

ly founded together the Deutsche Photogravur A.G., in g. Dr. Mertens, however, soon separated again from his selling his shares to Mr. Rolffs. A technical co-operation Dr. Mertens and Mr. Rolffs has never existed; it was a business co-operation. Dr. Mertens, however, uses Mr. method of applying the light-sensitive preparation to the cylinder, which is said to be a very practical method and service for this kind of work. This method, we believe, application of the fish glue enamel process to cylindrical surfaces, and the photographic positive used is a film s pressed into contact with the cylinder. It is admitted . Rolffs has much to his credit in regard to the progress y photogravure.

the construction of the rotary photogravure printing press combination with the newspaper rotary, Dr. Mertens says not at all an easy matter, and he only succeeded after long ensive experimenting. The photogravure press is quite from the cotton printing press. Without considering the tion of relief and intaglio printing involved, and the elastic counter impression cylinder, which has only a : of a few centimetres, and various other patented arrange-nd processes, an entire change of the connecting arrange-as necessary to render rapid printing possible. The gravure rires for ensuring exact register and speed an entire change haracter of the machine. In the first, and then the only, of the process, published in the "Freiburger Zeitung," it sed that the intaglio printing machine was connected up rdinary two-roll rotary printing machine, or for two-side to a four-roll machine, the driving connection being made as of gearing. As to the speed at which the intaglio can be done, this is, of course, not so high as 50,000 r, which speed, of course, refers to large machines with ore cylinders. The special number of the "Freiburger " was printed at a speed of 4,000 to 5,000 metres (approxi-yards) per hour, and a second special was printed at a f 6,300 metres per hour. The speed of intaglio printing all only dependent upon the horse-power and the working -wiping arrangement, and can easily be brought up to o 12,000 per hour, or even more, without the quality of rres suffering.

ertens says that the new process is not only fit for large for small editions, and he considers the expense of etching r cylinders should be really no more than that of pro-he half-tone blocks used at present; in fact, he thinks the process should be quicker and handier, and will cost less. nders themselves must necessarily be more expensive than mall zinc or copper plates. On the other hand, whilst a ll plates could easily be sent by post to any distant place, l be troublesome to send cylinders. Further, of course, s would arise as to the width of the rollers according to of various newspapers. It is also quite clear that there e a difficulty in arranging to leave spaces amongst the ter for the purposes of inserting illustrations. For adding ons to advertisements much time would be necessary setting and printing, which, of course, with daily news-s never possible. One must not expect the impossible. lustrations in daily newspapers cannot altogether be dis-ith yet; notwithstanding this, there remains a sufficiently ld for the process. In reference to the suggestion that sults than those shown in the "Freiburger Zeitung" would n got by the use of better paper, Dr. Mertens says the vantage of his process is that the splendid results of the etching can be obtained without any special care, without e-ready, and on the cheapest news paper, at the regular the rotary machine.

The Printing Exhibition.

ibition, open until the 9th of June, at the Agricultural Hall, interest for photo-engravers. Several of the prominent firms ade exhibit, among others, Carl Hentschel, the Arthur Cox ng Co., A. E. Dent, the Anglo-Engraving Co., the Arc g Co., and a compliment is paid to the craft in making a f the exhibition a process plant in operation. This is at the Messrs. Penrose and Co. Not only is the exhibition of

interest from the very numerous examples of high-class process work shown from all over the world, on the floor of the hall, and particularly in the gallery, but here can be seen all the latest devices in the way of equipment for photo-engraving and printing. Messrs. Penrose show everything necessary and all in operation. Messrs. Hunters also have a fine stand with several novelties for the process man. Among them is a neat all-iron camera stand, combining an adjustable arrangement for lamps and copy-board. The offset machines, of which the engraver has lately heard so much, are here seen in operation, and of several makes. This alone ought to make the exhibition worth the engraver's attention, for he is likely to hear still more of the offset processes in the future. The space is very well filled, and exhibits are shown in every branch of the printing and stationery trades, from actual paper making to picture postcards.

Patent News.

Process patents—applications and specifications—are treated in "Photo-Mechanical Notes."

The following applications for patents were received between May 17 and 21:—

PRINTING-FRAMES.—No. 12,116. Improvements in printing-frames. Arthur Clarence Hayden, Norfolk House, Norfolk Street, Strand, London.

DEVELOPING APPARATUS.—No. 12,117. Improvements in developing apparatus. Arthur Clarence Hayden, Norfolk House, Norfolk Street, Strand, London.

DRY-MOUNTING.—No. 12,119. Contrivance for mounting photographs or other prints by the dry process. George Friedl, 3, George Street, Euston Square, London.

SOUND PHOTOGRAPHY.—No. 12,161. Improvements in and relating to sound photography. Sven Oskar Fredrik A. Son Berglund, 7, Southampton Buildings, London.

COLOUR PHOTOGRAPHY.—No. 12,252. Colour photography on paper from one plate. Joseph Sury, 27, Chancery Lane, London.

COLOUR PHOTOGRAPHY.—No. 12,266. Improvements in or relating to colour photography. Oliver Samuel Dawson, Clare Livingstone Finlay, and Thames Colour Plate Co., Ltd., 46, Lincoln's Inn Fields, London.

METER READERS.—No. 12,318. Improvements in photographic meter readers. Edward Clement Pond, Birkbeck Bank Chambers, Southampton Buildings, London.

APPARATUS.—No. 12,407. Improvements in apparatus for taking and reproducing animated or living pictures and the like. Charles Joshua Lane and Cecil John Thomas Birts, 111, Powis Street, Woolwich, London.

COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

The date in brackets is that of application in this country; or abroad, in the case of patents granted under the International Convention.

COLOUR PHOTOGRAPHY.—No. 10,611, 1909 (May 4, 1909). The invention consists in a process by which colour transparencies can be prepared by means of a lens fitted with a diaphragm and with colour-filters, and of plates or films the surface of which is covered with transparent and refracting lines or points.

It is known that when a diaphragm with three apertures provided with red, green, and violet screens is arranged at the optical centre of a lens, the colours of the images projected are not modified, but remain identical with those given by the same lens without a three-colour diaphragm. In addition, when the image thus projected is viewed it is found that the brilliancy of the various screens of the diaphragm varies in accordance with the tints of the part of the image in question and the components of this tint. Thus in the case of a red point only the red screen is luminous; for a yellow point, only the red and green screens are luminous, the violet screen appearing black, and so forth.

The result is that, if at each point of a single sensitive surface it is possible to record a complete and infinitely small image of the objective with its three screens, a three-colour selection is obtained which is analogous to that given by processes with juxtaposed coloured pigments. This selected image, when projected by means of the apparatus which has served for the exposure, will reproduce the exact colours of the original.

The improved process in accordance with the present invention consists in the employment of photographic plates, films, or bands carrying on one side a panchromatic emulsion and on the other, lines, or a transparent embossed, striated, or grained surface, in combination with a three-colour screen of the fundamental colours arranged in the lens.

The feature of the invention is the fact that the lines or

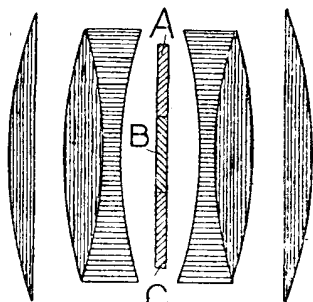


Fig. 1.

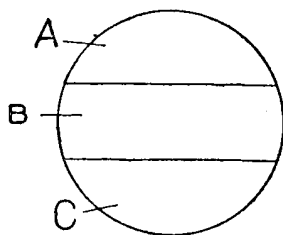


Fig. 2.

embossed surface are transparent upon a transparent background, so that all the light is utilised, whereas in the known arrangements opaque lines upon a transparent background, or else transparent lines upon a background which is more or less opaque, are employed.

Fig. 1 is a sectional view of an anastigmat lens and its three-colour screen; fig. 2 is a front elevation of the screen; fig. 3 is an elevation and fig. 4 a section on the line 4-4 to a considerably larger scale of a plate or film provided with transparent and refracting projections hemispherical in form; fig. 5 is an elevation and fig. 6 a section on the line 6-6 of a plate or film provided with parallel transparent and refracting lines.

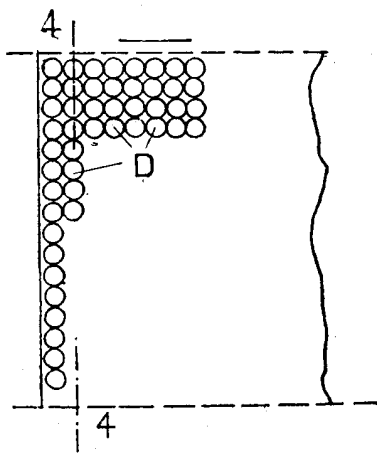


Fig. 3.

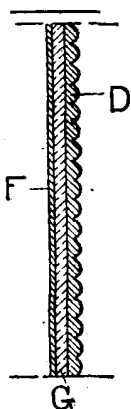


Fig. 4.

In order to carry the invention into practice a lens is employed which at its optical centre comprises a diaphragm provided with a red screen A, a green screen B, and a blue screen C (figs. 1 and 2), and some convenient refracting surface carrying a microscopic spherically embossed figure, D (figs. 3 and 4), each point acting as an actual objective. This refracting surface is arranged between the lens and the panchromatic emulsion, very close to the latter. Obviously, the same result will be obtained by replacing the embossed figure by colourless spheroidal refracting grains, which will play the same part as the facets of the embossing.

When the screens of the diaphragm are arranged along parallel slots the complete micrographic images of the objective may be replaced by linear images of the latter. The embossed surfaces indicated above are preferably replaced in this case by semi-cylindrical striated fluted surfaces, E (figs. 5 and 6); or the spheroidal grains are replaced by colourless cylindrical threads with a single strand.

Whatever the arrangement employed may be, it is advisable in order to avoid the necessity for guide or registration marks when a projection is desired, that the sensitised layer, F, and the surface serving for the selection of the coloured rays emanating from the three-colour diaphragm of the lens should be carried by the same support, G, of glass, celluloid, or gelatine. In this manner plates and films for ordinary views, cinematographic films, and so forth, can be prepared.

Commercial plates on a glass support and films with a celluloid support may be utilised in this process in the following manner: The emulsion is rendered panchromatic by bathing, and a system of microscopic refracting elements is added to their supports; a moulding in gelatine or in celluloid is specially suitable for the plates, while in the case of films with a plastic support, merely rolling them at an appropriate temperature and pressure between a smooth cylinder and a cylinder carrying in intaglio the engraving of the embossing to be formed will be sufficient.

The curvature of the microscopic elements of the refracting system should, of course, be proportionate to the thickness of

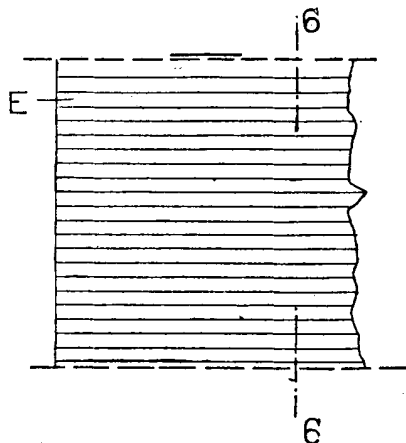


Fig. 5.

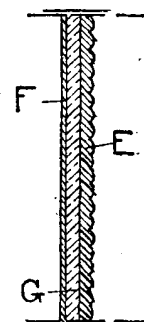


Fig. 6.

the support for the emulsion. These plates and films are exposed with the embossed side next the lens.

The images obtained by this process may be utilised for the projection in different ways; when merely developed after exposure through the objective with three-colour diaphragm, a plate or film of this kind, when replaced in the exposure apparatus, gives a negative image in which the colours of the objects are represented by their complementary colours; reversed after the first development, the projected image is positive, and the colours the actual colours; finally, the direct negative image and the inverted image may be projected with the objective with which the picture was taken, the screens of the diaphragm being replaced, however, by screens of complementary tints. In the first case a negative projection is obtained, but its tints are similar to those of the original, and in the second case a positive projection is obtained, with colours complementary to those of the objects photographed.

Certain of these methods of projection give various methods of reproducing these images. The unreversed negative image projected by means of the taking apparatus upon a plate or film comprising a similar and similarly arranged embossing gives upon this latter plate by simple development a positive image visible in colours when replaced in the apparatus, and likewise capable of projection in colours. The positive image (obtained by print or reversal), projected on to a similar surface, enables another positive print to be obtained by inversion. Finally, if a sensitised bleach-out paper of three primary colours, red, yellow, and blue,

be arranged either beneath the projection pencil of light or beneath the photographic image itself, powerfully illuminated through the three-colour screen objective, the paper assumes the tints of the object; this method, therefore, gives reproductions in colours on paper.

Results obtained upon embossed surfaces may always be reproduced by contact upon layers provided with the same embossing, owing to the faculty of perfect registration ensured by the relief of the microscopic elements of the refracting system. Rudolphe Berthon, Assren, France.

The following complete specifications, etc., are open to public inspection before acceptance under the Patents Act, 1901 :—

STEREOSCOPY.—No. 9,760. Apparatus for taking and projecting superposed views giving a stereoscopic effect. Toupillier.

PAPER.—No. 11,610. Photographic paper. Leighton and Babcock.

New Trade Names.

SLOGAS.—No. 321,628. Photographic papers. Thomas Illingworth and Co., Ltd., 1, Rucklidge Avenue, Willesden Junction, London, N.W., manufacturer of photographic papers. March 10, 1910.

CELLIT.—No. 322,499. Chemical substances used in manufactures and photography. The Bayer Co., Ltd., 20, Booth Street, Manchester. April 11, 1910.

EDINOL.—No. 322,502. A chemical preparation for photographic purposes. The Bayer Co., Ltd., 20, Booth Street, Manchester. April 11, 1910.

HOMOCOL.—No. 322,504. A photographic preparation included in class 1. The Bayer Co., Ltd., 20, Booth Street, Manchester. April 11, 1910.

MESOTAN.—No. 322,506. A chemical preparation for photographic purposes. The Bayer Co., Ltd., 20, Booth Street, Manchester. April 11, 1910.

PYROPHAN.—No. 322,509. A chemical preparation for photographic purposes. The Bayer Co., Ltd., 20, Booth Street, Manchester. April 11, 1910.

ST. LUKAS.—No. 322,510. Photographic preparations included in class 1. The Bayer Co., Ltd., 20, Booth Street, Manchester. April 11, 1910.

SAPHIROL.—No. 322,511. Mordants for dyeing purposes, and other chemical products used in manufactures and photography. The Bayer Co., Ltd., 20, Booth Street, Manchester. April 11, 1910.

AUTAN.—No. 322,580. Photographic papers. The Bayer Co., Ltd., 20, Booth Street, Manchester, manufacturers. April 11, 1910.

Analecta.

Extracts from our weekly and monthly contemporaries.

A Quick Method of Drying Matt Papers.

Not the least troublesome operation (writes Ernest C. Cripps in "Photo-Notes" for May), when a large number of matt prints is required, is that of drying. Especially is this so when space is limited, or when it is not possible to leave the moist prints in some place where they can be undisturbed. When dried in the ordinary way they cockle up at the corners, and require a fair amount of "massage" before they consent to be flat.

The following method will remove all difficulties, and the prints will be dried quickly, without any specks of dirt upon their surface, and there will be but a slight concavity in the finished product. Obtain from the stationer a piece of "fluffless" white blotting-paper 18 inches in width, and from three to six feet in length. Also get from the draper a yard of "longcloth" calico, which is sold in a width of 36 inches. Cut this in half, and the necessary drying arrangement is ready. Lay the length of blotting paper upon a *clean* surface, and over it place the calico. Take the wet prints, and after gently wiping the surface of each to remove all foreign matter, place it face downwards upon the calico, its length at right angles to the length of the piece. When all are down, carefully roll up, and fix the roll with an