamble, but a sound and conservative investment.

The great attractiveness about this form of advertising to the man who pays the bill is that he does not have to wait very long to see what is going to happen, neither does the " experiment " involve any very great expenditure.

The plan is good for any trade, but it is practically infallible for the printing trade. The printer can do it cheaply; designs, blocks and typesetting are practically the whole cost, outside of postage. Almost always the machining can be done along with some job for which the printer is being paid, and the offcut used for the paper. Get the design and wording right and almost any size or shape of paper will serve and the more the paper varies from week to week—and the style too—the more effective the shot. A printer who will not try-out this scheme doesn't *want* to get more business and that's all there is about it!

EDITOR'S NOTE.—The illustrations to this article have been supplied by the Norfolk Studio, the Home of Ideas for Advertisers, of Racquet Court, Fleet Street, London, E.C. All the circulars were originated and designed by the Norfolk Studio on behalf of various clients, who, of course, own the copyrights. As these Circulars depend to a large extent on colour for their attractiveness the illustrations hardly do justice to the originals.

The blocks to illustrate this article were made by Messrs. Hill & Co.

A CHANGE IN THE GENERAL STYLE OF BANK-NOTE PRINTING—IS IT DESIRABLE?

BY A. E. BAWTREE, F.R.P.S.

IN the following notes I propose to discuss with scientific impartiality the present relationship between the general methods of bank-note printing and the weapons now in the hands of the criminal forger. I admit that I am not wholly disinterested in the question; the past one or two volumes of PENROSE'S ANNUAL bear evidence that I specially recommend certain methods of production, but I have tried to eliminate personal bias and leave it to my opponents to demonstrate by scientific reasoning and actual experimental results that the following arguments are not as sound as I believe them to be.

The present fashion in bank-note production is to have an intaglio plate printing upon a colour ground, nominally of protective value, but in reality purely an addition to the artistic scheme.

Sir Oliver Lodge at the 1913 meeting of the British Association characterised the present time as one of rapid progress in the realms of science. Every photo-engraver will agree with this and will see the foolishness of the head of a firm of bank-note engravers who stated to a *Daily Mail* representative that, " It is a well-ascertained fact that no photographic reproduction,

by whatever method, can equal an original steel-plate print." Director J. E. Ralph, of the American Bureau of Engraving and Printing, was hardly less dogmatic when he declared, " A duplicate plate cannot be made from an impression alone. As a matter of fact the laws of refraction and diffraction and the resolution powers of the photographic plates as we now understand them make it axiomatic that an exact fac-simile of any printed matter can never be produced by any process employing the action of light without the use of the original plate." An ounce of fact is worth a ton of theory, and the following facts answer these statements completely. (1) A tablet of thirty-six mixed genuine and counterfeit intaglio plate-printed postage stamps was shown at the 1913 Exhibition of the Royal Photographic Society and visitors were asked to distinguish between them. Many tried, including some of the highest experts living, but no one succeeded. The same tablet went on to the International Philatelic Exhibition in New York, where Director Ralph, in common with many of the world's leading philatelic experts, examined it, but here also no one was able to distinguish between the impressions. Finally it has been shown prominently at the Anglo-American exposition in London for nearly five months and a silver medal offered to anyone who could distinguish between the impressions, but again no one has succeeded. It is therefore certain that steel-plate printed work can be copied with such accuracy as to deceive, not only the public, but also the highest experts.

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(2) I have publicly and by letter challenged Director Ralph to allow me to copy one of the American bank notes printed under his direction, but, he has not accepted the challenge.

I could demonstrate theoretically that the nature of steel-plate printed work lends itself to accurate counterfeiting in a way that surface and litho work do not, and could prove such theory by numerous tests I have had to make for bankers, but space forbids, and really the above practical example renders such theorising unnecessary.

Advocates of intaglio plate printing claim for this class of work higher artistic excellence than is possible with surface work. As a matter of fact this claim is practically non-existent,

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as regards bank-note work. When in the employ of one of the largest bank-note printing firms, I made surface blocks of some of their finest vignette work and showed them proofs. They peremptorily forbade the continuance of the experiments as, " It would not be possible to get anything like so high a price for surface work as they did for plate-printed work." Here we have the key to the whole situation. Vested interests form the real reason for printers pressing the claims for steel-plate printing and bankers have as a rule been content to take them at their word.

This policy, adopted by many bankers, of relying implicitly upon the advice of their stationers is very curious. Of course they must have expert advice and that of the best, but what firm is going to advocate a newer and more scientific method of production, when this method will yield them less profit and incidentally throw out of use plant in which half their capital is invested? One or two firms of financiers make a practice of consulting independent experts, while at least one to my certain knowledge retains such an expert upon its staff. This is probably the better system, but sooner or later one or other of the plans will become absolutely necessary. My correspondence in all parts of the world reveals the fact that forgeries of steel-plate printed notes are rapidly growing in frequency.

Another interesting point for the student of morals is the advocacy by leading bank-note printers of the " Security Yellow Tint." While the real security of this tint entirely disappeared upon the discovery of isochromatic photography, the fact that the amateur photographer has been long in grasping the importance of this aid to his work has no doubt justified firms in commending the yellow tint to their customers as possessing security, but such a claim is now obviously untrue. After the extensive advertising and educating in the uses of colour filters carried out by Messrs. Wratten & Wainwright, Ltd., for a firm to mention a " Security " yellow tint in its contracts can be characterized as little short of fraudulent.

To employ a more modern process in the production of new issues of bonds and other securities is of course simple enough. To replace an existing bank-note currency by one of an entirely

new form is a much more serious matter, but with overwhelming scientific proof that the notes in use are in danger of forgery it is one that must be faced. The test of real security can be summed up thus :—A document is secure if it requires the resources of a bank-note firm to counterfeit it. A document is dangerous if it can be copied with appliances obtainable by the ordinary amateur photographer by a man of average ability, assisted by such instruction as can be gained at a technical school. My practical advice to every banker is to have such a man upon his staff, to submit every specimen to independent examination and never to be guided by advice in which the wish may be the father to the thought.

A Change in the General Style of Bank-Note Printing. Is it Desirable ?



Block and Design by L. C. C. School of Photo-Engraving and Lithography.

WHAT CAN WE LEARN FROM BAXTER?

BY ALFRED DAWSON

GEORGE BAXTER, engraver and printer, fills a most interesting period. Born in 1804, and dying all too soon in 1867, he did a vast amount of good work.

For any reader interested specially I hope it is not a trespass to indicate my esteemed friend Mr. Billing, the printer at Guildford, as a relative who treasures many memories of the illustrious colour printer.

His method starting as a wood engraver, was to rely on the wood block for his colours, and by a curious jump to finish prints on the copperplate press, this being the key and printed in black or neutral either from a delicate line-etched plate, or in early days occasionally a special woodcut, and later an aquatint.

The style of cutting these colour-tint blocks was curious. They were, as it were, stippled or dug out in pits varied in direction, size and character by the graver, so cleverly turned different ways that a delicate coloured ink gave a most subtle effect, especially in the light parts. He was in full swing in 1854, when the Crystal Palace was opened, and a charming print about 6 in. long, showing the antediluvian animals in the foreground and the Palace behind, is very clever.

I feel on examining the prints at the British Museum that not only did he get very fine ink, but he seems to roughen the block in delicate parts so as to make it hold only a fraction of the colour that otherwise it would. Wood engravers used to

pick up the surface of a block to imitate a chalk line—but Baxter gives a more delicate result than anything like that.

What can we learn from Baxter?

Register was, of course, to him a great problem, and he used to vary the dampness of his piles of partly finished work to get that right. In those days all printing paper must be wetted. We now need not damp, for in the offset method hard, rough drawing paper can be printed dry, and it is peculiarly gratifying that the offset method can be worked in good register.

Baxter patented his method, but in the foregoing one does not see quite enough to make a patent. One patent of his date, however, is more to the point. It consisted in making a sound plate in mezzo or aquatint, then taking electros from it and finally setting a capable engraver to remove locally from each plate the parts that were not needed. Such a mode of making a set of intaglio colour plates would be excellent but for the very considerable labour—and the question of a simple register method for the copperplate press has even now not been answered satisfactorily.

It is, however, only just to observe that since the making of intaglio plates has become so much more simple than it used to be, and bearing in mind the demand for high-class colour printing, it is incumbent upon the expert to provide a reliable register system for the use of the copperplate printer.

Given this power a great step will be gained in the art department proper—for it is so natural to arrange the colour of a picture by either of two methods then opened out that a wide development of the Baxter method will become a certainty.

The successive printing of colour plates upon one sheet in good commercial register, which is, of course, the first and most natural call, will then be supported by another method —that of local inking.

The local inking method practised for over a century—a branch of art by itself which has increased its vogue remarkably of late—can be then superadded to the Baxter system of successive printings. So operating one can ink the blue plate, for instance, but re-ink parts with grey or other shade of blue before printing, thus giving special emphasis to a special feeling, and so also may any of the other colours be treated.

What can we learn from Baxter?

In a portrait, for instance, what is more natural than to mix specially a tint for the flesh as differing from the red that is employed in the other parts, where perhaps a full scarlet is desired as the costume might require?

But this is not all. For, of course, we add in this department a power of "fine etching" far beyond what is understood by that term by the half-tone block maker. Each plate is naturally worked upon so as to improve its effect, and this alone will carry the final result forward in a striking manner or an extra plate of any colour can be made to be so varied (as Baxter, or, indeed, any colour expert) as to print a supporting colour.

A plate printing a neutral blue is followed by one printing a very penetrating blue which, however, is cleared away in such parts as where the softer shade is required. A sunset landscape may have a greenish aureolin yellow for foliage, especially followed by a plate arranged for an orange yellow arranged for the sky in particular.

Of course, it is presumed that we are here not writing for the producers of millions of pictures nor even thousands, but for a particularly beautiful object for our homes.



Block and Design by L. C. C. School of Photo-Engraving and Lithography.

A NON-TECHNICAL ARTICLE ON REPRODUCTION

BY JAS. R. HORNE

"A little knowledge is a dangerous thing,
Drink deep or touch not the Pereian Spring,
Those shallow draughts intoxicate the brain,
But drinking largely, sobers us again."
—*Pope.*

NO apology is necessary for our quotation. The master mind who penned those lines had not for his object the despising of anyone's intelligence so much as the application of their knowledge. It is indeed a healthy action of the mind to enquire into those questions which arise in the course of one's routine. The purpose of this article is to explain, in non-technical language, for the benefit of the general reader of this volume, how some of the illustrations which appear in these pages are produced. Whereas we recognise that many of our readers are specialists in the practical side of the reproductive arts, there is an increasing number of readers whose business or pleasure demands some explanation of the processes in more general use.

Having made our justification for the layman, we will proceed to explain a few of the processes which are most commonly used. There are many processes used in reproduction for

printing, but a classification of what is termed photo-engraving or process-engraving gives us three—(1) Line engraving or zinc etching, (2) Half-tone engraving, (3) Three-colour engraving. All these come under the general heading of photo-process engraving, which in turn might be defined as a process by which a design or image is, by the aid of photography, transferred to metal, thereafter etched or engraved by either mechanical or chemical action.

According to the nature of the drawing, photo, object, picture, etc., depends the method of reproduction. Looking at Fig. 1, we see a drawing in line, all of which lines are drawn in solid black ink. Any effect of shading or tone is shown by a series of lines varying in thickness, but not in the density of the ink used in the drawing. This point is worthy of note by those who use this method of reproduction. Grey lines, or any lines except jet black ones, do not lend themselves to line engraving. Providing we have a drawing which fulfils these conditions, we proceed as follows.

The reproduction can be enlarged or reduced in size, though it is better to have a drawing larger than the reproduction. But the size being determined, a negative is made. The method of negative making is not dissimilar to that of ordinary dry-plate negative making, only process negative making is called wet-plate because the operator " coats " his own glasses and exposes while these are wet with the sensitive material. This negative, when finished, shows the drawing exactly as the drawing. (In ordinary photography the negative shows the image completely reversed in position.) Fig. 2 gives us some idea of the appearance of the negative. The white lines are clear glass; the solid black parts are equivalent to the white spaces of the drawing.

Bearing that in mind we next sensitize a piece of metal, usually zinc, and place the negative and the zinc into position in a printing frame. The light passes through the clear parts of the negatives, the solid parts resist the action of the light; thus we have the light acting chemically on the sensitized surface. After exposure the zinc plate is " rolled " over with a thin



Fig. 1.
DRAWING.
For Line Reproduction.



Fig. 2.
Showing Negative.



Fig. 4.
This shows Zinc print partly etched. Note the fine lines filling up with protective ink.



Fig. 3.
Print on Zinc. Painted Round, ready for Etching.



Fig. 5.
Plate deep etched. Note the relief.



Fig. 7.
Proof from finished block.



Fig. 6.
Plate routed, that is, all surplus metal removed, then mounted on wood to type height.

THE
SCOTT·ENGRAVING·COMPANY

THE VARIOUS STAGES OF LINE ETCHING.

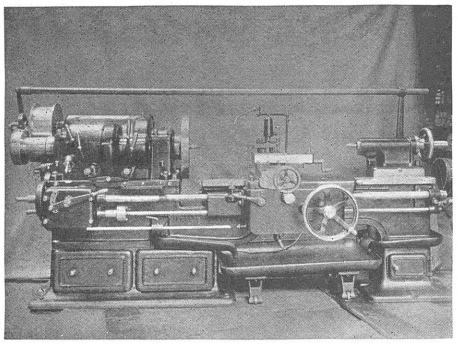


Fig. 1. Photograph unretouched.

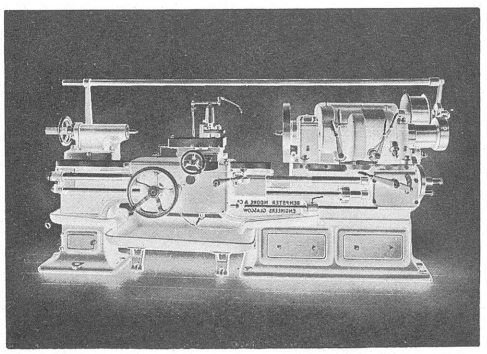


Fig. 2. Negative.

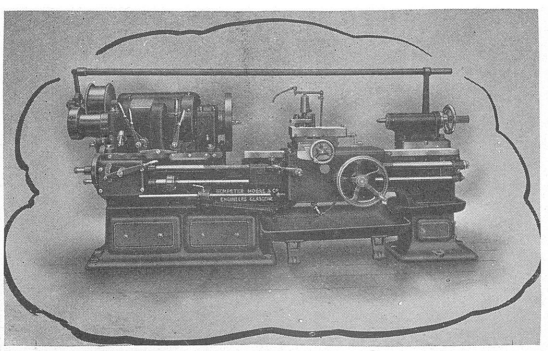


Fig. 3. Print on metal roughly etched.

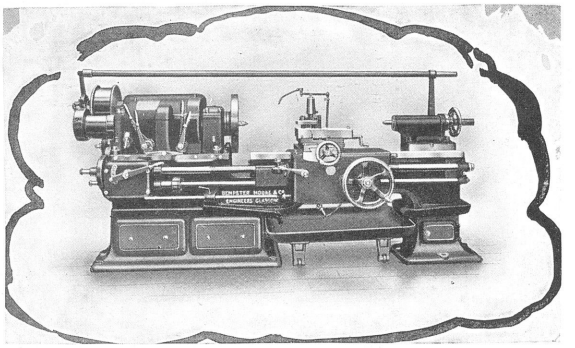


Fig. 4. Plate fine etched, ready for routing away surplus metal.

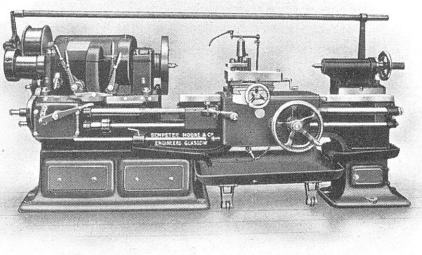


Fig. 5. Plate routed and vignetted.

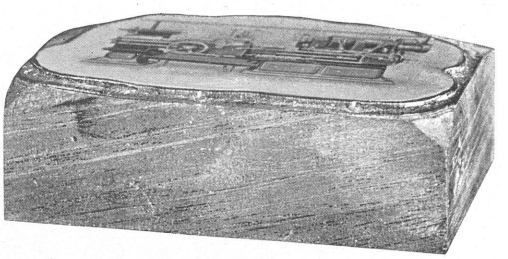


Fig. 6. Plate mounted on wood, type-high, ready for printing press.

Glasgow Engraving Co.

THE VARIOUS STAGES OF HALF-TONE ETCHING.

coating of greasy ink, then the metal is placed in a tray of water. The parts which have been acted upon by the light absorb this ink, while the opaque parts of the negative, through which no light has penetrated, prevent the ink from adhering to the metal on those parts. By merely wiping gently with cotton wool we remove the ink from the parts not wanted, and have a "print" or copy of the drawing on metal. The print in *soft*, greasy ink is now hardened by dusting with an asphalt powder, which is heated or burned into the ink, thus making the plate ready for etching.

The theory of line-etching is simple, but the practice requires much care and skill. By a series of etchings in acid, usually nitric if the metal is zinc, of varying strengths, the clear zinc is etched away. The hardened ink-print resists the action of the acid, though during the etching it is repeatedly strengthened by adding more ink and asphalt. Gradually the surrounding clear zinc is etched away until we have the original drawing shown in relief and ready for printing when mounted on wood. If the reader will refer to the various illustrations appended to this article, a better idea of the stages of making a line block will be given.

Half-tone reproduction is employed where the effect required is to show tones in their subtle gradations from solid black to grey and even to white itself. Like line reproduction, it also is a photo-mechanical process, with the following difference. If a half-tone illustration be examined through a magnifying glass, the picture will be seen to be composed of dots. These dots are there to break up the solid tones and to give the intermediate values between the darker and lighter shadows.

When the negative is being made there is a screen placed in the camera between the focussing glass and the lens. The light must therefore pass through this screen during the exposure of the negative. This screen is very costly and consists of two pieces of glass, which are engraved with parallel lines and joined together so that the lines cross at right angles. There are various rulings varying from 55 to 200 and even more lines per inch. The finer the screen, the finer the illustration.

From the negative a print is made on copper or zinc, and the etcher treats the plate. These dots are nominally the acid-resisting parts of the metal, and thus after etching the surrounding metal, between the dots, the relief thus given forms a printing surface. The etcher requires much artistic skill, as the various tones are protected by painting over those portions which require "stopping" out, thus preventing further etching. Where contrast is required, the acid is allowed to etch away, and it is only great care and much practice that teaches the craftsman to bring out the exact values of the illustration.

One very often hears the designation of "Lithography" given to a coloured illustration. At one time chromo-lithography was the only practical process by which coloured illustrations could be printed. For every colour, or nearly so, separate printings were necessary, and thus lithography might mean any number of printings from two to twenty.

Science aided Art and taught us several years ago that all colours, tints and shades of those colours, could be produced fairly accurately by three printings—yellow, red and blue—these colours being primary or fundamental.

The principle of the three-colour process is based on the theory that all colours are composed of yellow, red and blue, which, while not scientifically true as applied to light, is nearly correct when applied to inks.

Three-colour negatives are, briefly, made as follows:—Each negative retains only those rays of the desired colour. Thus the negative showing the yellow values excludes the blue and red rays. The yellow rays are excluded from the red and from the blue negative. The rays not wanted are cut off by means of light filters. The etching of three-colour illustrations is similar to half-tone etching.

Three-colour work, as the name implies, requires three printings. First the yellow plate, then the red, lastly the blue, each colour "registering" on the previous impression, thus completing the picture in its natural colour.

To print three-colour illustrations is an exceedingly delicate task. The amount and colour of the ink must be carefully

regulated. As many impressions are usually taken, the printer must be cautious to maintain uniformity. As the colours fit exactly on top of one another the merest stretching or shrinkage of the paper will be disastrous to fine work.

With these observations we trust that some measure of knowledge has been given the general reader. He may now feel, in turning the pages of this volume, a better appreciation of and sympathy for the engraver and his closely allied friend, the printer.



Block and Design by L. C. C. School of Photo-Engraving and Lithography.

PROCESS MATTERS AT THE LEIPZIC EXHIBITION

BY A. J. NEWTON, F.R.P.S.

THE outbreak of the war in August no doubt prevented many printers and photo-engravers from fulfilling their intention to visit the great exhibition of book production at Leipzic. I was fortunate enough to spend some time in Leipzic in July and a note of what was to be seen there of interest to photo-engravers may be acceptable to readers of the " Year Book."

There were, of course, in all sections, displays of prints from photo-engravings, though Great Britain did not stand out well in this respect. The exhibit of Great Britain was much more notable for fine books and for the exhibit of Shakesperiana than for photo-engraving work, although one or two firms had exhibits, notably Messrs. Eyre and Spottiswoode, who displayed a piece of very rapid three-colour reproduction, the work of Carl Hentschel, which appeared in *The Sphere*.

There were only three camera makers who exhibited, Klimsch, Falz & Werner, and Ernemann. The latter a newcomer in the process trade, showed a very substantial and well thought out camera, but many of the vital parts were made of wood, a practice which is being gradually given up in English construction. Even had there been no war, English manufacturers would have had little need to fear the competition of German camera makers.

There were no other apparatus novelties in any way striking,

though Messrs. Klimsch are now making etching machines unlike any that we are familiar with, but which are not likely to prove more efficient.

With regard to rotary photogravure, there were certainly magnificent exhibits. The Rotagravur Syndicate had a very large machine working, similar to the one the *Illustrated London News* have erected, and almost all the big machine makers had specimens of rotary photogravure machines on show, some of them producing work during exhibition hours.

There was also a very good historical collection, from the German point of view, showing the progress of rotary photogravure, illustrated with some of the earliest examples. It was noteworthy that more than one inventor claimed to have been the first in the field, in some respects.

There were several colour prints in rotary photogravure, some of them being very promising, although none of them appeared to have entirely overcome the difficulty with the inks, which so far always seem to give the appearance to every reproduction as though it had been made from a coloured pastel drawing, when, in reality, it might have been actually made from an oil or water-colour.

The chief novelty in processes was the Ullmann process, and this firm had a remarkable exhibit of books and prints which they had reproduced in facsimile by their method. In Germany a patent had been applied for for this process, but had apparently not yet been granted, though a patent for the process has been granted in England (No. 24607 of 1913). It is an ingenious adaptation of the old process of Playertype, by which an original in black and white is reproduced the same size, without any photography with a lens or camera. Player took a piece of bromide paper or an ordinary dry plate and placed it, film downwards, on the matter to be reproduced. He then exposed through the back of the sensitive material, and the difference between the light reflected from the ground of the original and the design was sufficient to give a negative. Naturally there would be a little fog even over the design itself, which should be clear glass in the negative, but this was reduced away and excellent prints were made from such negatives. These

Process Matters at the Leipzic Exhibition

were exhibited on more than one occasion at the Royal Photographic Society's Exhibition.

The Ullmann process is precisely similar in principle, except that a bichromated colloid is used instead of bromide of silver. A glass plate is coated with, for example, the ordinary enamel solution or something similar, and is placed in contact with the book page or engraving to be reproduced, exposed through the glass and then developed in water. It is then dyed up as a fish-glue print on metal is dyed, and we have a negative in stained fish-glue on glass which can be printed from. It is quite possible that there would be a scum on the clear lines, but this can be easily removed. In any case, the negatives shown were quite satisfactory, and a very large volume of work, of all kinds, done with this process, was on view. Most of this work had been printed from zinc or aluminium plates on the offset machines, thus very clear sharp impressions of type matter were obtained. In fact, it would be difficult to distinguish some of the books reproduced from the originals, so exact was the reproduction.

It is obvious that this process, although interesting, has only limited uses, because it can only be used for black and white work and when the originals are required to be reproduced of the same size; but when these two conditions are fulfilled, it is, of course, very cheap, rapid and exact.

Though the method is certainly a novelty and a patent has been granted here, it is doubtful if such a patent would be upheld in view of recent decisions, because there is not stated any difficulty overcome in using in a new way processes which are themselves old. For the method was devised and published by Player many years ago, and the use of bichromated colloid has long been well known as suitable for the purpose of making negatives, as, for example, in the first part of the Vandyke process.

NEW METHOD FOR THE RAPID DRYING OF NEGATIVES

By Messrs. A. L. LUMIÈRE and A. SEYEWETZ

IT is sometimes useful to be able to dry a negative within the shortest possible time, and the most effective method of accomplishing this has hitherto been the treatment of the negative by concentrated alcohol or acetone. This method, however, does not allow of complete drying of the negative after a single immersion, at least two successive operations being necessary. It is also costly, and involves the use of a product which is not only inflammable, but has the additional disadvantage of sometimes rendering the gelatine of the plate opaque, especially if the latter has not been completely freed from hyposulphite of soda.

We have found that certain salts, readily soluble in water, and without any disorganizing action on the gelatine, may be used in concentrated aqueous solution for the rapid dehydration and drying of water-soaked gelatine.

The desired result may be effected in a more or less thorough manner, by means of certain sulphates, sulphite and hyposulphite of soda, and carbonate of soda and of potash.

Among sulphates, sulphate of alumina (in 100 per cent. solution) produces the most complete dehydration. Sulphate of ammonia (in 75 per cent. solution), anhydrous sulphate of soda (in 50 per cent. solution), sulphate of zinc (in 160 per cent. solution), and hyposulphite of soda (100 per cent. solution),

whilst acting to a certain extent, are less effective than sulphate of alumina.

Carbonate of potash in saturated (cold) solution (90 grammes in 100 c.c. of water) gave the best results in our hands, in regard to rapid drying of negatives, at the same time causing absolutely no alteration of the gelatine even after prolonged contact. The negative, soaked in water, is immersed for four or five minutes in the saturated aqueous solution of potassium carbonate, then briefly pressed between blotting paper to remove the greater part of the alkaline solution. Drying is completed by wiping the gelatine coating with a linen cloth. Rubbing will not harm the coating, which will have become very firm, and will assume a glossy appearance.

A negative so dried is ready for printing from, as the surface is quite dry and resists even pressure of the finger nail.

Carbonate of potash has the advantage over the other above-mentioned saline solutions of providing rapid and complete dehydration. Furthermore, all other salts cause white spots to appear, after a short time, on the surface of the plate, these being due doubtless to saline efflorescence. With carbonate of potash the coating suitably dried remains perfectly brilliant and transparent even after several weeks.

Nevertheless, certain negatives so treated develop defects in course of time, and for this reason we recommend drying by carbonate of potash only as a rapid temporary method. The negative can, of course, always be subsequently washed in water and dried by air in the ordinary way, the gelatine having undergone no permanent change by the drying treatment.

Experimental tests show that after treatment by carbonate of potash, desiccation is practically complete, only a very small quantity of water and carbonate remaining, and this does not affect printing.

To sum up, a saturated aqueous solution of potassium carbonate constitutes a new and economical method for the rapid drying of negatives, and possesses decided advantages over alcohol; it will therefore be of practical service in all cases where it is desired to use a negative as soon as possible after development.

CHIPS FROM A WORKSHOP

BY T. J. KELLY

THE kindly Editor requests me to write something of general interest to the readers of "The Year Book." There is more than a literary affinity between the gentle Elia and "W. G.," else he would realize that 'stereotype' is a drab word, scarcely conducive to the elegancies of education. One doubts if Walter Pater could be æsthetic thereon or find it a source of inspiration as a lake poet did the blessed word Mesopotamia.

This recalls the story told by a Southern knifegrinder (whose hands were soiled climbing the chestnut tree) of a man who went into a store and leaning against a post said, "Have you anything new or fresh?" "Yes," said the keeper of the store, "that paint you are leaning against is quite new and fresh!"

The introduction of lead moulding has practically side-tracked the various processes relied on hitherto. Beeswax, ozokerit, stearine or gutta-percha each has its vogue and its limitations, but one can readily affirm that the perfection of the lead-moulded electrotype is evident and demonstrable as a proposition in Euclid. When a die is struck from metal to metal, when, in fact, both are rigidly "married," the acme of reproduction has been fixed. The hammer of Thor is not used, it is a delicate manipulation and to compare the procedure to moulding in wax or other vegetable substance is unfair—to the vegetable. We may commiserate the future expert finding this chair occupied and seeking a solution in Swift's "Tale of a *Tub*"! But supplementing there are other spheres, fresh woods and pastures new, in electro-metallurgy to occupy the

student or amateur. If one reverts to the earlier stages of electro deposition it is apparent that printing plates were not the *ultima thule* of the electrotypist, indeed Galvani of Bologna, would be hoist with his own petard to-day. Model plants are no longer a novelty, they are a necessity in technical equipment. The amateur photographer, or printer, has no lack of literature or material; it is symbolic that electro deposition has not been studied in this lucrative enterprise. I use the word amateur with diffidence, inasmuch that many improvements in mechanics have been the work of amateurs, and for whom I suggest that a workable plant of small size would be a wise innovation. There are a number of students of electro deposition surviving the printing section—Professor Hubert Von Herkomer found it an absorbing study during his later years, and Professor Sylvanus Thompson is a life-long student and authority. The connection between the photographer and the electrotypist is a close one, though to some extent it has been in abeyance or forgotten. The photographer can obtain plaster casts from the negatives, these also can be electrotyped direct. The process is an excellent medium for producing water-marks, and has a distinct commercial value.

The formula may be new to many readers, and it is as follows :—

First make up the following mixture: Gelatine 4 oz., gum arabic 2 oz., water 20 oz. The gelatine and gum are allowed to soak for an hour; 100 minims of glacial acetic acid is then added and the whole melted by the aid of a water-bath. It will be better if the hot solution is quickly strained through fine linen or muslin. Take a sheet of glass of the size required, thoroughly clean it, and rub well with a waxing solution, made by dissolving 30 gr. of beeswax and 1 dr. of yellow resin in 5 oz. of turpentine. The surplus is polished off, and the glass surrounded with a rim of thick paper, glued to the edges. The plate being placed on a level surface, the hot gelatine mixture is poured in, to a thickness of from $\frac{1}{12}$-in. to $\frac{1}{8}$-in.—the thicker the film the higher the relief, but if too thick there is a difficulty in drying. The plate is dried by the aid of heat, or in an air-tight box containing calcium chloride to absorb the moisture.

When dry the gelatine film is sensitized in ammonium bichromate 288 gr., water 20 oz. Sufficient ammonia is added to give just a faint smell. The plate is immersed in this for ten minutes, when the surplus solution is removed gently with blotting-paper, and it is again dried—this time, of course, away from the light. When dry the film will readily strip from the glass. The sensitized film is exposed to sunlight under a negative, the glossy side in contact with the latter. The sun's rays should fall perpendicularly on it, as far as possible, and it should remain until all but the highest lights of the picture has become brown; this may take from fifteen to thirty minutes. The film is then taken from the printing frame and immersed in alum 96 gr., glacial acetic acid 96 gr., water 10 oz., and left in this for several hours, or until sufficient relief is obtained. It is now surface-dried, and a wooden rim formed round it. The plaster of Paris cream is finally poured in and allowed to set, when the gelatine can be stripped off, and the plaster mould can be immersed, face up, in a little melted paraffin wax which it will absorb. As soon as the face of the mould is seen to darken it should be removed, as an excess of wax is not required. The mould can now be used to secure any number of plaster reliefs; or if, instead of waxing, it is well brushed with powdered bronze, an electrotype in metal could be obtained from it. Electro work from plaster is deeply interesting, because it will enable the electrotypist to produce minutely correct copies of carvings or casts, in fact, by employing his scientific resources he can form a valuable collection of works of art, duplicating from the perishable plaster to the durable copper, with all their beauty and all their classic perfection.

THE WIDER LIMITS OF DEVELOPERS

BY T. THORNE BAKER

PERHAPS never until the outbreak of war with Germany did photographers realize what a versatile thing a developer is. We have become so accustomed to consider that certain developing agents are desirable for certain classes of work that when faced with the difficulty of obtaining future supplies of German-made reducing agents a certain amount of mild consternation was caused.

I think that this little trouble is having a wholesome educational influence, for many professional photographers are discovering that by studying the characteristics of a developing agent they *can* get, it is possible to produce with it the results they thought hitherto could be only produced with an agent they now *cannot* get.

Hydroquinone and caustic soda has been for many years used for dry plate process work, just as glycin has stood pre-eminent for stand development, and metol-hydroquinone for gaslight papers; but in no case is the reducing agent incapable of substitution, and in practically all cases the substitute can be made to give a result *just as good.*

It may be of interest to discuss briefly in this article a simple and systematic method of testing the capabilities of any reducing agent, and by so doing it will in general be found that without having recourse to different agents we can get with one only a sufficient variation in its action to meet all our requirements. The photo-mechanical worker has usually a good deal of different

work to do as regards development, from the counteracting of the tendency in many orthochromatic plates to give harsh results to the production of harsh contrasts in half-tone and line negatives.

There could hardly be a more illuminating agent to take for an example than paramidophenol, as this base is the foundation or starting point of an immense number of developing agents. Benzol, C_6H_6, is converted into phenol, C_6H_5OH, and this successively becomes paranitrophenol, $C_6H_4OH.NO_2$, and para-amidophenol, $C_6H_4OH.NH_2$. Modern chemistry has evolved derivatives of this base, many of which are patented, for each of which some individual and remarkable qualities are claimed, but the fact remains that if we carefully analyse the capabilities of the paramidophenol itself, it is found, alone, to equal practically any other reducing agent for photographic work.

In any case the routine of testing its powers is the same, *i.e.*, by using the reducing agent in solutions of various concentrations and with different proportions of accelerator and restrainer, and making test negatives in each case for comparison, we shall be able to determine what degrees of contrast and differences of gradation it is possible to obtain.

The test formulæ may be conveniently taken as follows :—

A.	Reducing agent	2 parts
	Potassium metabisulphite	1 ,,
	Water	100 ,,
B.	Anhydrous sodium carbonate	4 ,,
	Water	100 ,,
C.	Ten per cent. solution of potassium bromide.	

It is always desirable to test a developer in the first instance *without* bromide, and in most cases equal parts of A and B will give a good all-round developer,—perhaps a little concentrated, but this is a fault easily counteracted by dilution with water.

One of the most convenient, as well as the most suitable, pieces of apparatus for testing work is the Chapman Jones plate-tester, which gives for qualitative purposes almost as much information as the Hurter and Driffield slip. A modified form of the Chapman Jones tester—without the colour patches—is

obtainable at a very much lower price, and this will be found an admirable form of densitometer for investigating both plates and developers.

The suggested procedure is to make equal exposures to a standard source of illumination at, of course, a fixed distance with the plate tester, and to develop one plate with equal parts of A and B, without bromide, another with the same solution with bromide, and others with larger relative amounts of accelerator, keeping up development in each case until, say, the twentieth or twenty-fifth square just shows up. By testing a sufficient number of variations of the developer, and comparing the negatives obtained, and by modifying the formula as the tests dictate, it will be found that a satisfactory developing solution for either direct copying or process work can be arrived at with practically any of the better-known reducing agents.

Where a plate-tester of some approved pattern is not available, a satisfactory analysis of the powers of a reducing agent can usually be made by exposing plates under a well-selected negative, but some form of densitometer is far preferable.

The moral is that where we cannot obtain further supplies for the time being of any one particular developer, there are others to be found " just as good."





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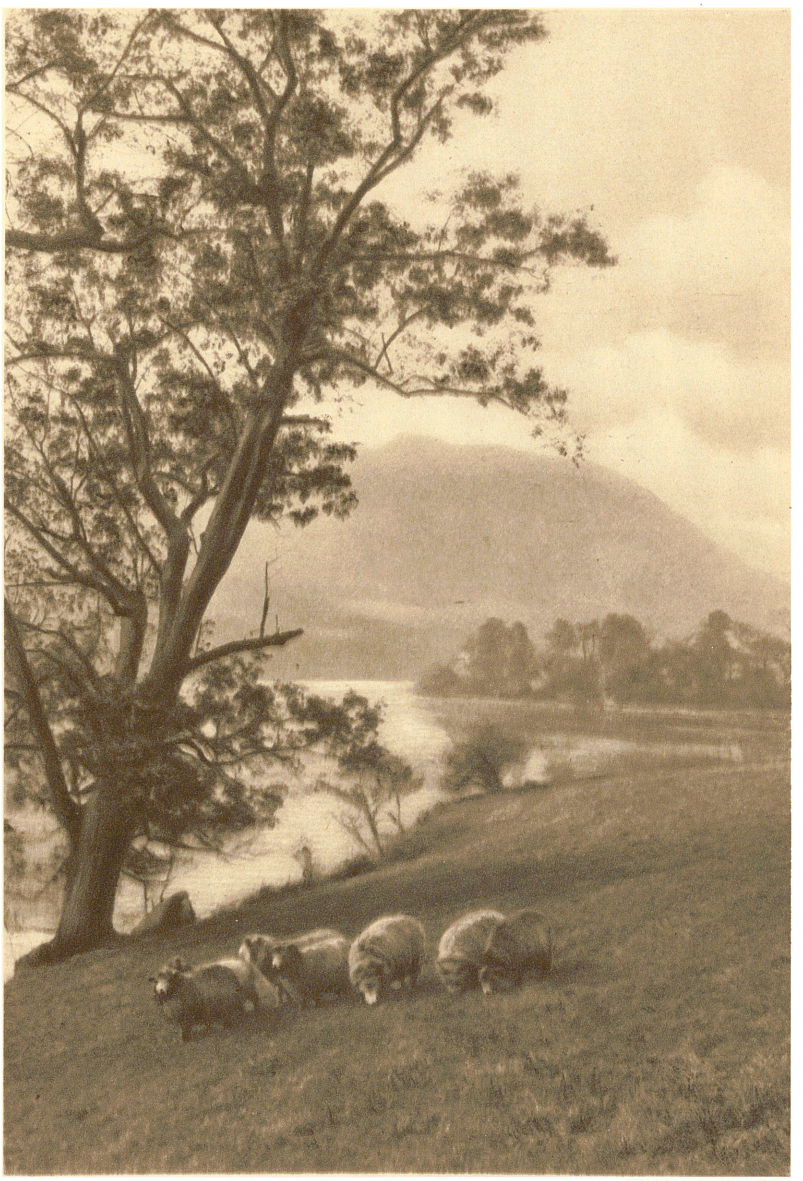


Photo by *C. P. Abraham*

EARLY MORNING—RYDAL WATER

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Photo: Elliot & Fry.

F. L. RAWSON, M.I.E.E., A.M.I.C.E.

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FOUR-COLOUR BOOK ILLUSTRATION
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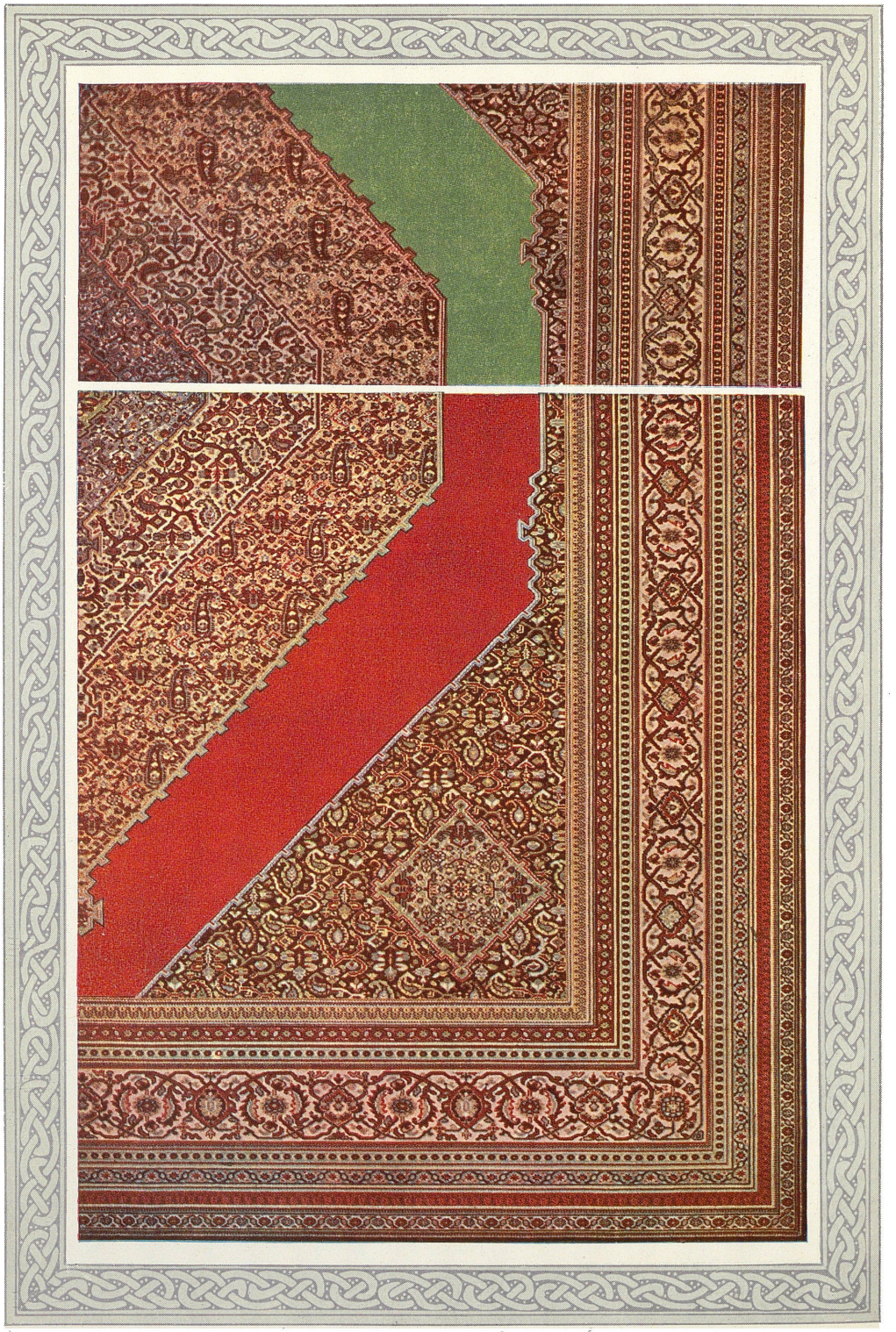


Harrison Compton

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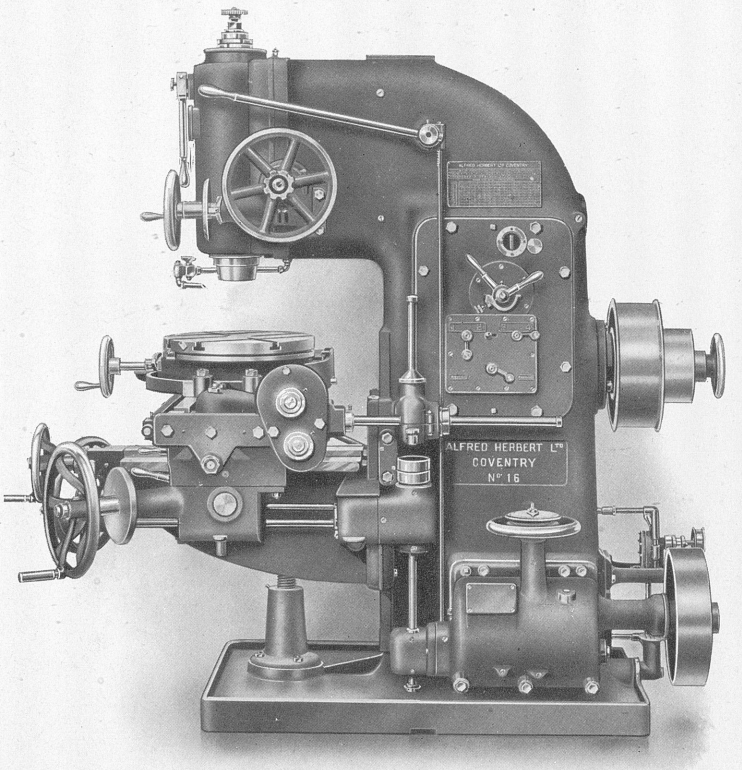
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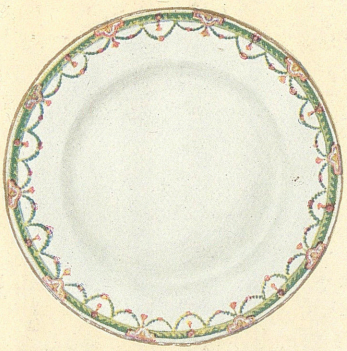


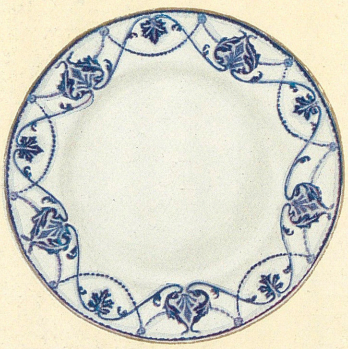
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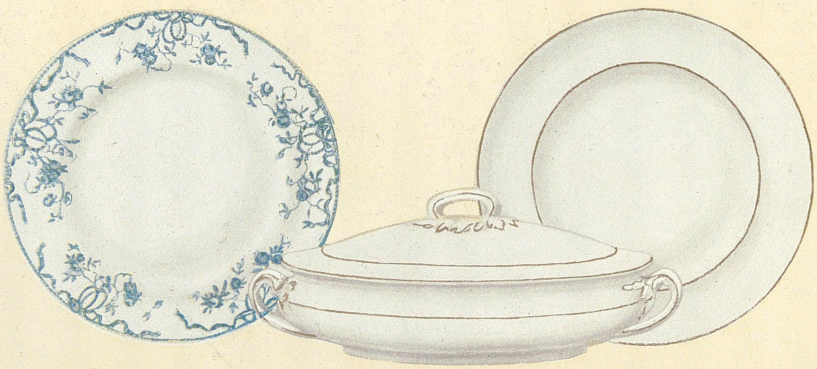
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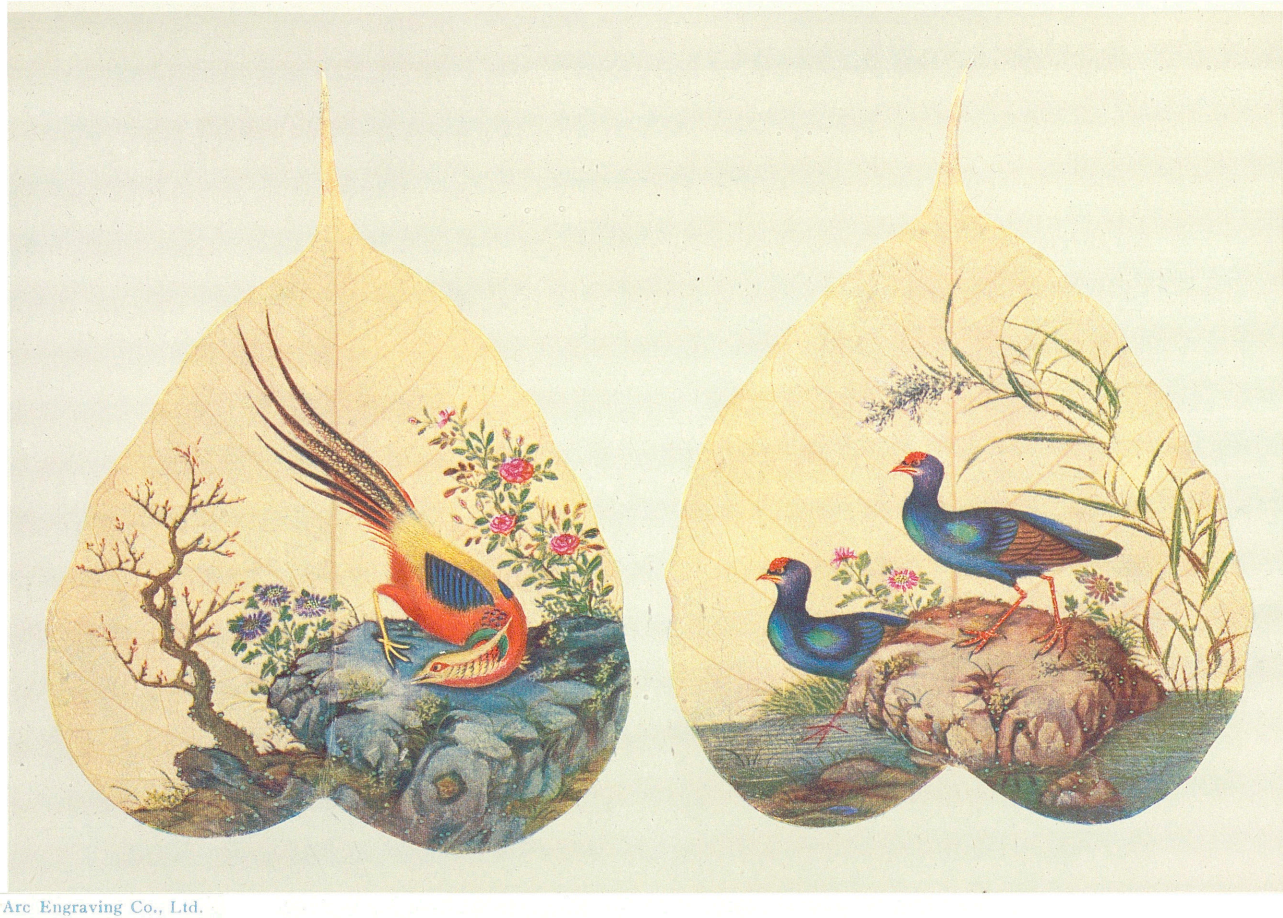


Vaus & Crampton, Ltd. Drawing by Edmund Dulac.

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in Three Colours.



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MISS VALLI VALLI.

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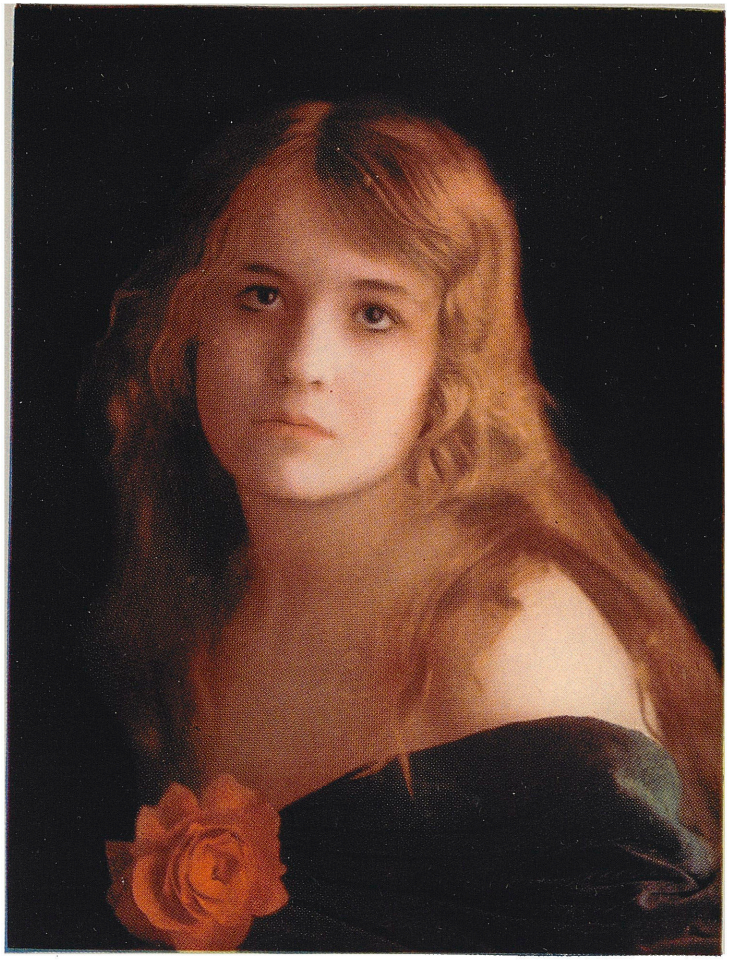
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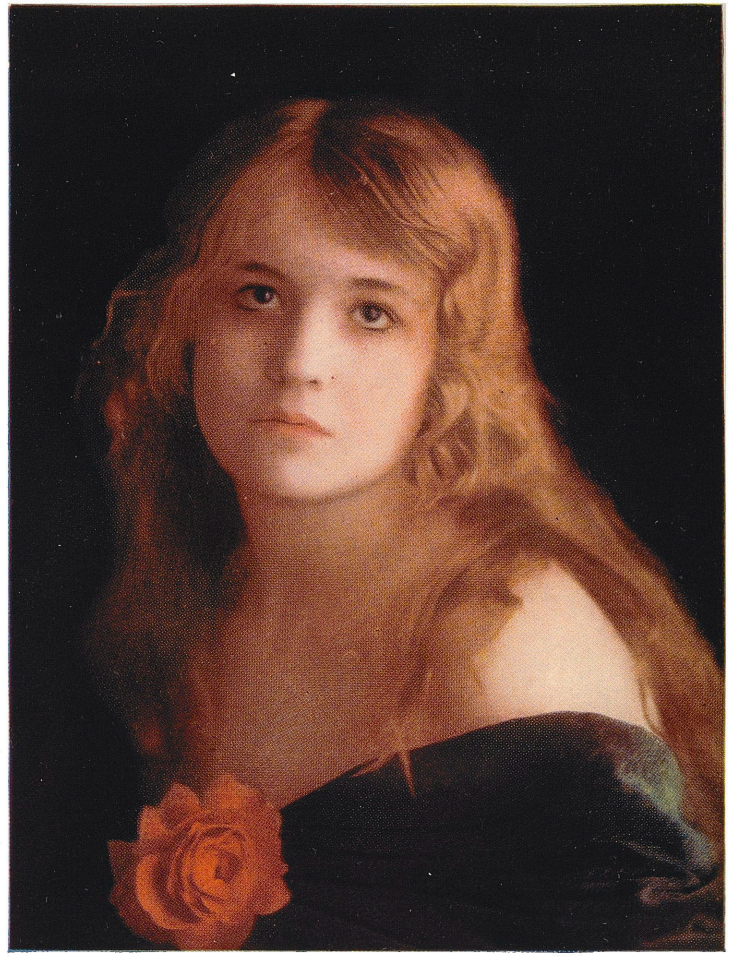
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Norfolk Studio.

ORIGINAL.

"A.G." ELECTRO.





MISS MARY LAMONT.

Photo from Life
by Polychromatic
Process in Natural
Colour.

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By Eyre & Spottiswoode, Ltd.
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BEAUTY'S EYES.

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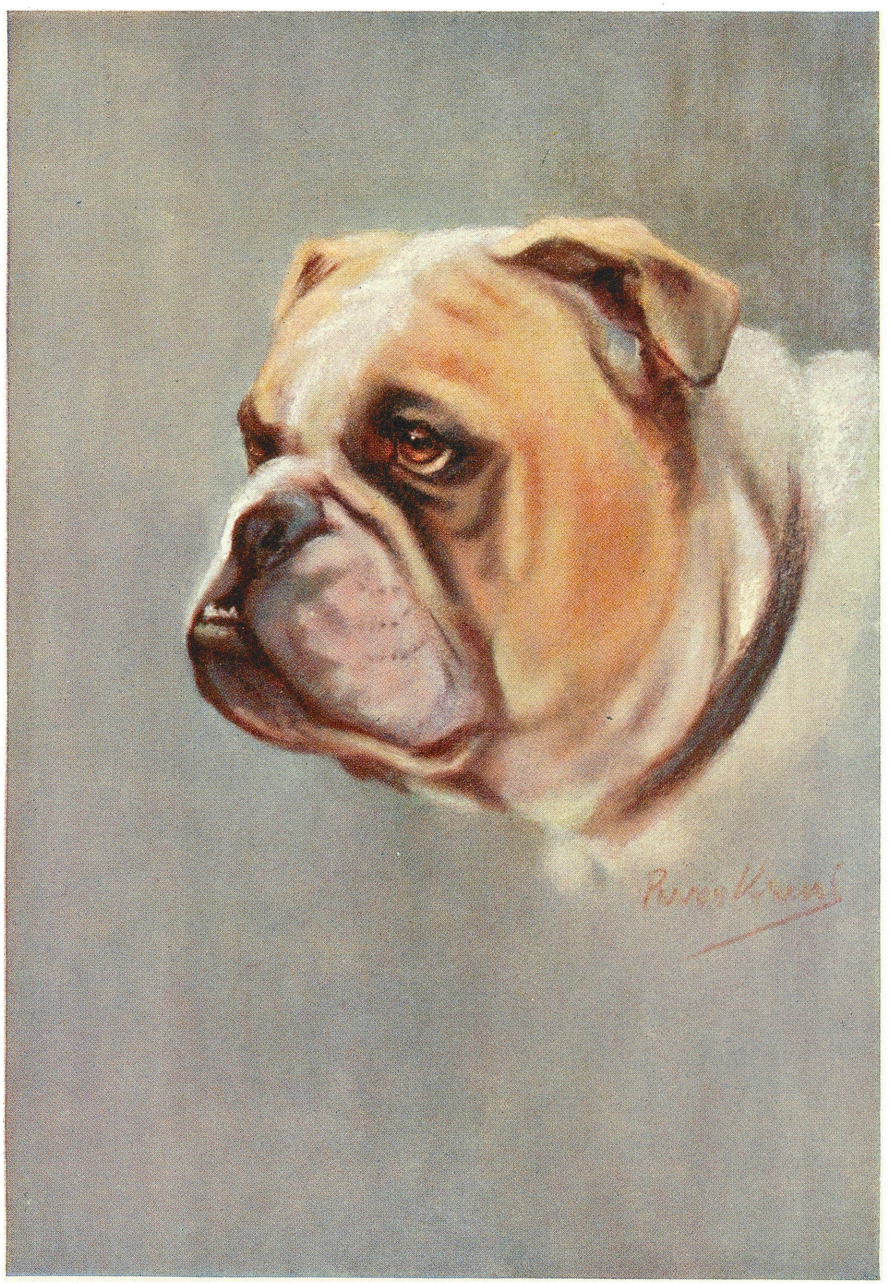


S. A. Cattell & Son.

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THE ORANGE GIRL.

Inks by Richardson Printing Ink Co., Ltd.



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ALL BRITISH.

Reproduced from a pastel by Miss Persis Kirmsé (Photochrom Copyright).

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GILCHRIST
BROS
LEEDS.

"THE KING'S TRUMPETER"

By JOHN GILBERT, R.A.

(Direct from original painting in Leeds City Art Gallery.)



"A SUMMER EVENING."

GILCHRIST BROS LEEDS

Direct from original in Leeds Art Gallery.

By permission of Messrs. Brumby & Clarke, Hull.



The Direct Photo Engraving Co., Ltd.

Carlton Studio.

COMMERCE.

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C. Angerer & Goschl, Vienna.

A SMITHY IN STYRIE.

From a water-colour painting by Fritz Lach.

Reproduced by four colour blocks.

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The Half-Tone Engraving Co., Ltd. Norfolk Studio.

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S.S. "AQUITANIA."

Reproduced by permission of Cunard Steamship Company, Ltd.

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(Reproduced in four colors)



The Premier Engraving Co. The Association of Designers, Ltd.

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Inks by Shackell, Edwards & Co., Ltd.



E. Hamel & Co.

COVER DESIGN.

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The Acme Tone Engraving and Printing Co., Ltd. The Dover Street Studios, Ltd., photo.

PORTRAIT OF MLLE. GINA PALERME.

Inks by Shackell, Edwards & Co., Ltd.



Hill & Co. Dover Street Studio.

MODEL BY BOUÉ SŒURS.



Philipson & Son. A. L. Hitchin, photo.

THE DAISY CHAIN.



Grout Engraving Co., Ltd. Freckleton Studio, photo.

A CHILD STUDY.

Inks by Shackell, Edwards & Co., Ltd.

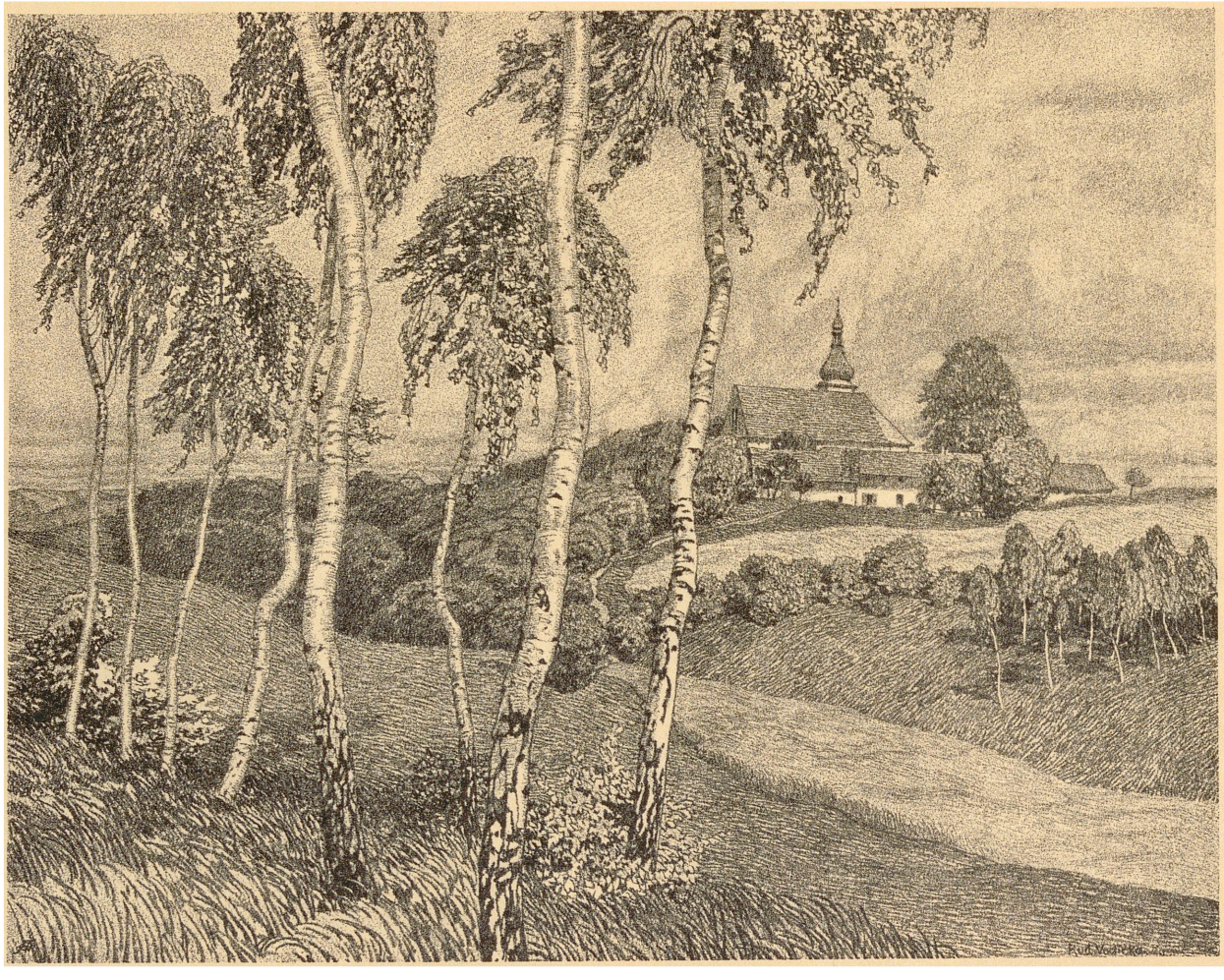


Sessions & Co.

Association of Designers, Ltd.

FURS.

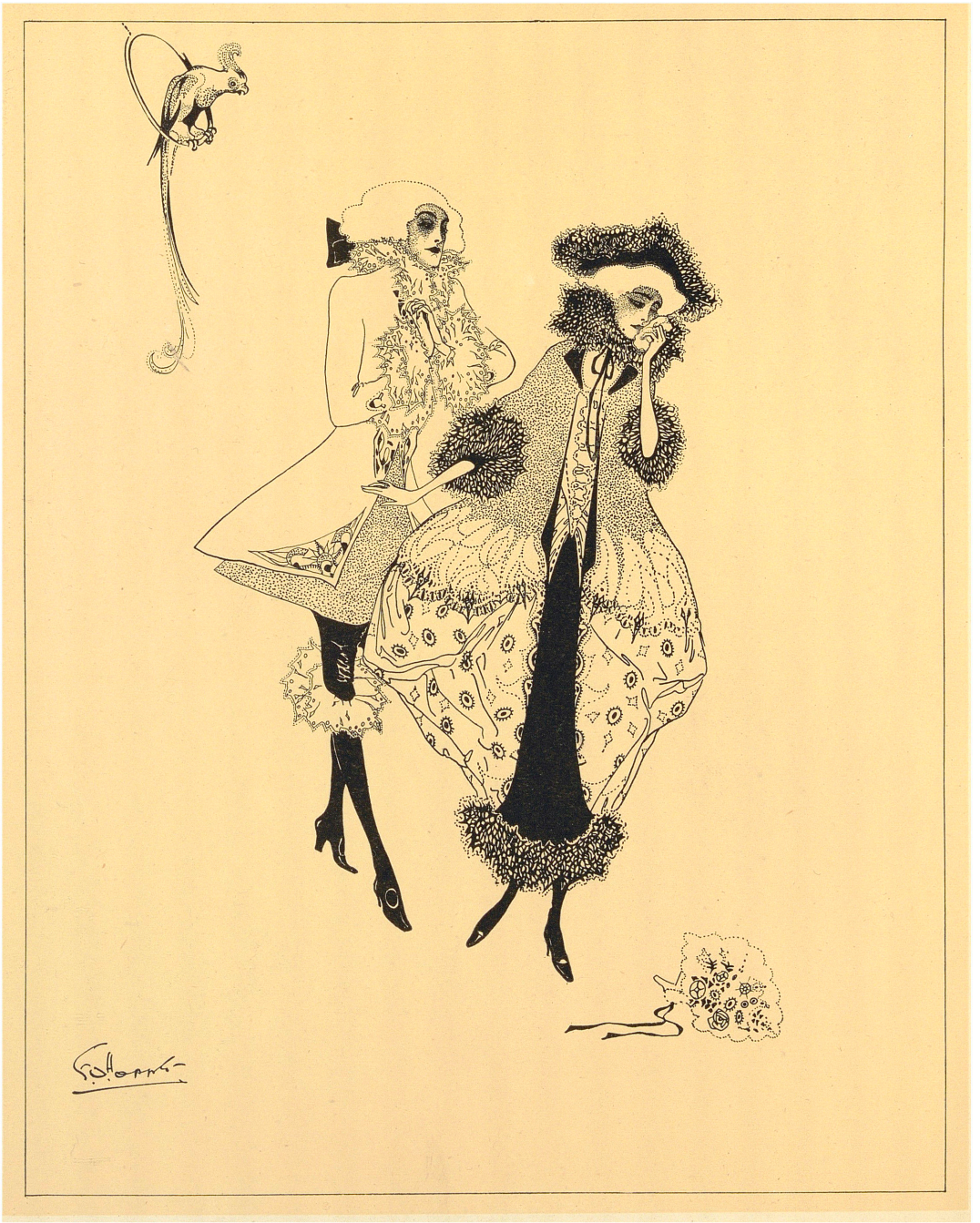
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C. Angerer & Göschl, Vienna.

From a pencil drawing by R. Vodicka.

REPRODUCED BY A STIPPLE BLOCK.



John Swain & Son, Ltd.

CAPRICE I.

Drawing by E. O. Hoppé.



John Swain & Son, Ltd.

CAPRICE II.

Drawing by E. O. Hoppé.



The London Etching Co., Ltd. Elwin Neame, photo.

MISS HUGHES.



David Stevenson & Co. E. O. Hoppé, Photo.

MRS. DE CONLAY.

Inks by Shackell, Edwards & Co., Ltd.



The Arthur Cox Illustrating Co., Ltd. Thos. Lewis, Ltd.

THE LADY CHAPEL, LIVERPOOL CATHEDRAL.



THE SUNNY SIDE OF THE BRIDGE OF SIGHS.

Vaus & Crampton, Ltd.

HALF-TONE REPRODUCTION FROM PENCIL DRAWING.

By kind permission of Messrs. A. & C. Black.



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LINE ZINCO REPRODUCTION.

By kind permission of Messrs Ward, Lock & Co., Ltd.



Vaus & Crampton, Ltd.

LINE ZINCO REPRODUCTION.

By kind permission of Messrs Ward, Lock & Co.



Philipson & Son.

WOODCUT ILLUSTRATION REPRODUCED BY MEANS OF A LINE ZINCO.

"'Come hither,' said he, 'my friend; thou faithful companion and fellow-sharer in my travels and miseries.'"

DON QUIXOTE DE LA MANCHA.



The Half-Tone Engraving Co., Ltd.

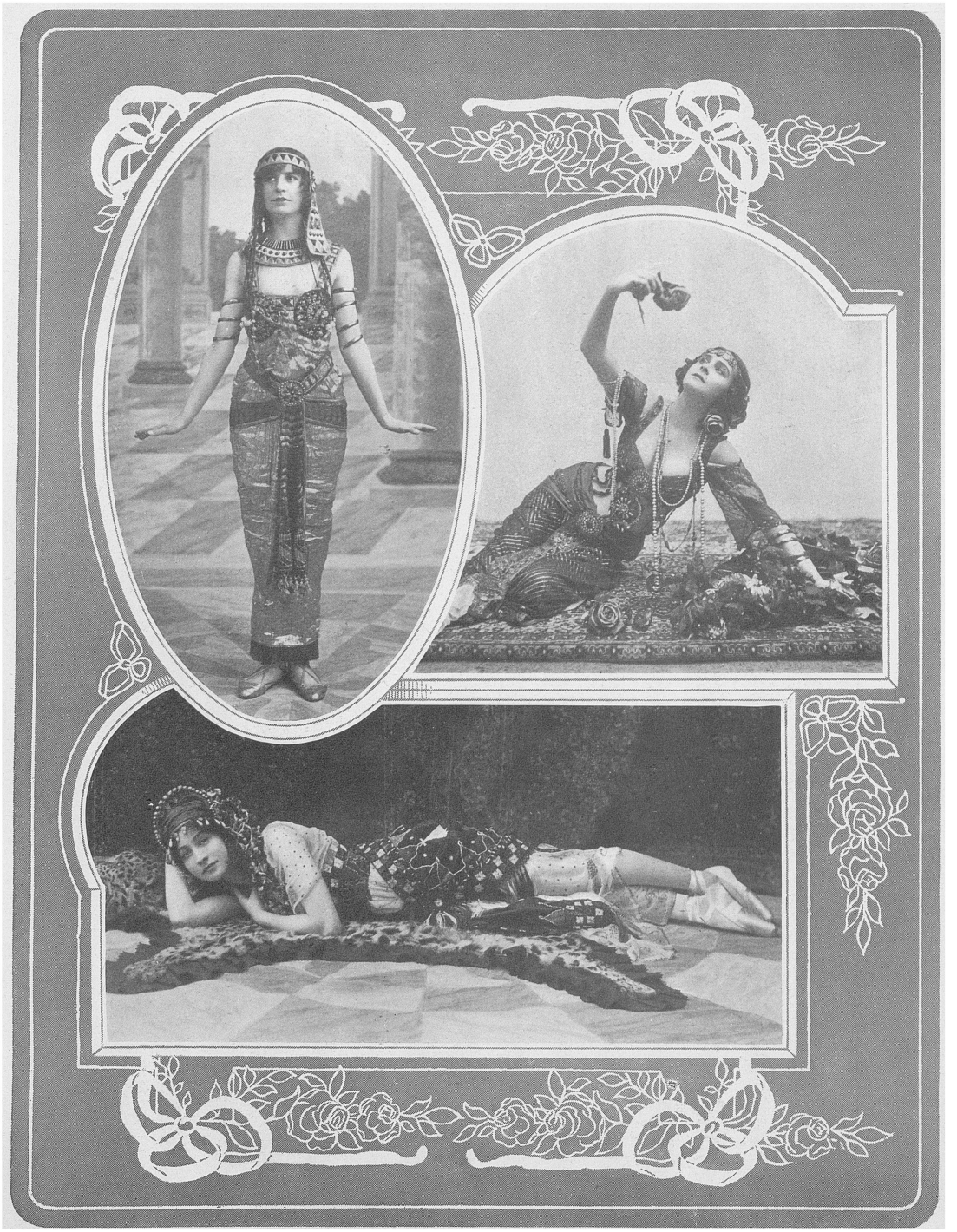
Elwin Neame, photo.

MISS FAY COMPTON.



Badoureau & Jones, Ltd. Elwin Neame, Photo.

PRINTED FROM AN ELECTRO.



T. B. Browne, Ltd.

Dover Street Studios, Ltd., Photo.

PORTRAIT STUDIES.



The Acme Engraving Co.

CHILD STUDY.



Photo and block by Benn & Cronin, Ltd.

A CATALOGUE ILLUSTRATION.

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The Half-Tone Engraving Co., Ltd. Elwin Neame, photo.

MISS JESSIE WINTER.

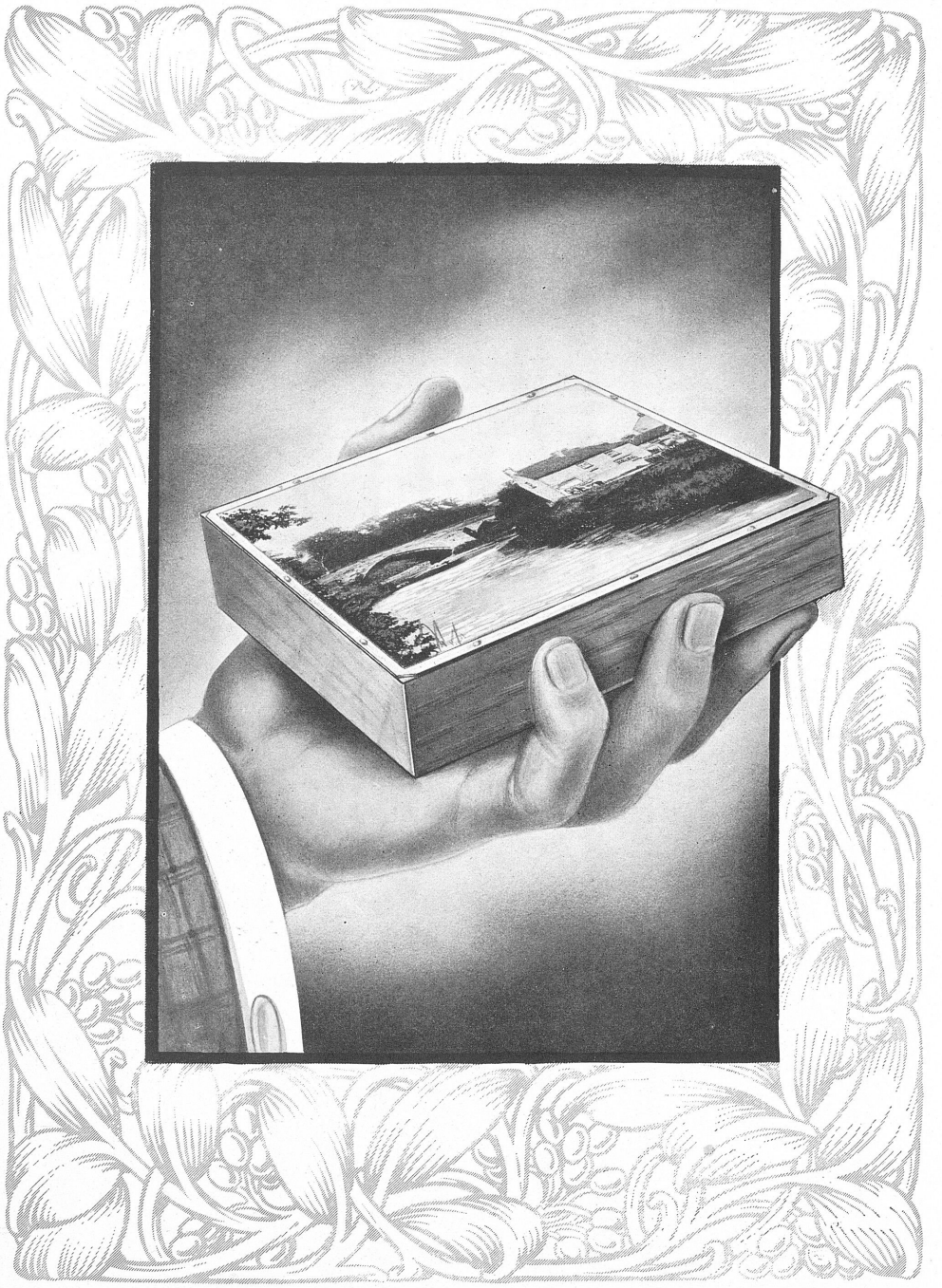
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T. B. Browne, Ltd. Harold G. Grainger, Photo.

SOME ENGLISH COUNTRY HOMES.

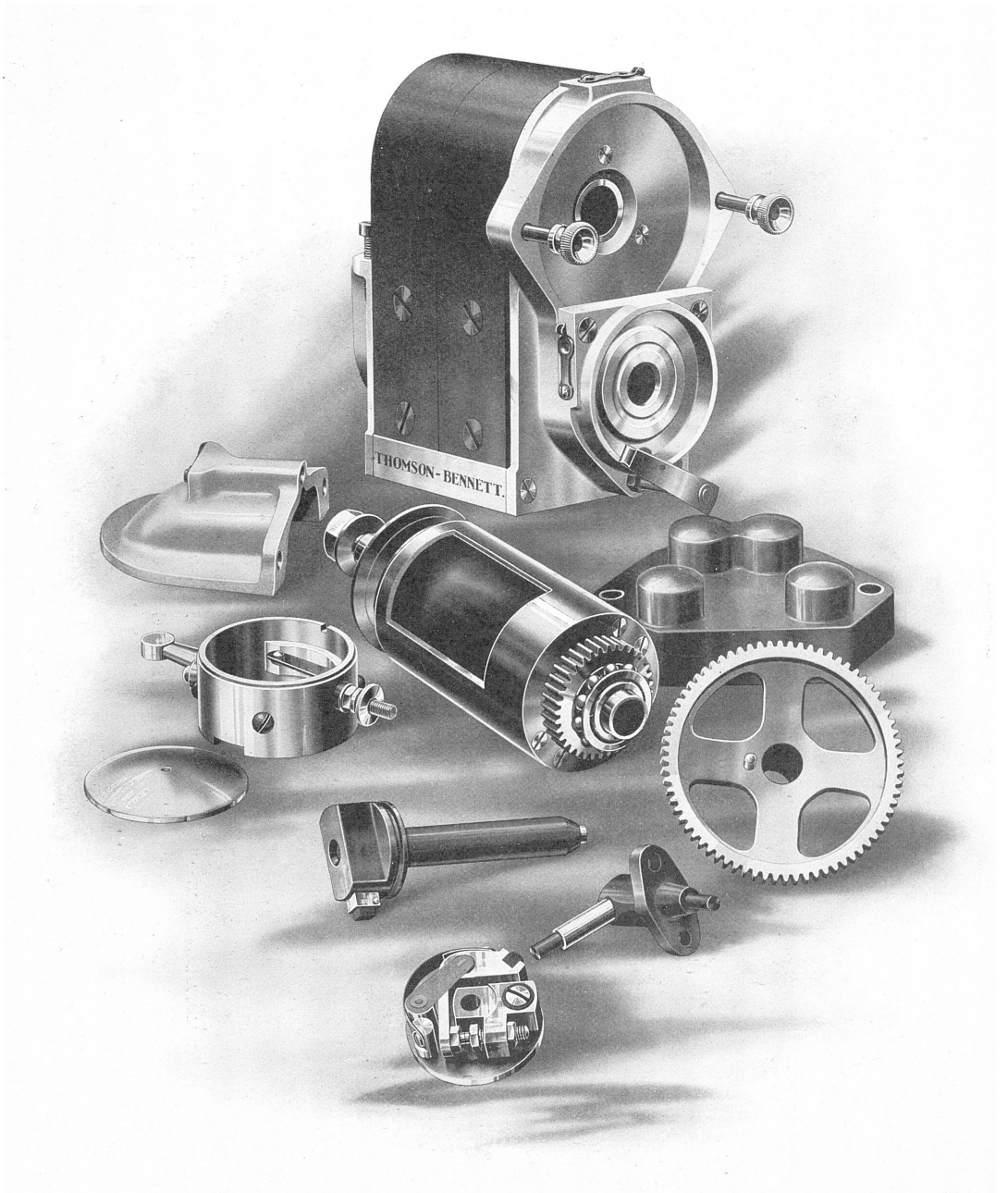
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A Bourne & Co., Ltd.

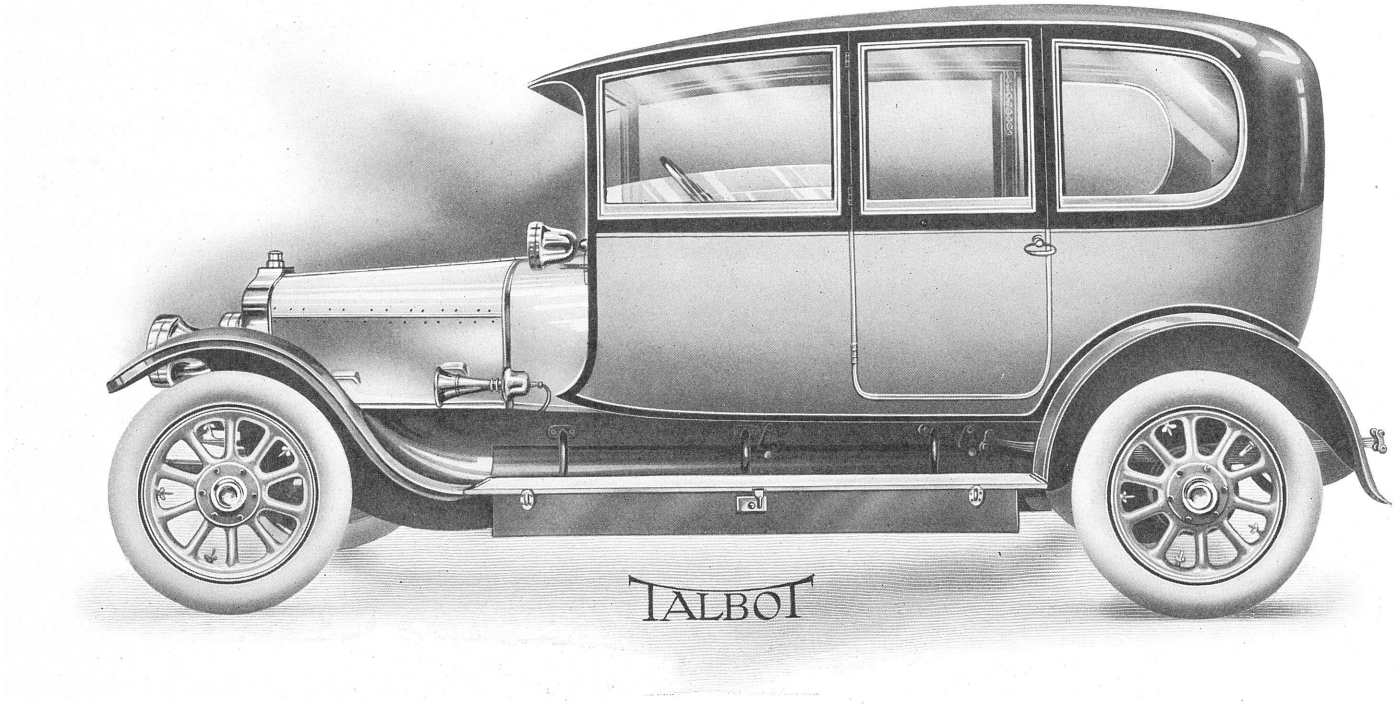
A GOOD HANDFUL.

Printed with Ullman's Double-Tone Rembrandt Brown.



The Arthur Cox Illustrating Co., Ltd.

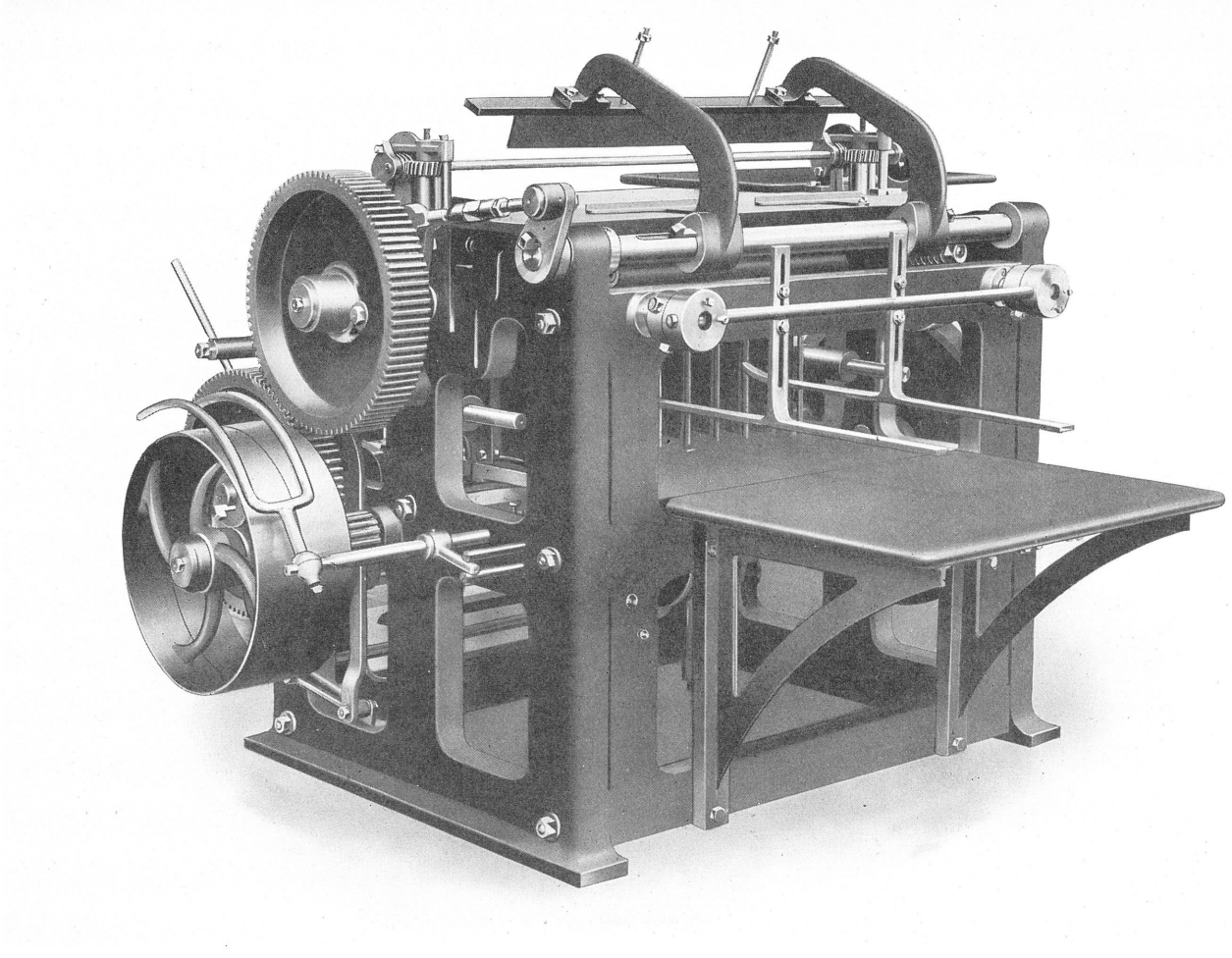
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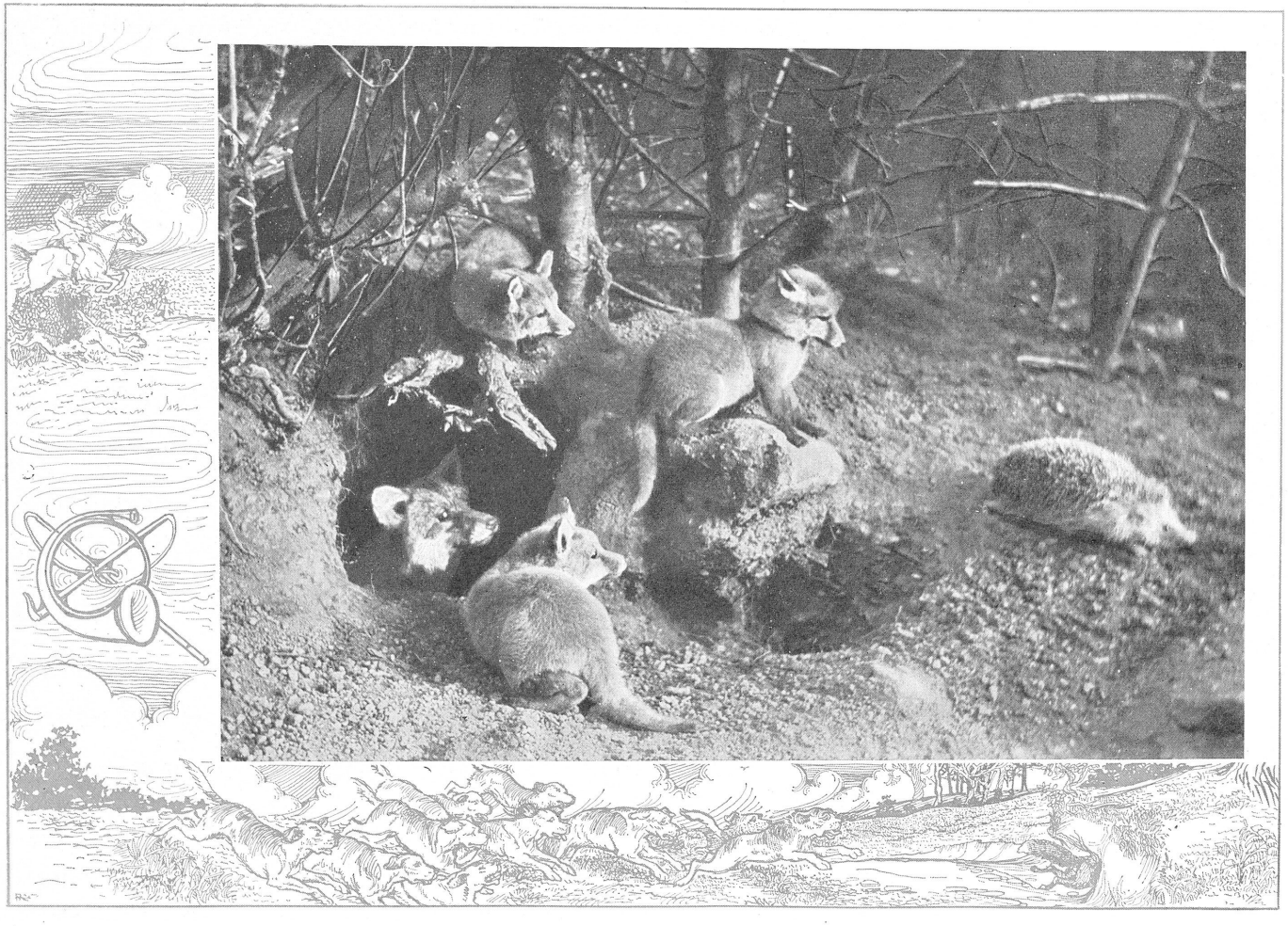
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Gilchrist Bros.

MACHINERY CATALOGUE ILLUSTRATION.



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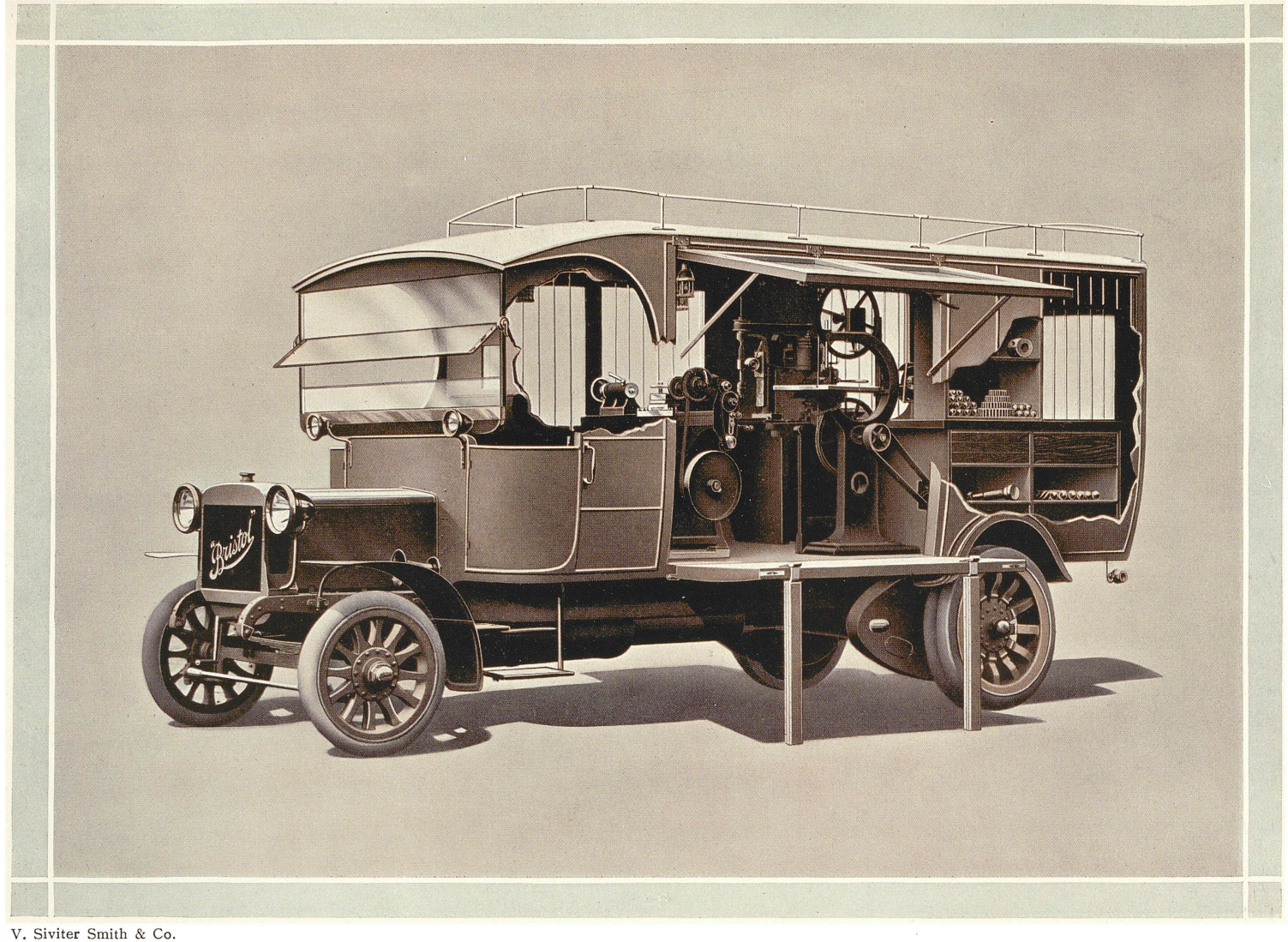
WHAT IS IT?



The Arthur Cox Illustrating Co., Ltd.

CATALOGUE ILLUSTRATION.

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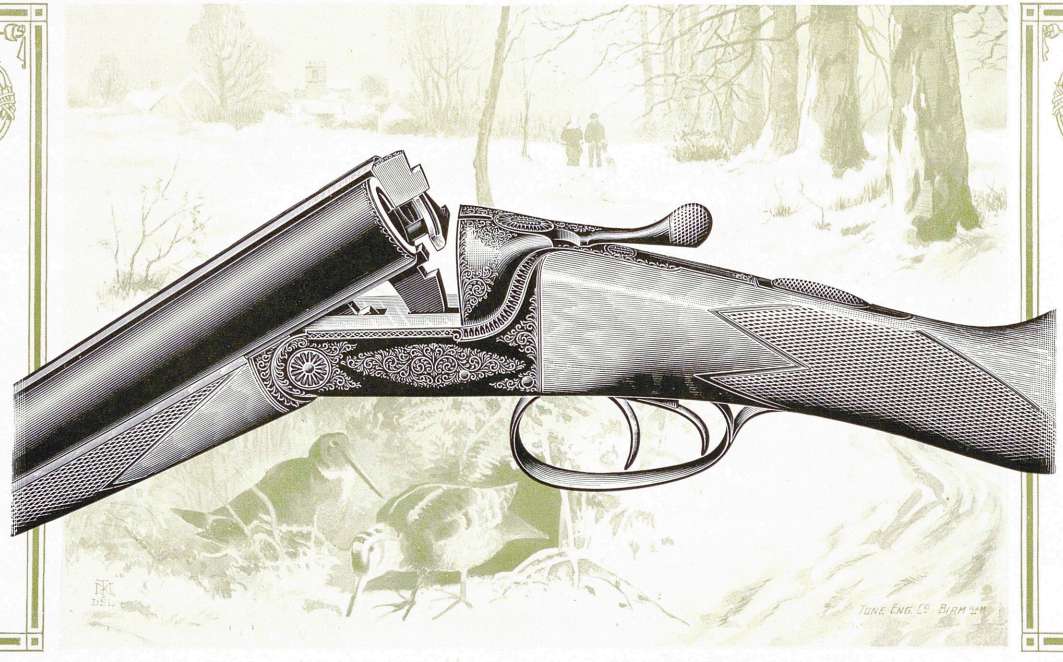


V. Siviter Smith & Co.

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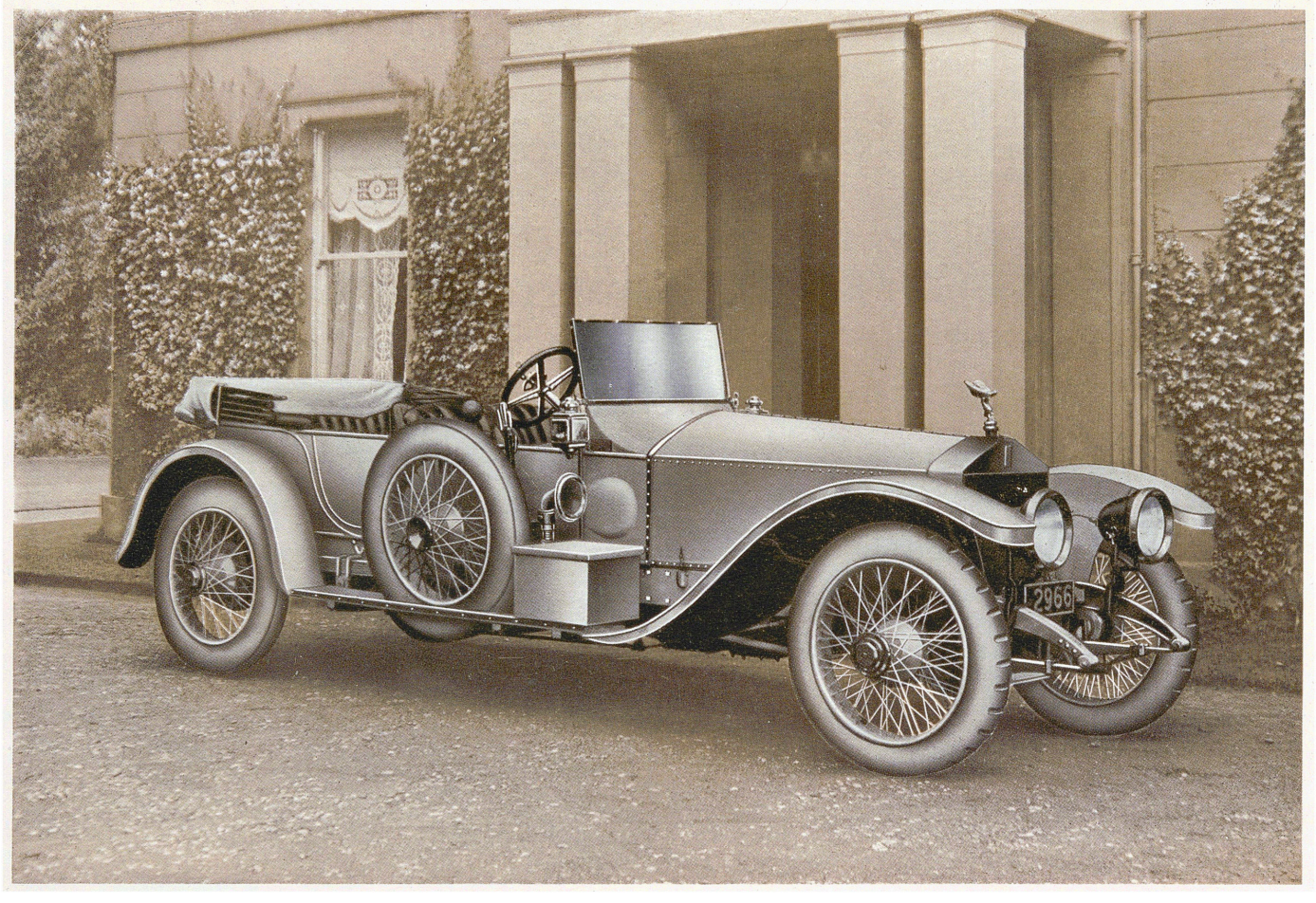
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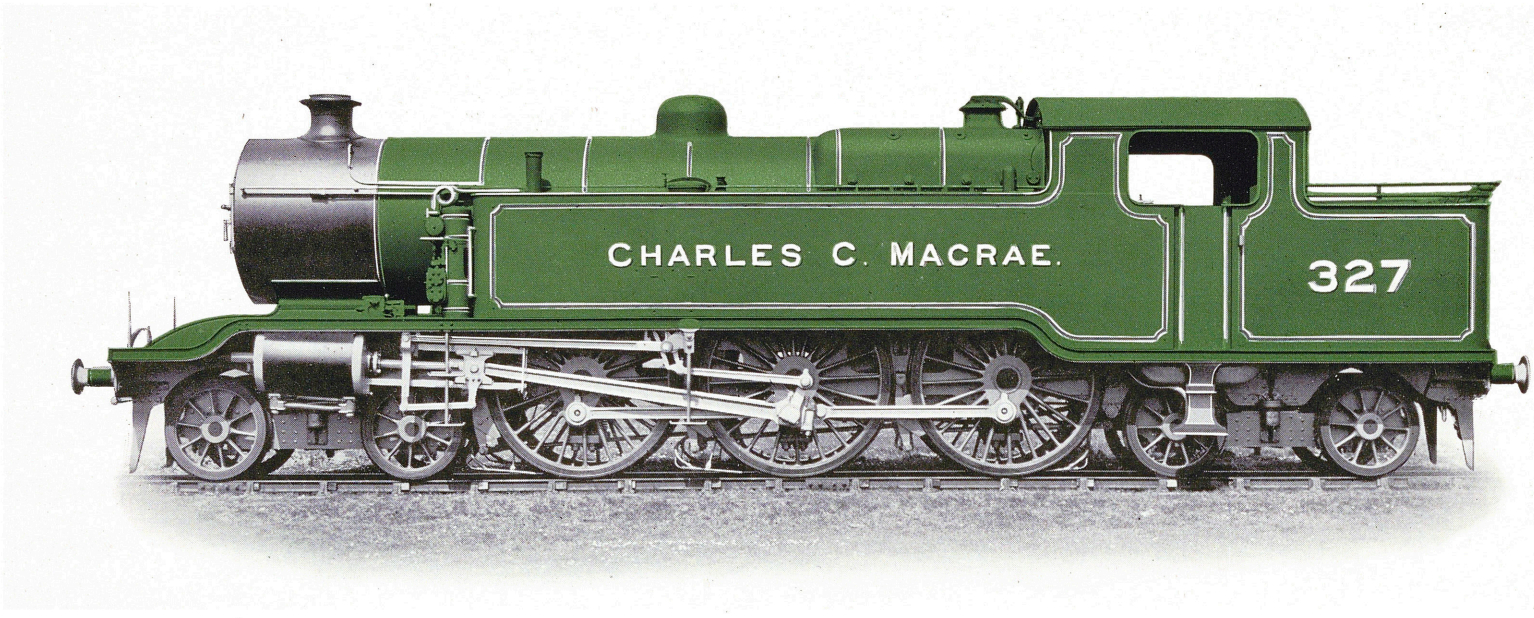
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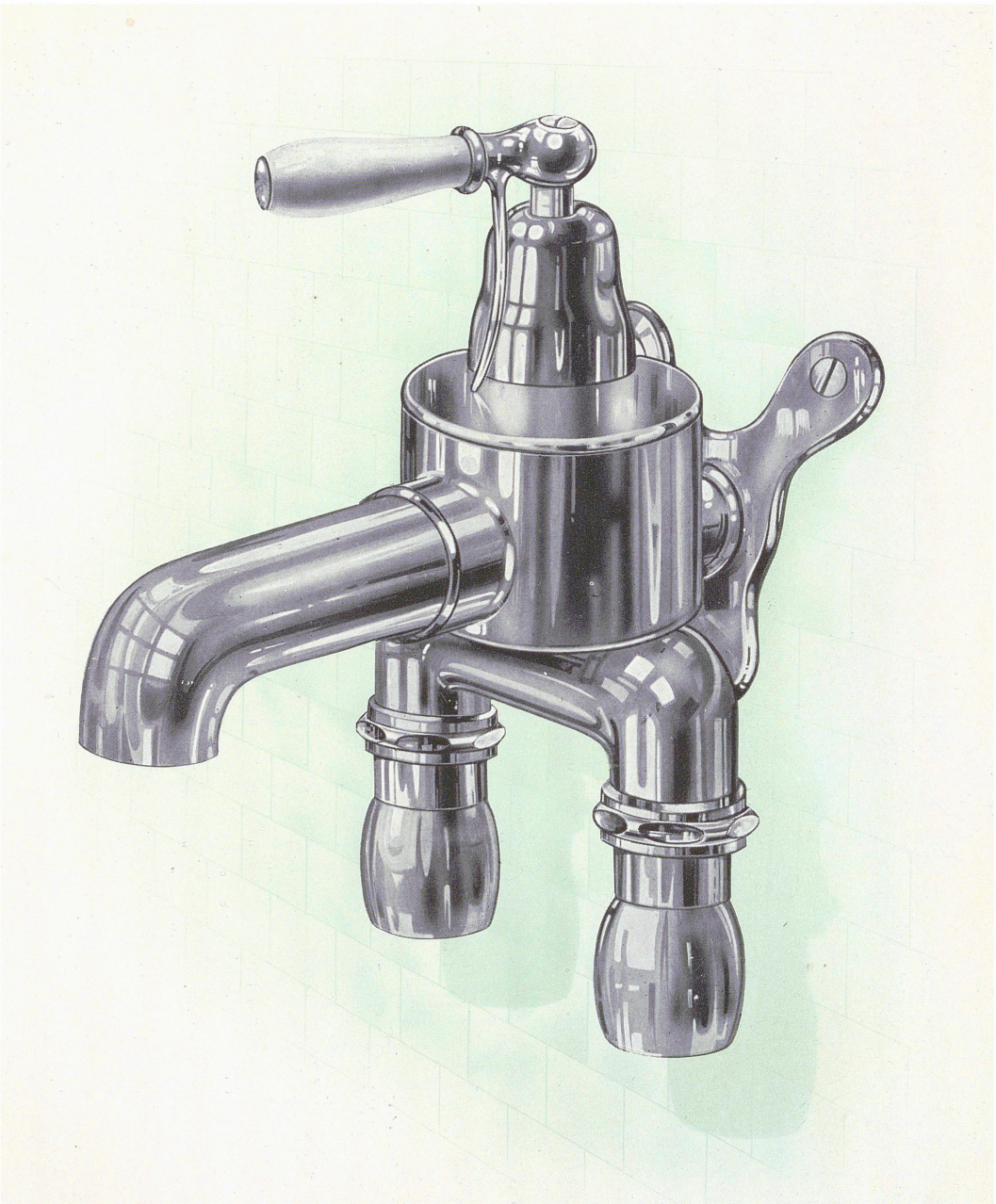
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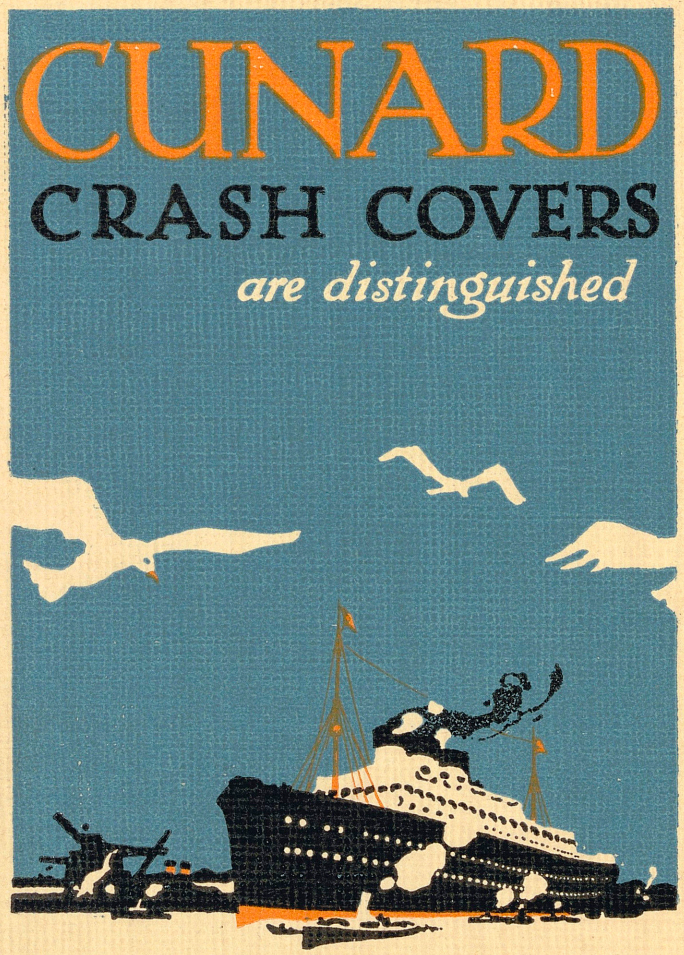
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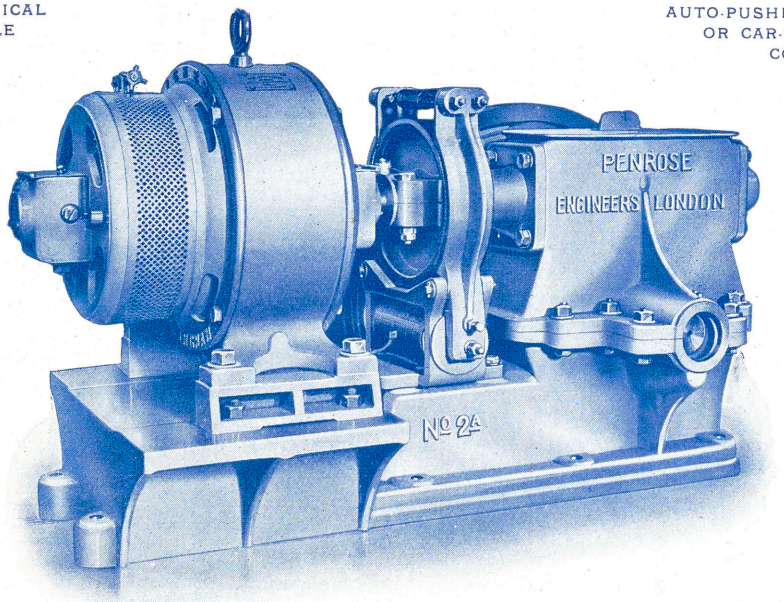
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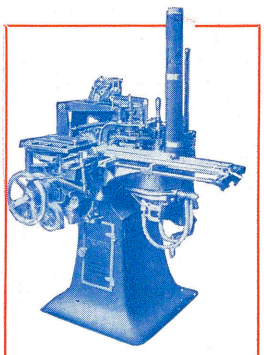
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Casts and Sets
5, 5½, 6, 7, 8, 9,
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Casts for Cases
5 pt. to 36 pt.

A RANGE OF
14 SIZES
OF TYPE

NO OTHER
COMPOSING
MACHINE
CAN DO
THIS

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A single-type casting machine, which sets and casts type in accurately justified lines, delivering the same on to a galley.

WHAT WILL IT DO?

Set straight matter at great speed, set tabular matter equally quick, and deliver it complete for printing, excepting for the insertion of brass rules. It will also give ample type for the cases.

FOR THE NEWSPAPER

Not only does a newspaper need straight matter. Advertisements known as " Smalls " have to be set ; these usually include two-line letters. The sharpness of " Monotype " type gives to every issue of the newspaper the appearance of having been printed from a founder's new " dress " of type. The corrections in the newspaper matter are made at case by a compositor while the machine is producing.

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Working in conjunction with the printer with a " Monotype," the advertising man can secure type faces and borders suited to his particular fancies.

TO ALL THREE OF THE FOREGOING

The " Monotype " casts and sets type from 5 point to 24 point, but the special attachment for casting display type from 14 point to 36 point increases the field of service.

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The quality touch in printed matter gives tone to a business. Books and catalogues must be well " dressed " to be appreciated.

THE LANSTON MONOTYPE CORPORATION, LTD.
43 AND 43a, FETTER LANE, LONDON, E.C.
BRISTOL · DUBLIN · MANCHESTER · GLASGOW

HARRIS PRESSES

FOR

OFFSET LITHOGRAPHY

Single and Two-Colour Letterpress

AUTOMATICALLY FED

THE "HARRIS" PRESSES are in the premier class for register, economy of ink consumption, and ease in running.

All "Harris" Presses are rotary, and when a lithographic printer thinks about installing an efficient offset press, the first machine in his mind is the "HARRIS."

The "Harris" Co. has been busy with big business.

Single Orders (Size of each press 34 x 48, with pile feed):

The United States Lithographic Company, EIGHT;
The Otis Lithographic Company - - TEN;
The U. S. Litho. Company (Repeat), SIXTEEN.

Write to the Printers' Machinery Department of the

Lanston Monotype Corporation, Ltd.

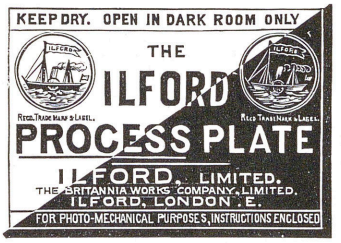
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WORLD-WIDE REPUTE FOR UNIFORM EXCELLENCE.



AVERAGE SPEED:
Watkins 16; Wynne F28;
H. & D. 25.

Specially for Line Negatives

Also unrivalled for Transparencies and Continuous Tone Negatives, for Collotype, Photogravure, etc.

Particularly suitable for Prints, Maps, Plans, Line Engravings, etc.

Wet Collodion Quality, Dry Plate Convenience

Fine Grain

Rich Crisp Negatives

Excellent Keeping Qualities and Uniformity.

Extensively used in Hot Climates where Wet Plates cannot be worked.

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THE ILFORD ORDINARY
Yellow Label. Average H. & D. 70.
THE POPULAR PLATE FOR ALL-ROUND WORK.

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MEDIUM SPEED IN STUDIO AND FIELD.

THE ILFORD MONARCH
Purple and Gold Label. Average H. & D. 525.
ACKNOWLEDGED TO BE THE FASTEST AND FINEST PLATE IN THE WORLD.

Renowned for their keeping qualities in trying climates.

Manufactured solely by ILFORD, Limited, Ilford, London, E. And stocked in all sizes by

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109, Farringdon Road, London, E.C.

Agents and Branches at Manchester, Birmingham, Paris, Milan, Madrid, Amsterdam, Calcutta, Bombay, Sydney, Melbourne, Wellington, N.Z., Cape Town, New York, Chicago, Toronto, Tokio, Shanghai, Petrograd, etc.

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PANCHROMATIC PLATE

An ideal Plate for Direct Three-Colour Half-Tone. It gives sharp dots of the requisite density and yields negatives of excellent printing quality with perfection of colour-rendering.

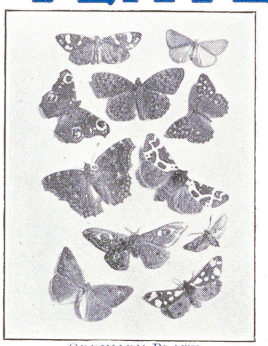
FASTEST PANCHROMATIC PLATE MADE SENSITIVE TO ALL COLOURS.

Average Speed: Watkins 250; Wynne F/111; H. & D 400.

Manufactured solely by ILFORD, Limited, Ilford, London, E.
And stocked in all sizes by

A. W. PENROSE & CO., LTD.
109, FARRINGDON ROAD, LONDON, E.C.

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ORDINARY PLATE.

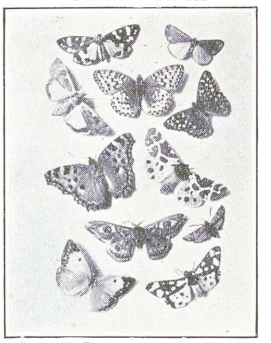
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THE FINEST PLATES OF THEIR CLASS

Especially valuable where Greens and Yellows predominate. Indispensable for Cloud Studies and Snow Scenes.

No Screens nor Light Filters Needed

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ILFORD PANCHROMATIC PLATE.

THE ILFORD
HALF-TONE PLATE

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SPECIALLY MADE for HALF-TONE WORK.

ADVANTAGES—All the good qualities of the "Process" Plate, with increased rapidity. Easy to work. Better gradation and softness than wet plate. Good dots. Clean working. Rapid exposures. In practice less expensive than wet plate. Good keeping qualities. Uniform reliability.

AVERAGE SPEED:
Watkins 45; Wynne F/45; H. & D. 70.



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Toned Art Paper.

The paper for high-class catalogue : work, : especially for the Boot and Shoe Trade.

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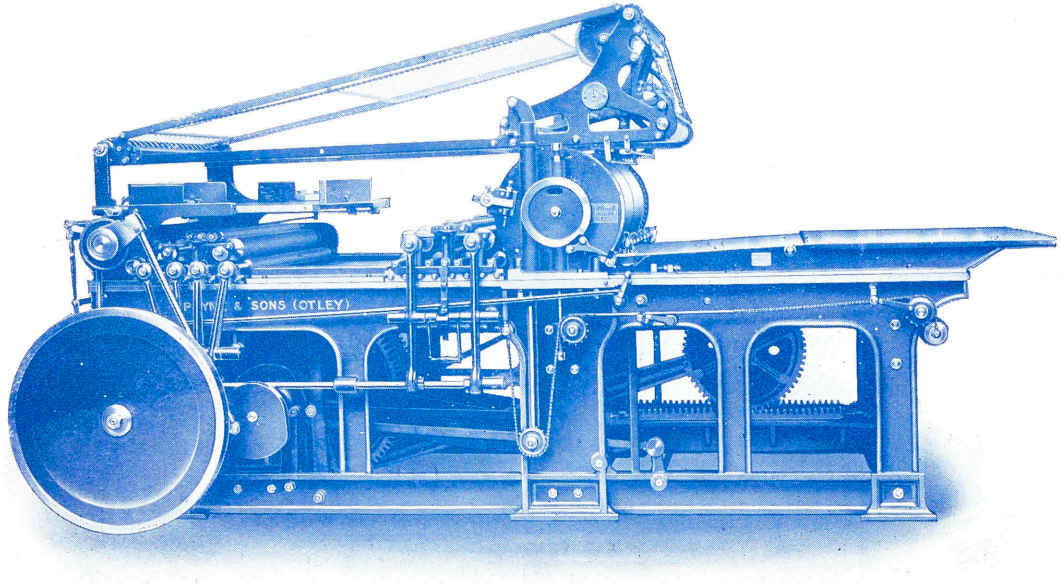
Paper Makers,

19, New Bridge Street,
LONDON, E.C.

MILLS :—Alton Mills, Eynsford, Kent.

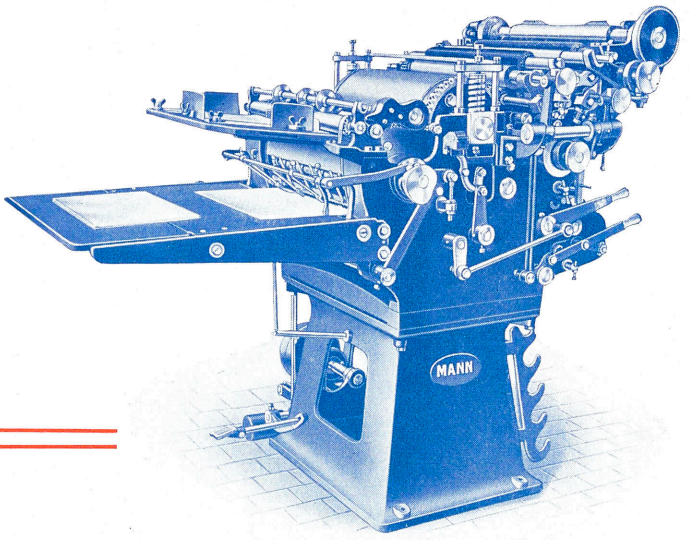
BRANCHES at Birmingham, Bristol, Leeds, Leicester, Manchester, Glasgow, Belfast and Dublin.

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OTLEY, LONDON & GLASGOW.



SINGLE - COLOUR
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OUR WELL-KNOWN
BABY OFFSET

THE MOST COMPACT
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EFFICIENT MACHINE
ON THE MARKET.

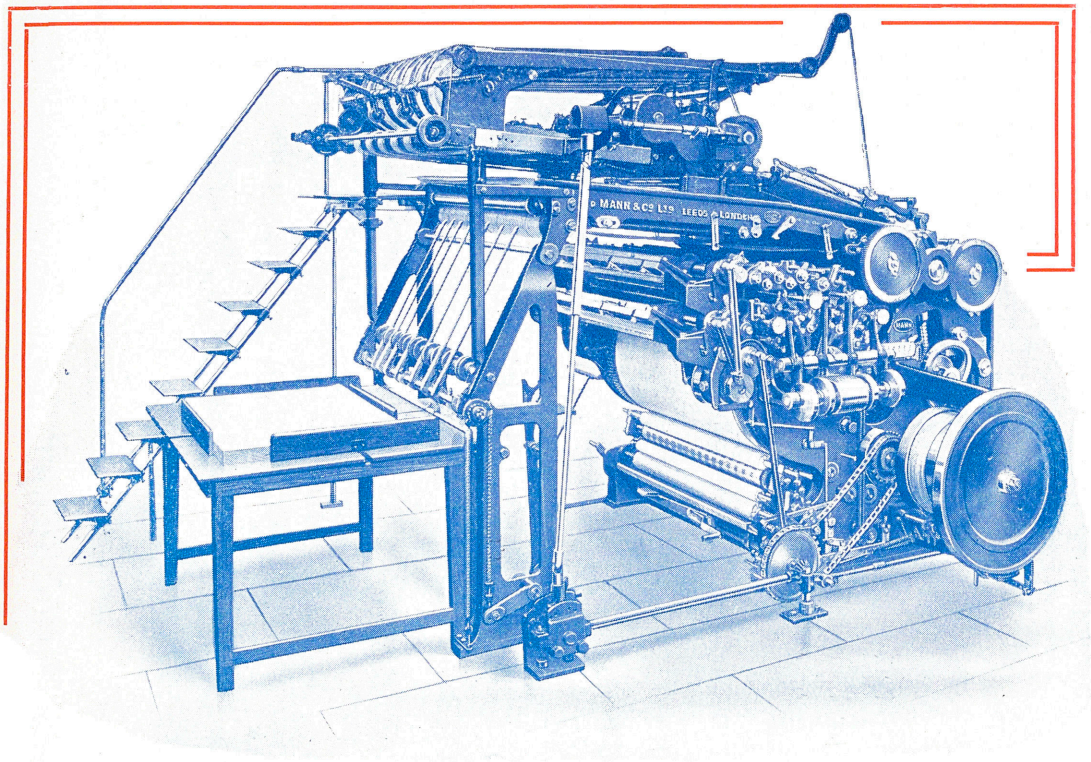
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PERFECT REGISTER
IN EITHER BLACK
OR COLOUR WORK.

OTHER SINGLE - COLOUR
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SIZES UP TO EIGHT CROWN,
CAN BE DELIVERED
— PROMPTLY. —

Works: LEEDS & OTLEY

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FITTED WITH
AUTOMATIC FEEDER
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TO PRINT ALL CLASSES OF COLOUR WORK, LABELS, SHOW-CARDS, CATALOGUES, ETC., ETC. ETC.

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SIZES:
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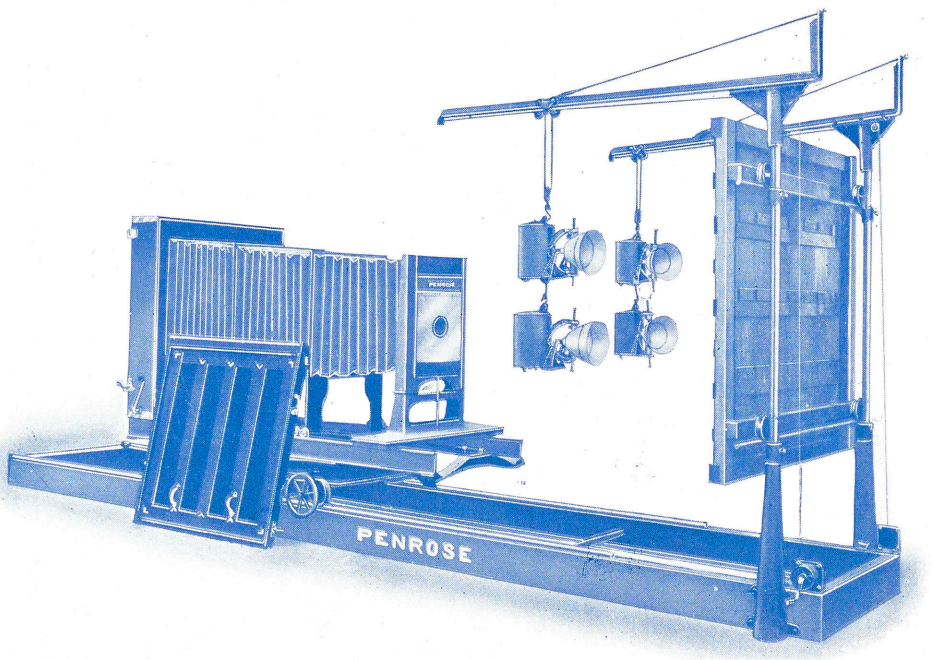
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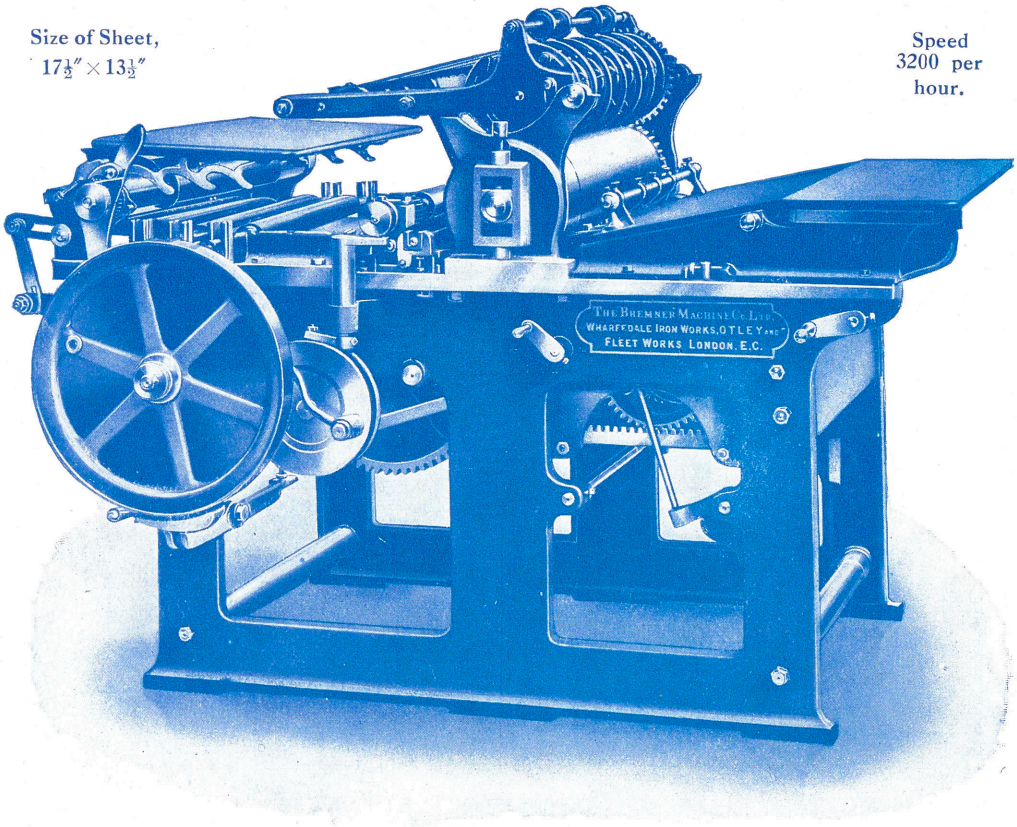
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$17\frac{1}{2}'' \times 13\frac{1}{2}''$

Speed
3200 per
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With Improved Geared Inking, Side and Front Lays.

A most Perfect Machine for all kinds of Work.

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The best reducer,
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of EVERY DESCRIPTION.

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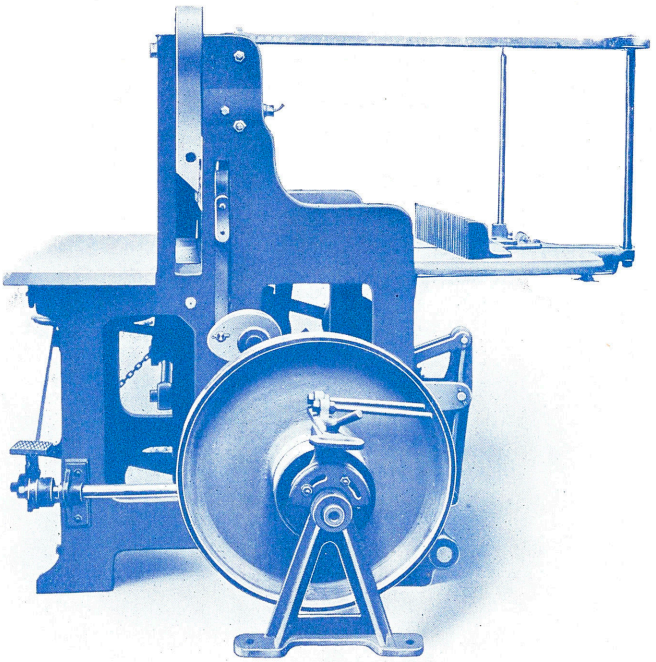
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which combines the features of typewriter and adding machine, and more

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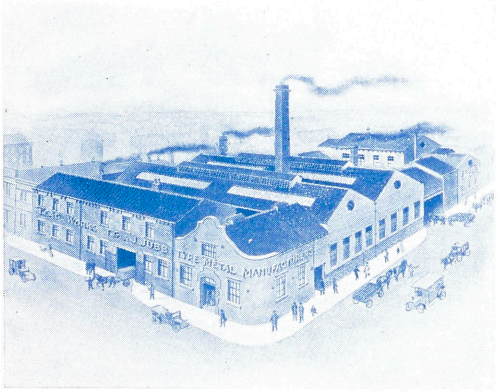
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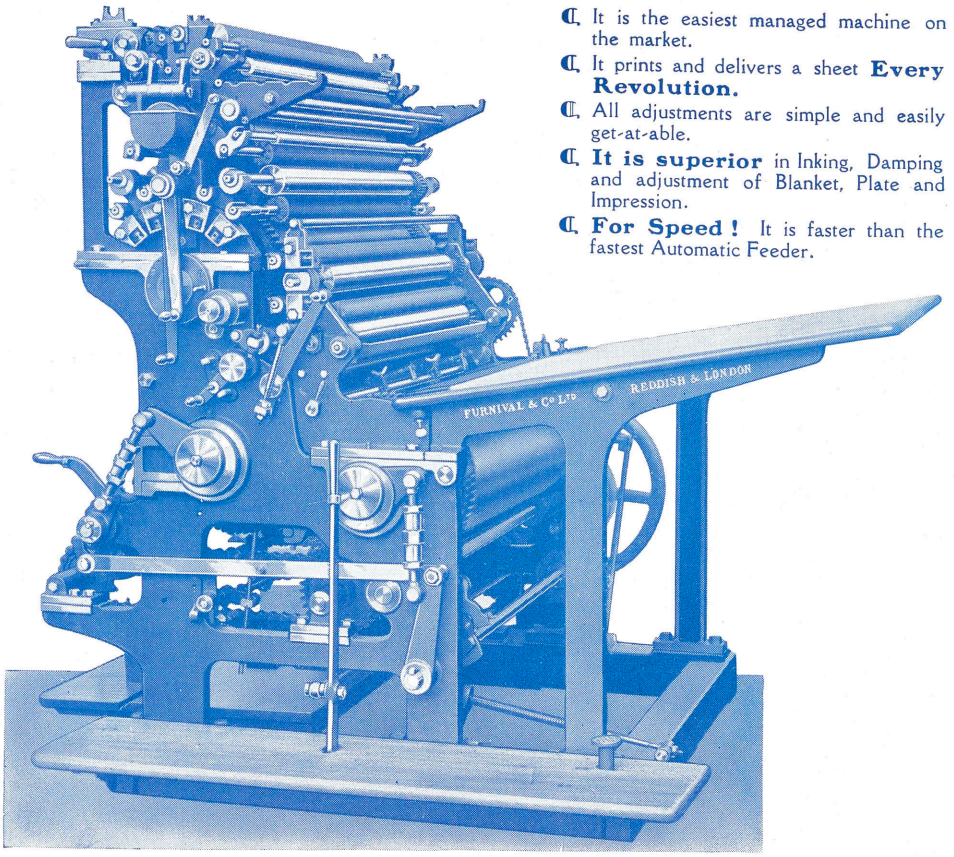
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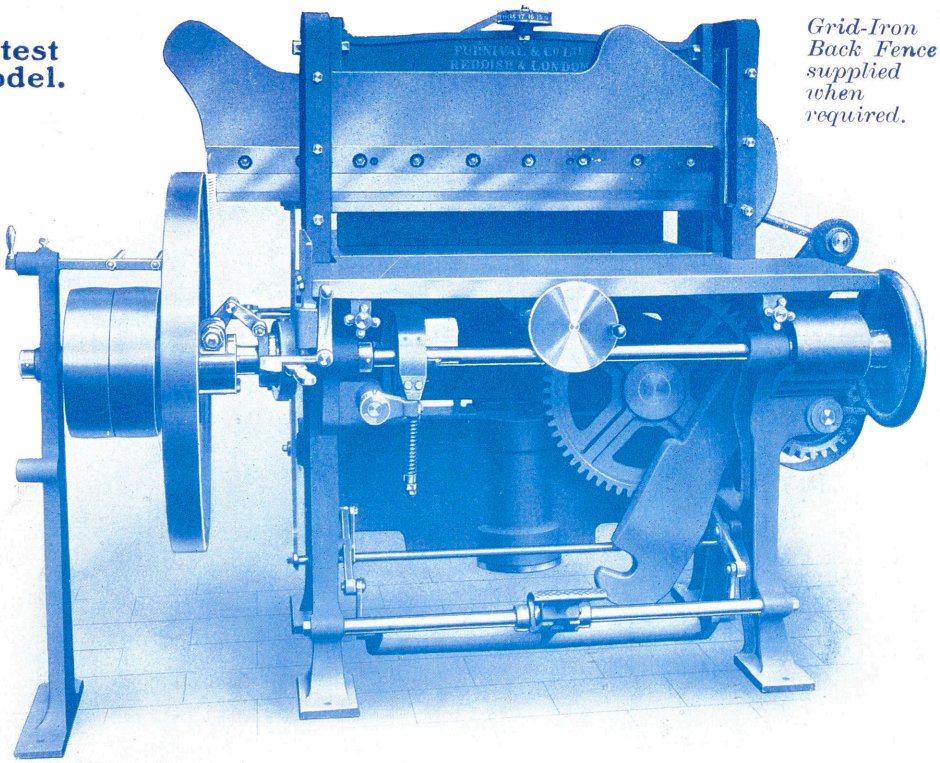
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Latest Model.



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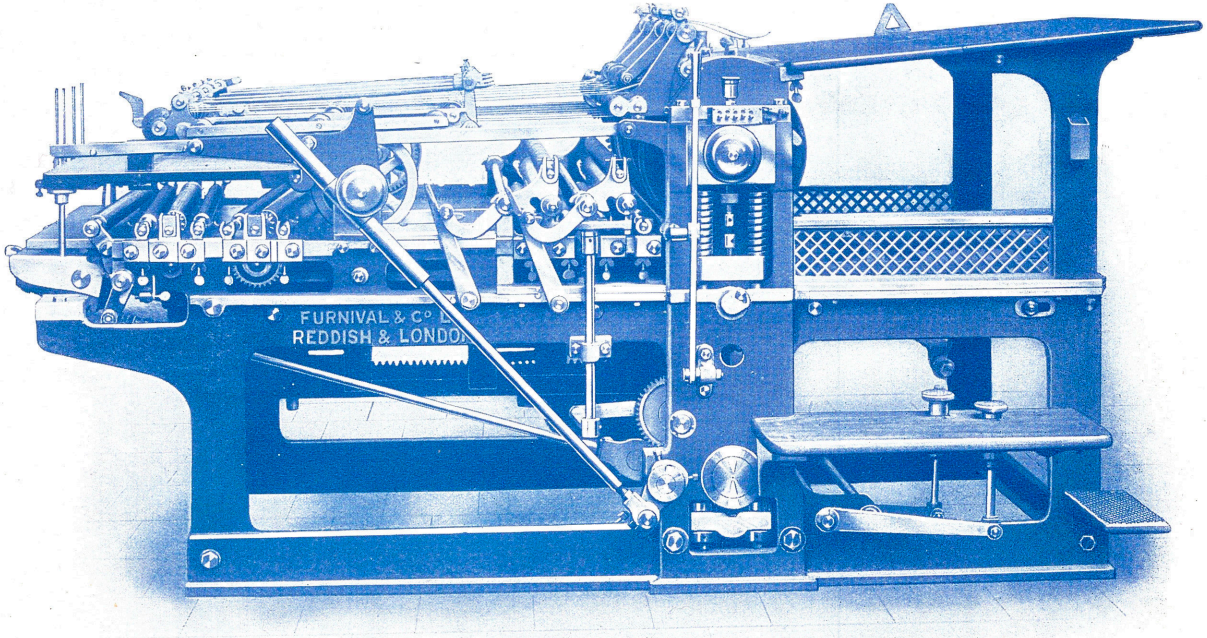
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Photochrome *Printing Inks*

All Shades of Inks for Offset Work.

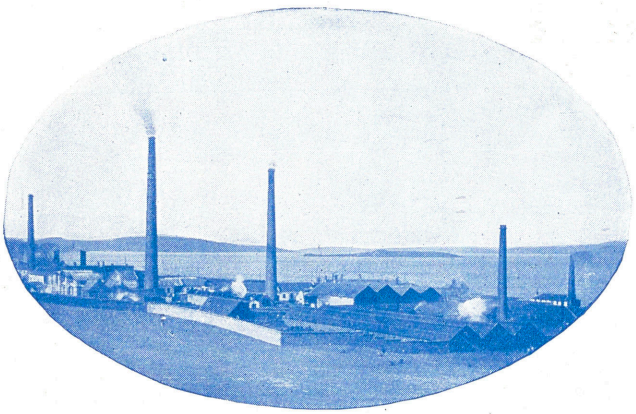
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American and British firms now using space in U.S. printing trade papers would actually be increasing the efficiency of their total appropriation for advertising by including PRINTER AND PUBLISHER, because there is no other printing trade paper covering Canada.

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THE ONLY PAPER OF ITS KIND IN THE DOMINION.

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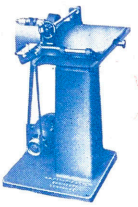
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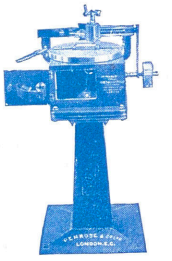


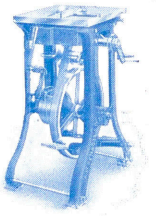
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PROMPT DELIVERY TO ALL PARTS OF THE WORLD.





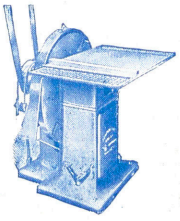
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MADE in our factory from our own exclusive designs, and proved practical by use in all the leading Photo-Engraving establishments throughout the world.

"PENROSE" on Machinery means
QUALITY
RELIABILITY
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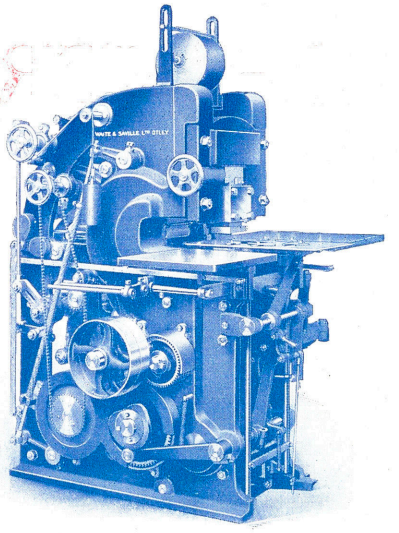


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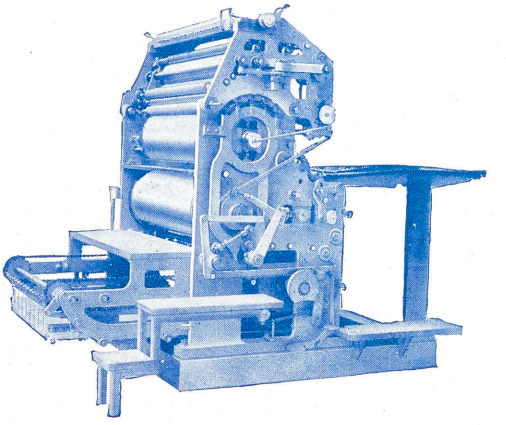
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This Machine has established a world-wide reputation as the most efficient Die Press on the market.

If you want the most satisfactory and reliable Offset Press yet produced, this is the Machine you require.



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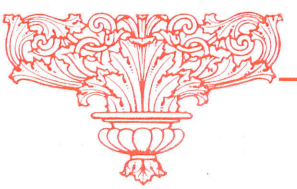
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Makers of the famous Falcon Safety Platen.

FINEST INKS

For every description of Printing and Lithography.



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STANDARD NEGATIVE
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and other Special Preparations for the Process Worker.

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Orders for
Embossing Dies, Binders' Blocks, Steel Dies etc.
ARE THE LARGEST IN THE U.K.

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ACTUAL MAKERS AND SUPPLIERS OF

LITHOGRAPHIC ROLLER SKINS
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Frank Horsell

& COMPANY LIMITED

MANUFACTURERS OF

Printing Inks

FOR ALL PROCESSES

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PARKER PRINTING PLATES

THE MOST PERFECT PLATE PRODUCED; NOT THE CHEAPEST, BUT THE MOST ECONOMICAL, BY REASON OF FREEDOM FROM SCUM AND STOPPAGES.

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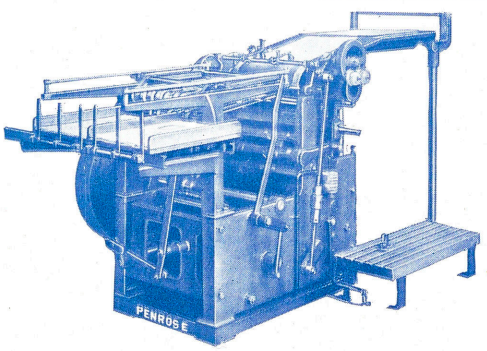
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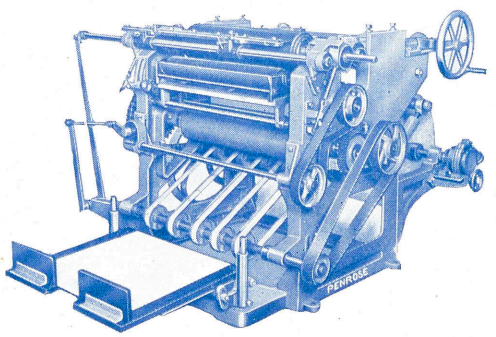
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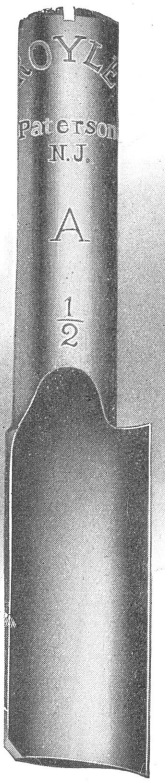
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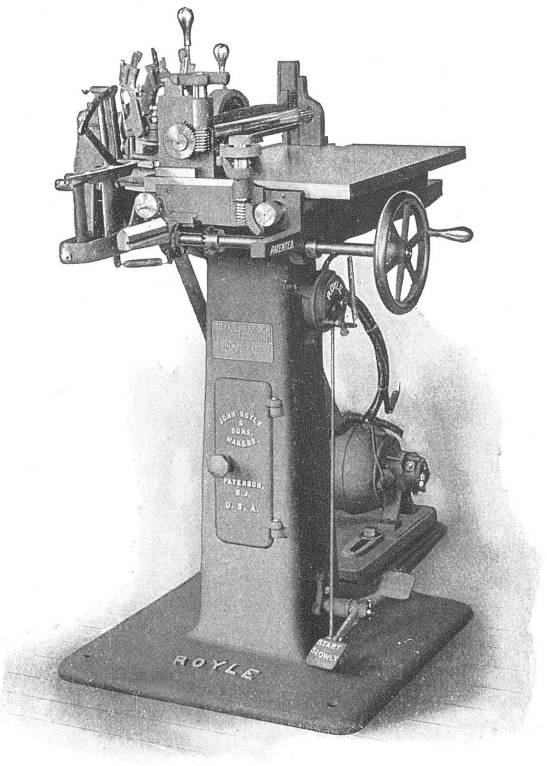
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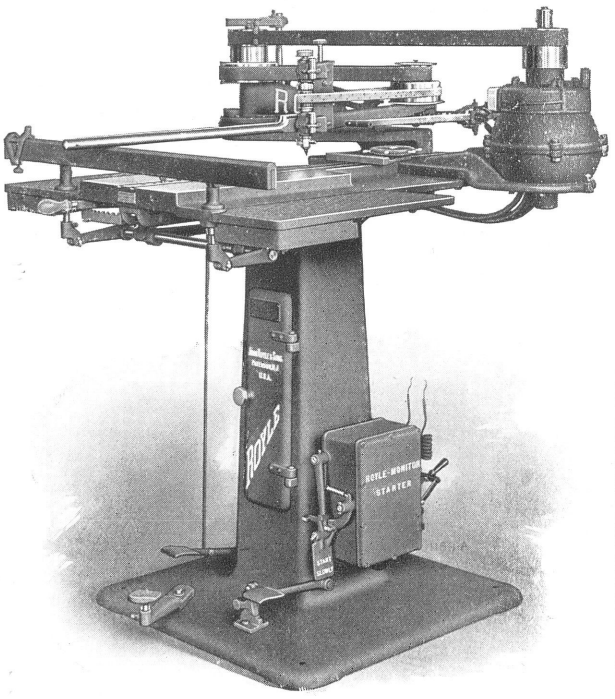
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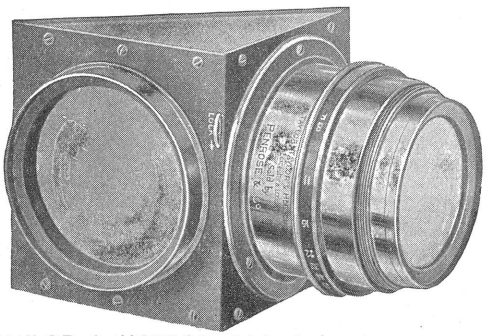
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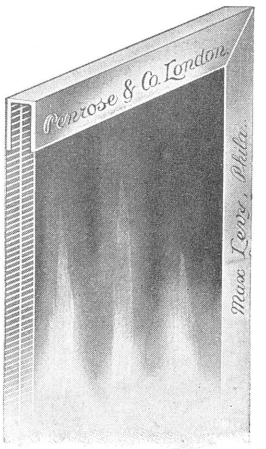
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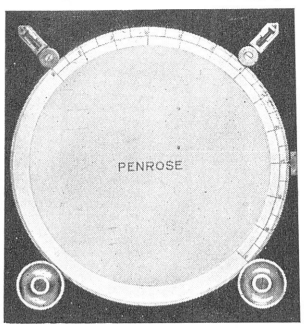
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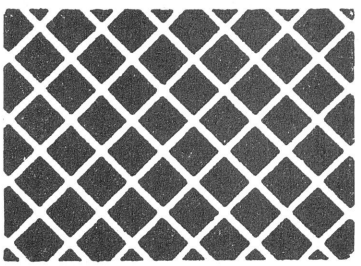


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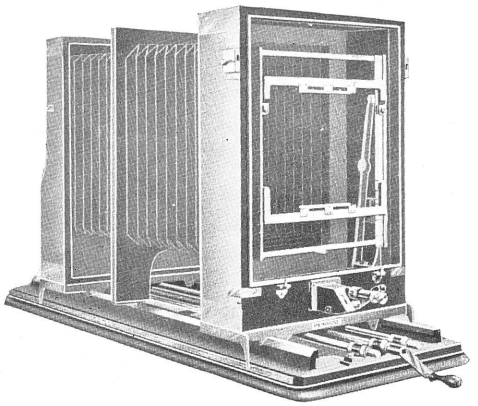
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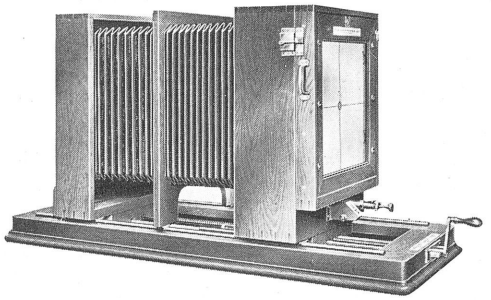


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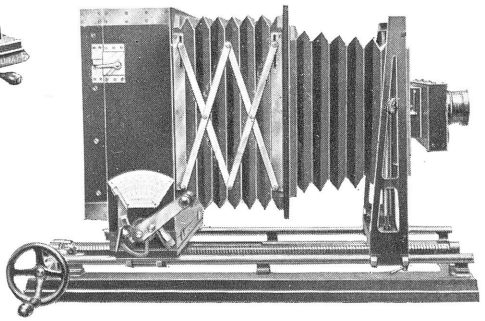
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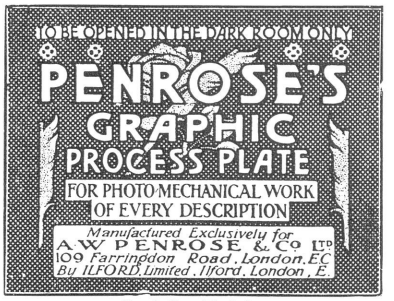
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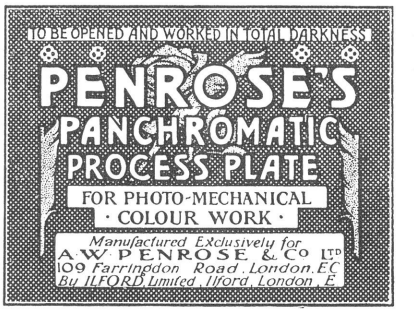
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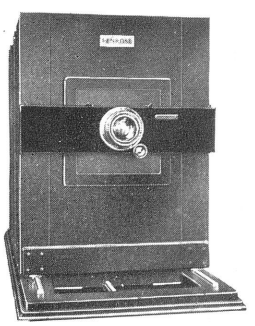
This plate is unique in its combination of high speed and great density, crispness and excellent colour rendering.

These plates have now attained great popularity, and are very extensively used by all the leading process firms; some houses using them exclusively instead of wet plate.

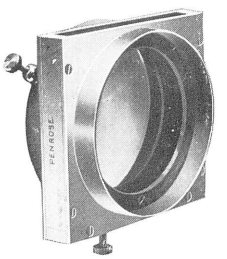
MANUFACTURED SOLELY FOR, AND STOCKED IN ALL SIZES BY

A. W. PENROSE & CO., LTD., 109, Farringdon Road, London, E.C.

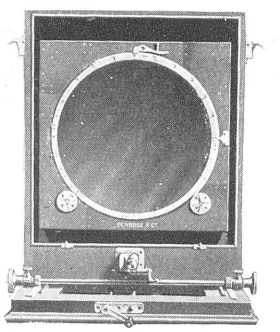
Accessories for Colour Work.



Triple Colour Filter Holder.



Metal Filter Holder.



Circular Screen Holder.

Some of our Specialities:

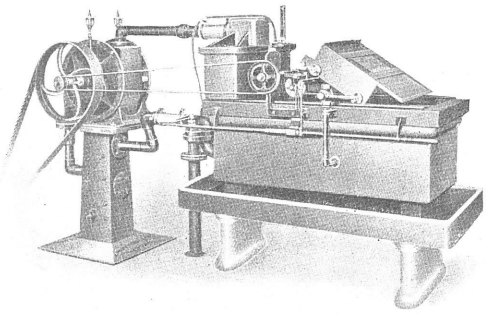
COLOUR CAMERAS.
COLOUR DIAPHRAGMS.
COLOUR FILTER TANKS.
DYES AND INKS.

PENROSE LIGHT FILTERS.
RHEINLANDER PATENT SAFE LIGHTS.
"DALITE" LAMP (for Colour Matching).

LEAFLETS ON APPLICATION.

A. W. PENROSE & CO., LTD., 109, Farringdon Road, London, E.C.

LEVY ACID BLAST ETCHING MACHINE.



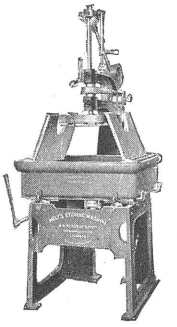
THE MOST PERFECT FOR MECHANICAL ETCHING.

For Quality of Plates, for Efficiency in Production and for Economy in time, the LEVY ACID BLAST ETCHING MACHINE is the standard. The highest developments in the art of Photo-etching have been attained by this machine.

A. W. PENROSE & CO., Ltd.,
ARE THE
Sole British Makers and Selling Agents.

HOLT ETCHING MACHINE.

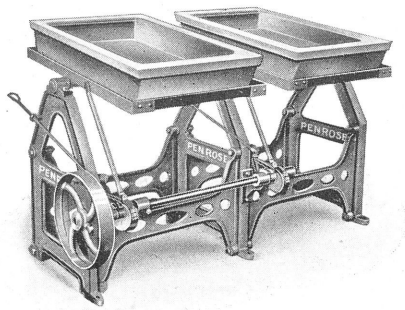
FOR ZINC OR COPPER.



This machine is suitable for small establishments, or as an auxiliary machine for larger ones. It is a Time, Labour and Chemical saver. It will increase the standard of your work. Plates Etched on the HOLT machine retain all the colours in the shadows and keep the middle tones sweet. It is a machine with which you can Etch from a Newspaper Plate up to a high-class Machinery or Catalogue Plate.

ASK FOR OUR "HOLT ETCHING MACHINE" BOOKLET.

THE PENROSE
POWER ROCKER FOR ETCHING BATHS.

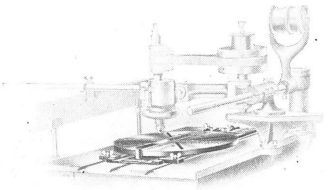


It is now a generally recognised advantage to rock the Etching Baths for Zinco Line-etching by power. This results in more uniform etching and considerable saving in time: one operator can control 2, 3, 4 or even 6 Baths, which can be erected together and driven by one motor. Each Bath can be rocked independently if desired, and at varying speeds.

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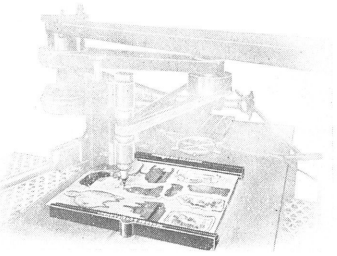
Branches and Agents at Manchester, Birmingham, Paris, Milan, Madrid, Amsterdam, Calcutta, Bombay, Sydney, Melbourne, Wellington, N.Z., Cape Town, New York, Chicago, Toronto, Tokio, Shanghai, Petrograd, etc.

ELLIPTOGRAPH ATTACHMENT for ROUTER



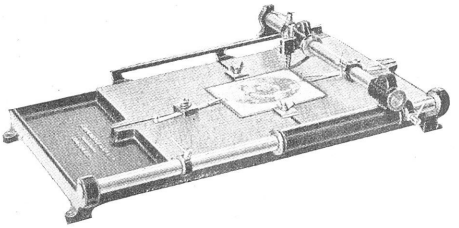
This attachment consists of practically a complete Elliptograph reduced in height to come under the Router arm, and is designed for making a bevel or rebate around oval or circular plates. It can be applied to any radial machine, such as the Reliance or the Royle Machines.

PATENT PIERCING CLAMPS FOR ROUTERS.



This extremely simple device entirely supersedes the Jig Saw for cutting out unmounted line plates and vignetted half-tones.

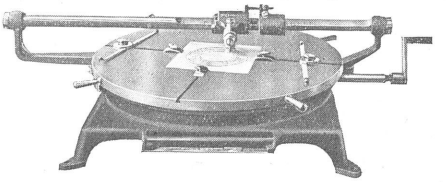
PENROSE SQUARING-UP MACHINE FOR COLOUR PLATES.



This machine is designed for squaring-up colour plates so that all the edges coincide when printed. Apart from the accuracy of the result the work is done much more quickly than by the old methods.

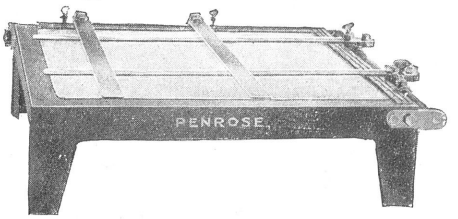
PENROSE "MEGANTIC" ELLIPTOGRAPH (Patent).

With Colour-Registering Gauges.



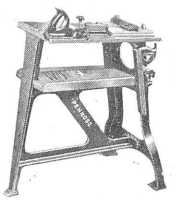
Whilst having all the features of the "Precision" Elliptograph this model is designed for larger plates up to 20×24 inches, but will take any size less equally as well as our smaller machines. A special feature of this model is the registering pointers for colour work.

PENROSE "SIMPLEX" NEGATIVE SQUARING DEVICE.



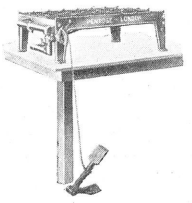
This device is designed to enable the operator to see exactly how negatives will look after cutting. All measurements are on the frame of the machine; and the straight edges are adjustable so that they are always perfectly square.

PENROSE SHOOT AND BEVEL PLANE.



For small establishments, where there is not sufficient work to warrant the installation of a power beveller and trimmer, this outfit is the next best thing. The complete outfit consists of Iron Bed, Bevel Plane with 3 cutters, Squaring Plane with 3 cutters, Back Stop, Taper Stop and Adjusting Key. Supplied with or without Iron Stand.

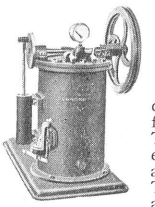
PENROSE IMPROVED BURNING-IN STOVE.



With Treadle Cut-off and By-pass.

This Stove has been entirely re-designed and re-constructed from new patterns, and every effort has been made to eliminate objections which have been pointed out in the earlier patterns. The Stove is heavier and more substantial in every respect.

THE PENROSE AUTOMATIC MOTOR PUMP FOR AEROGRAPH.



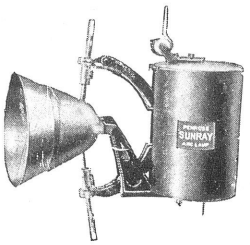
Improved Pattern.

This Pump will maintain a sufficiently high and uniform pressure for the Air Brush or Aerograph. The motor is automatically restarted and cut-off as the pressure rises above or falls below a certain force. There is no time wasted in stopping and starting the motor.

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ARC LAMPS

PENROSE "SUNRAY" ARC LAMP.



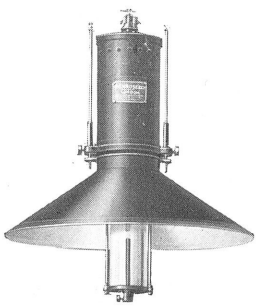
SAVES TIME AND CURRENT.

Now being used at several Technical Schools and by some of the leading Photo-Engravers.

THIS Lamp embodies the most striking departure from the various types of arc lamps put forward in recent years. Its construction and working upsets all previous deductions from the theory and practice of arc lamp working. Yet its mechanism is absolutely simple; it contains many less parts and weighs much less than other lamps now in use. The feeding mechanism is extremely sensitive and can be adjusted to a nicety to suit any voltage and current. The lamp is strongly made and is not likely to get out of order.

The **"Sunray"** Lamp reduces considerably the exposures hitherto required with the usual "enclosed" arcs, and at the same time gives a pure white light that is **invaluable for colour work.**

PENROSE'S "ULTRA" PRINTING ARC LAMP.



For exposing printing frames; this lamp has proved satisfactory in many of the largest Photo-Engraving houses, the system of placing a circle of printing frames on the floor under the lamp being economical in the matter of time and current.

PENROSE'S 'ECONOMIC' ARC LAMP.

Embodying the Latest Improvements in Arc Lamps.

It gives a brilliant, steady and highly actinic light which affords much shorter exposures, thus effecting a saving in current. The carbon consumption is also very small.

It is provided with a detachable reflector.



Prices and full particulars on application.

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PENROSE SPECIALITIES.



British Manufacture.

Aerowhite.

For use with the Aerograph and for Retouching.

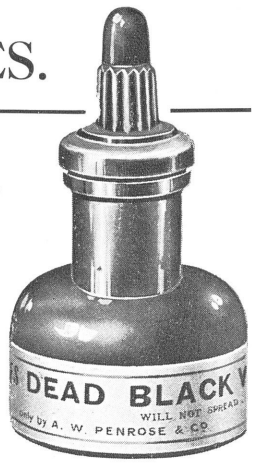
This new Aerowhite is guaranteed to possess an absolute purity of tone and extreme fineness of grain. It is free from lead or other poisonous ingredient.

2/6 per lb. Jar.
Smaller Jars, **1/0** each;
9/6 dozen

Penrose's Dead Black Waterproof Ink.

Specially prepared for drawing on photo prints, for bleaching out, and also good for blocking out. It is guaranteed to photograph absolutely black, and will not run or spread. Also good for all kinds of drawing for process.

Per Bottle .. ... **8d.**
Per doz. Bottles .. **7/0**



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Ready sensitized for obtaining a negative from a negative and a positive from a positive.

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Photo-Litho Transfer Paper.

A ready-sensitized Paper for quickly obtaining Photo-Litho Transfers from Line or Half-tone Negatives

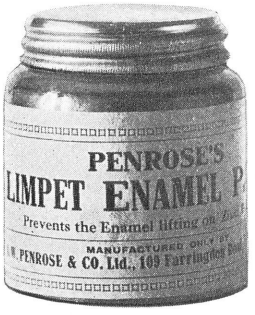
Per Roll 5 yards long × 13 ins. wide **5/0**
,, ,, 10 ,, ,, × 26 ,, ,, ... **20/0**

Sample Bottle of Special Fluid Litho Transfer Ink for use with above, **1/0.**

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(Shawcross Patent).



Penrose 'Limpet' Enamel Paste.

For preventing the Enamel lifting on zinc plates.

It is practically impossible for the acid to penetrate a plate treated with this paste, because it forms an effective resist. Anyone who has trouble with enamel on zinc should try 'Limpet' Paste.
Price **1/6** per Glass Jar.

A Varnish with many uses.

Quick-drying and acid-proof.

Various grades for
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Repairing,
Waterproofing,
Insulating,
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15/0 per gall. **8/0** per ½ gall. **4/6** per qt. or **2/6** per pt.

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GRAINED SCREEN

(patent),

for **Blockmaking, Photolithography, Photogravure.**

The Metzograph screen is now taking its place as part of the equipment of every up-to-date engraving house, and is called upon to fill a number of duties by reason of the many purposes to which it may be put with conspicuous success. This is especially true now that the manufacturer and patentee has perfected and placed upon the market a very extensive range of screens, which may be applied to other purposes than the making of ordinary Metzograph blocks.

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Small Outfits for Hand Photogravure **From £10.**

Presses, Dusting Boxes, Heaters, etc., Tissue, Asphaltum Powder, Copper Plates. "Persal" Etching Solution ready for use.

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We have secured a source of supply which enables us to meet the needs of Photo-Engraving and all Reproduction Processes. Our Chemicals are of Standard Quality and always Reliable. Prices on application.

A quotation will be submitted on receipt of your Post-card. Write To-day.

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Well-seasoned wood, planed to any desired gauge. Mahogany and Oak

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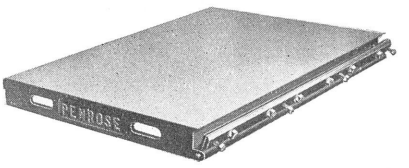
Quotations for large quantities and contracts, on application.

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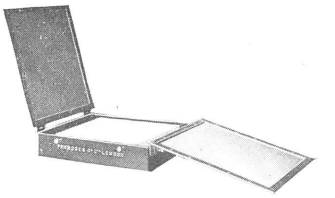
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Offset Transfer Apparatus.

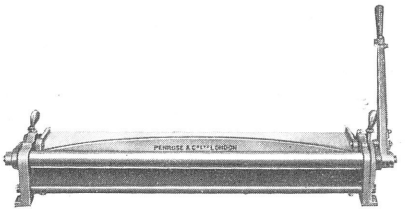
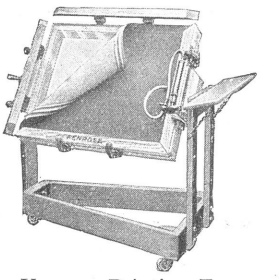
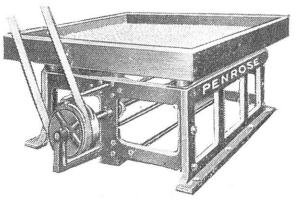


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(1914 Pattern).



Graining Machine.



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For Reversing and Name Plate Printing. Extremely simple and moderate in price.

The Penrose Quality Litho-Zinc and Aluminium Plates.

These plates are the very best procurable. They are supplied in correct sizes and thicknesses to agree with every make of Flat Bed, Direct Rotary, Offset Rotary (single and two-colour), and Tin Printing Offset Machines. Prices on application. Special quotations for quantities. We also re-grain and re-prepare Aluminium and Zinc Plates in suitable grains for all classes of work.

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Indispensable for intaglio, multi-colour, half-tone transfers and high-class commercial work, stripping for reverse transfers in perfect register. The "Ideal" plate transfer paper may be damped and heated in the usual manner, but remains always invariable, giving perfect results.

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Headquarters for all Lithographic Supplies.

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Specially Clarified and Prepared for Process Work on Zinc and Copper.

Has Superior Qualities possessed by no other Enamel.

IT is free from acid and always ready for use, without hot water or cooking.

It prints quicker, develops cleaner, and gives greater detail in fine and delicate work, and does not "lift" in the etching or washing process.

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Do not be deceived by using inferior substitutes.

The great importance of the enamel to an engraver who desires to produce superior work is realized by the Manufacturers, who have devised means for practical test of every lot of "Process Glue" before it leaves the factory.

This assures to the engraver an enamel suited to his work, and he will not waste time, chemicals or plates if he uses "LE PAGE'S PHOTO-ENGRAVING GLUE."

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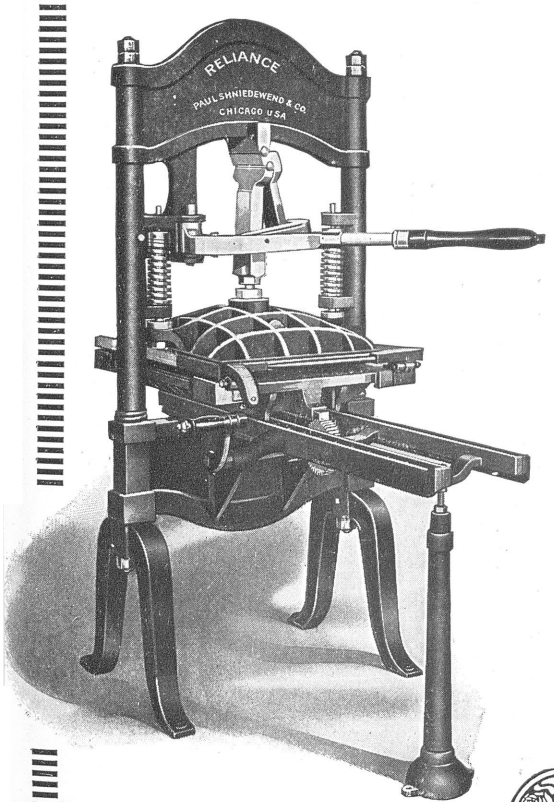
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Double Century 1a	24 × 19 ,, ..	950 ,,
,, ,, 1b	25 × 31 ,, ..	1850 ,,
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AN UP-TO-DATE TESTIMONIAL.

WORTH A FRAME

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October
Thirteenth,
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PERCY LUND, HUMPHRIES & CO., Ltd.

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The "ECLIPSE" Rollers Look Well,
Work Well and Wear Well.

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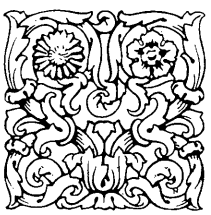
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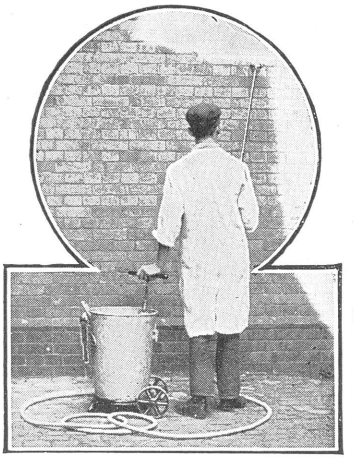
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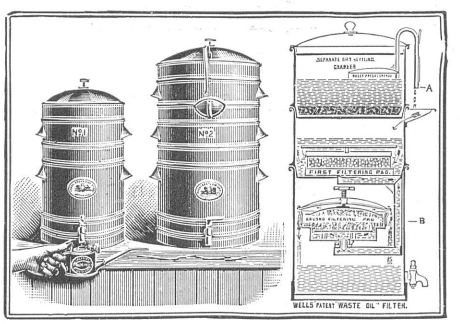
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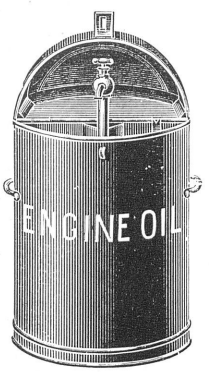
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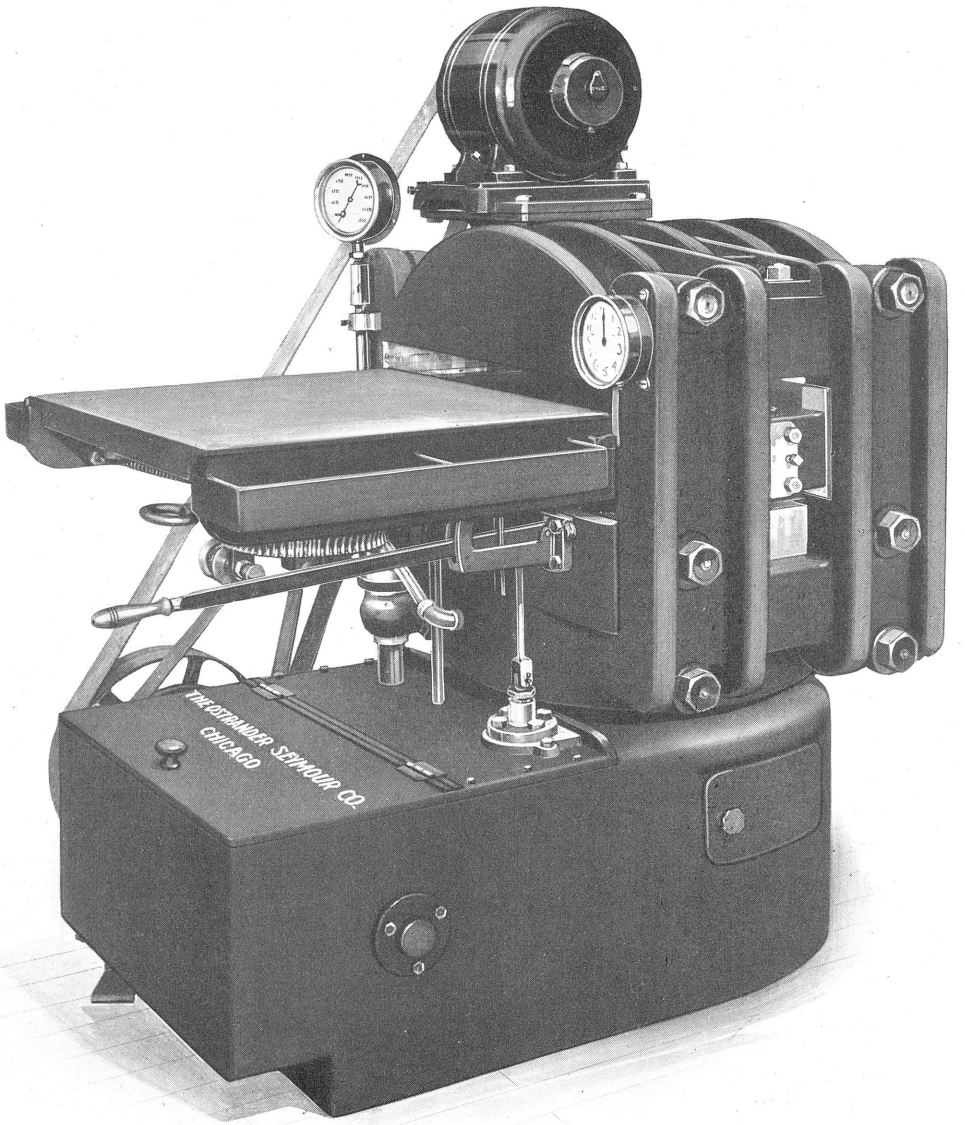
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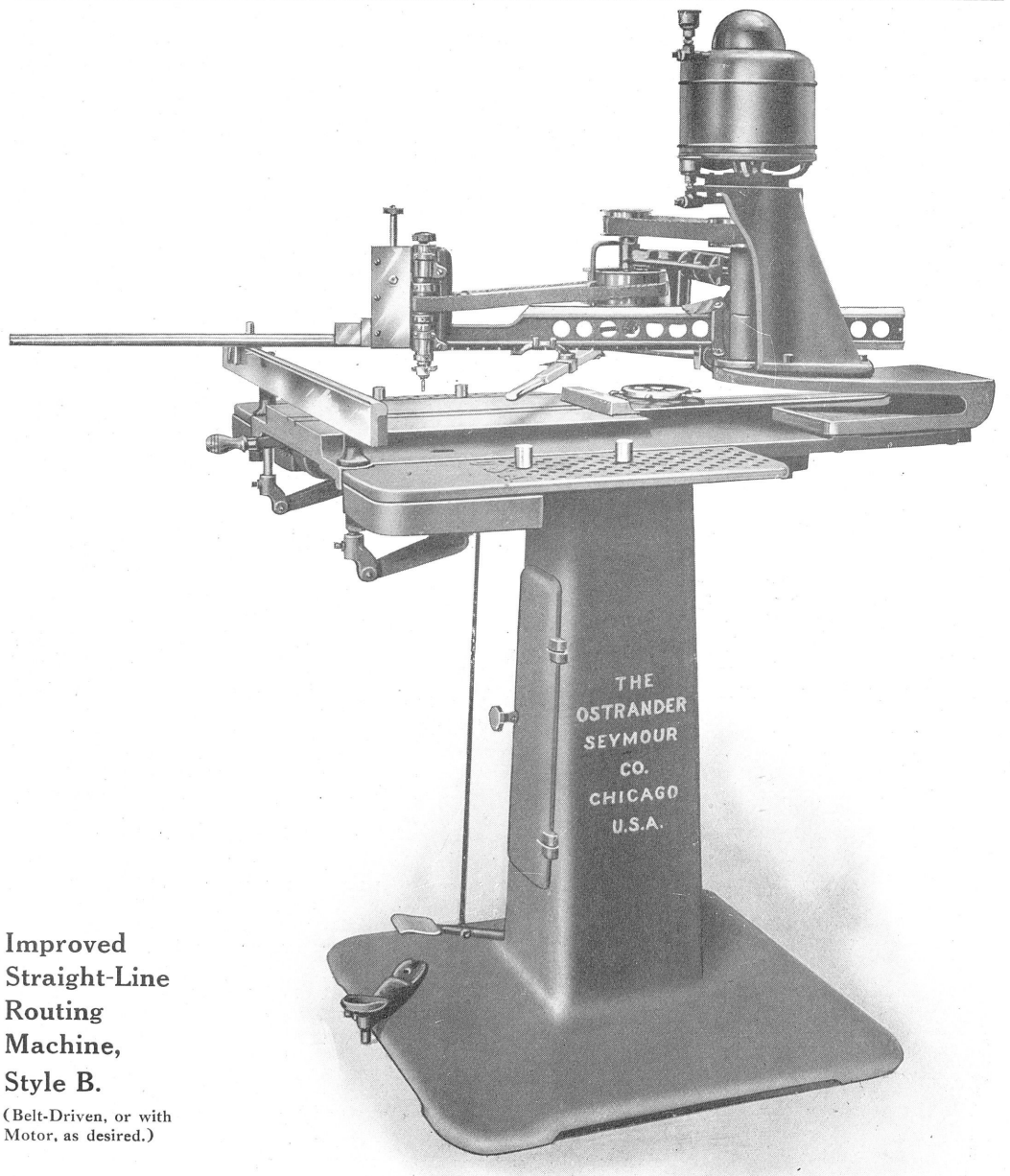
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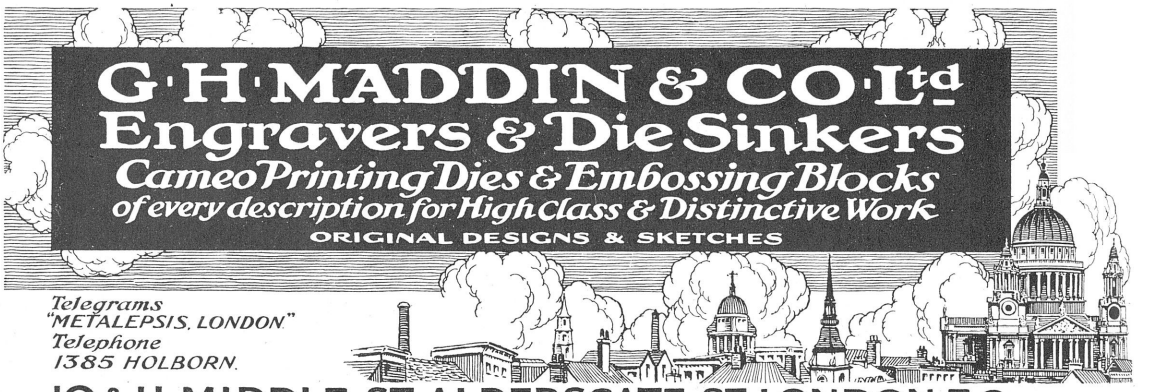
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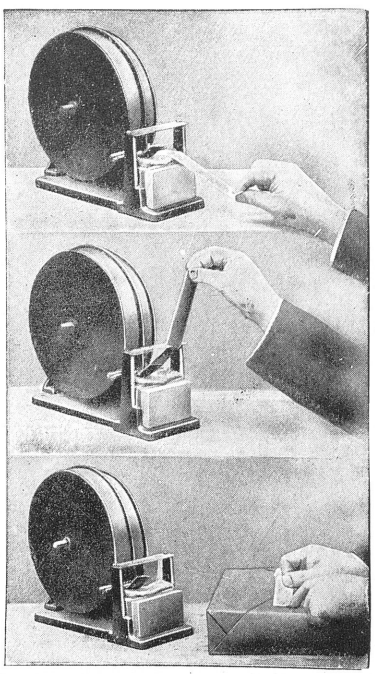
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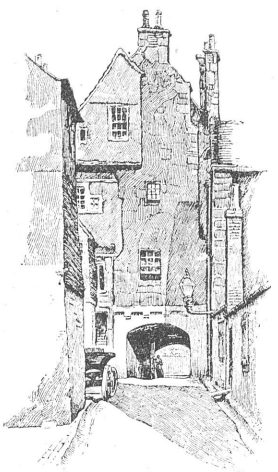
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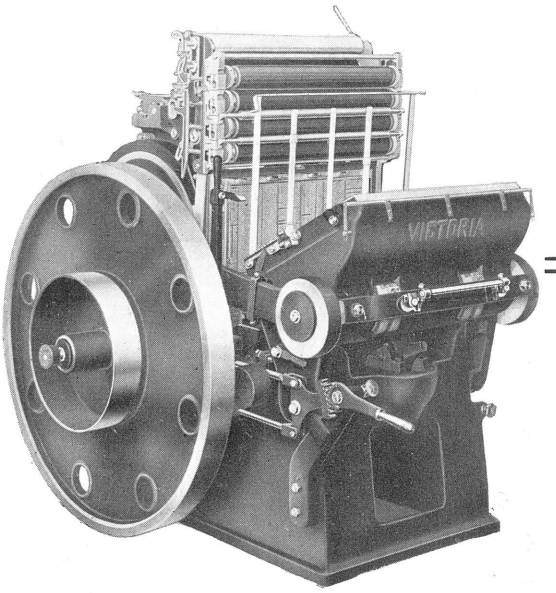
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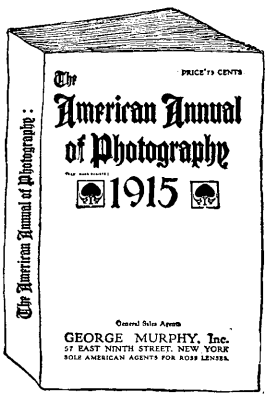
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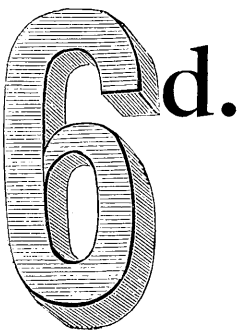
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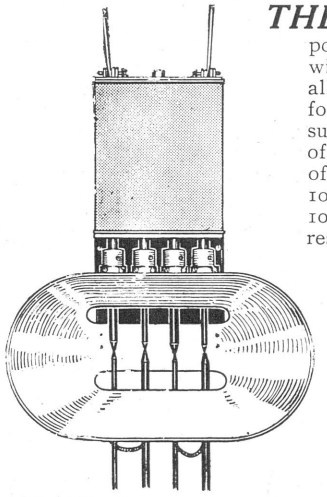
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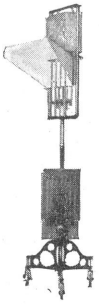
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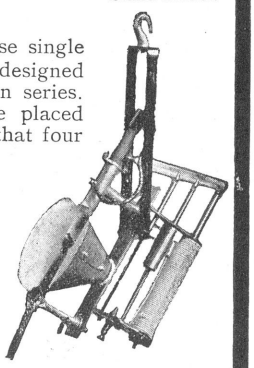
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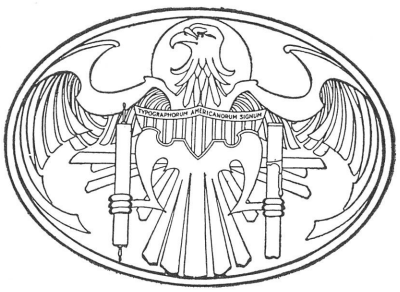
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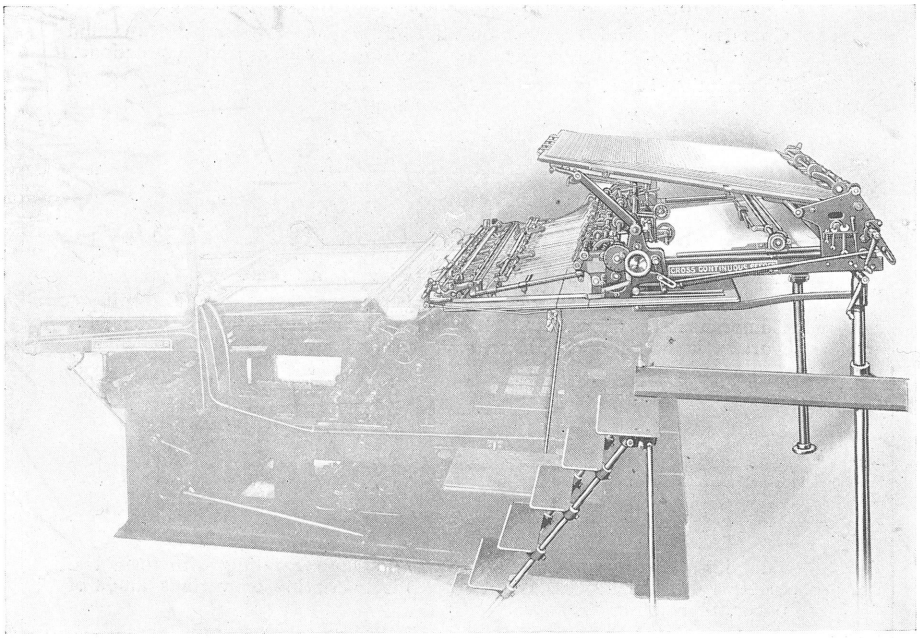
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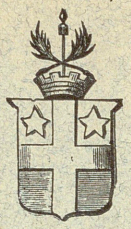
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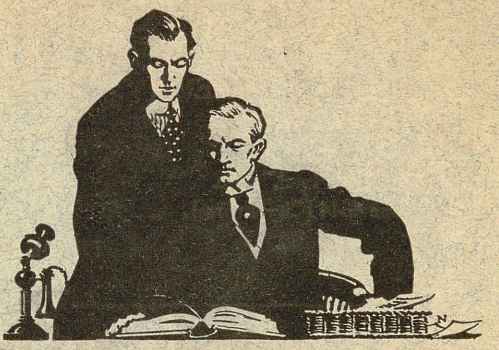
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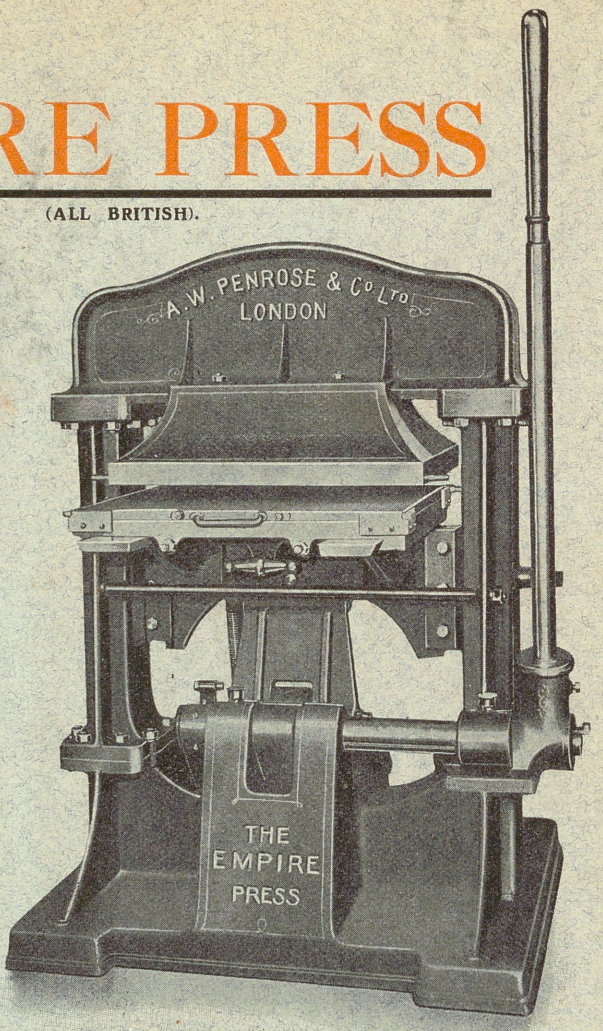
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