

June 22, 1937.

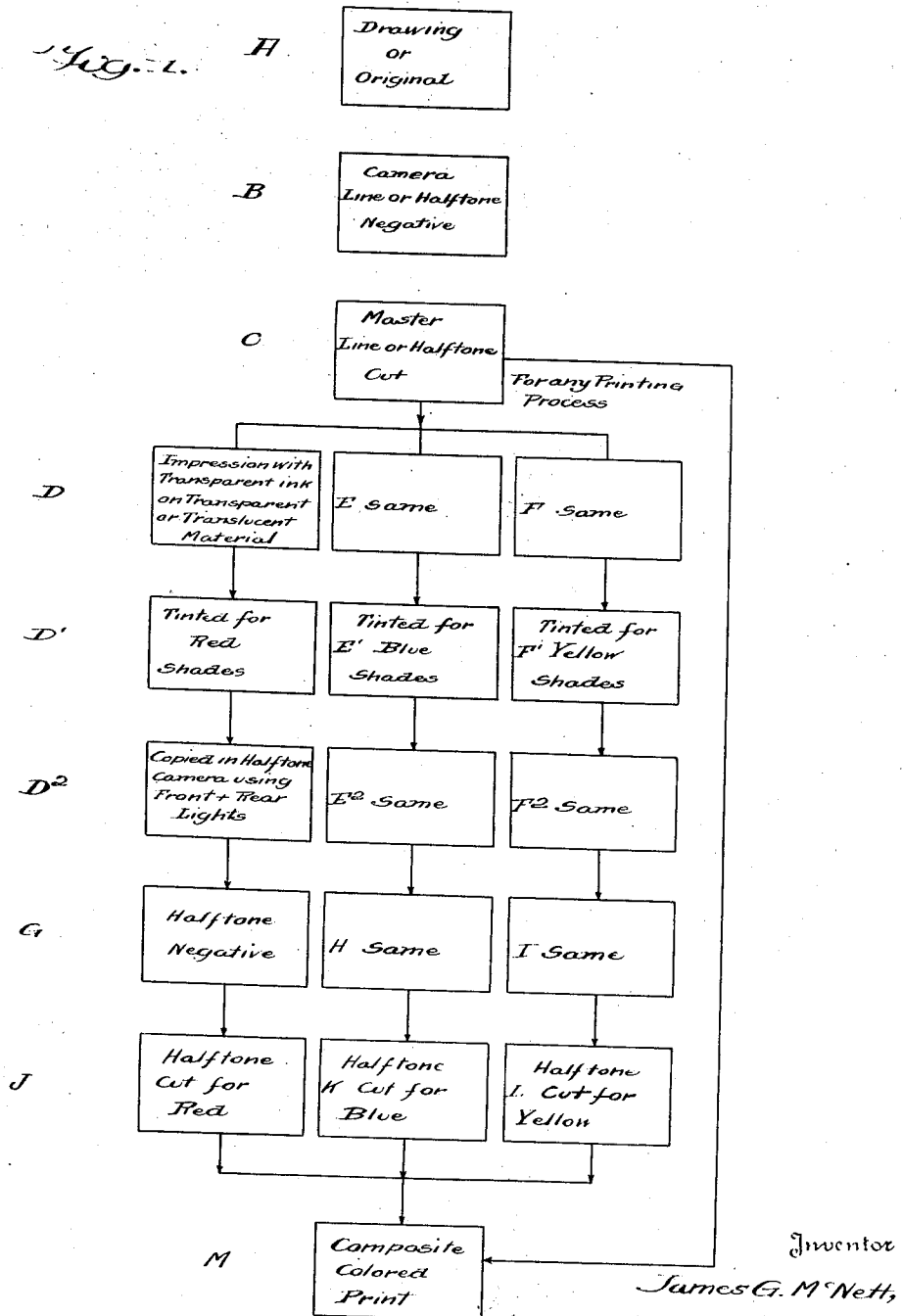
J. G. McNETT

2,084,353

PROCESS OF PRINTING MULTICOLORED PICTURES

Filed Nov. 18, 1935

2 Sheets-Sheet 1



By *Print & Print*

Attorneys

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2 Sheets-Sheet 2

Fig. 2.

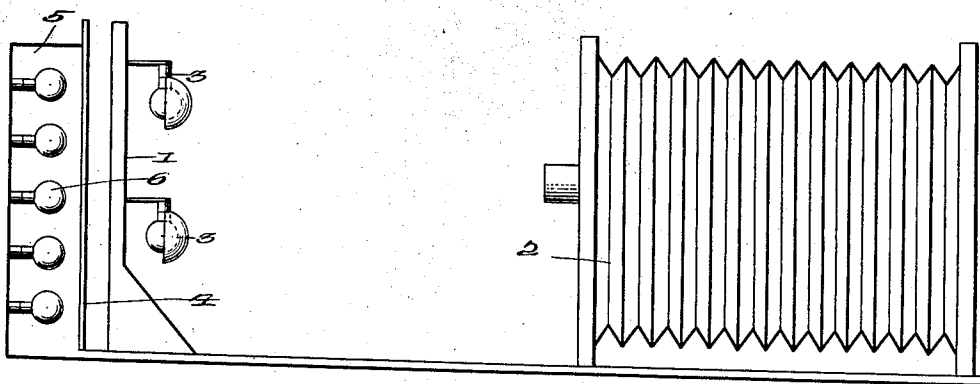


Fig. 3.

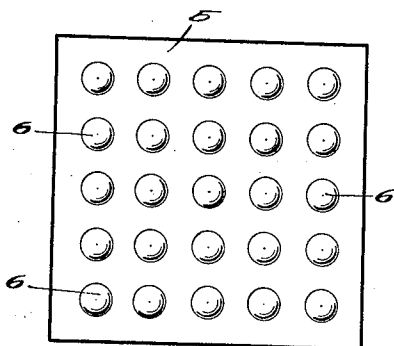
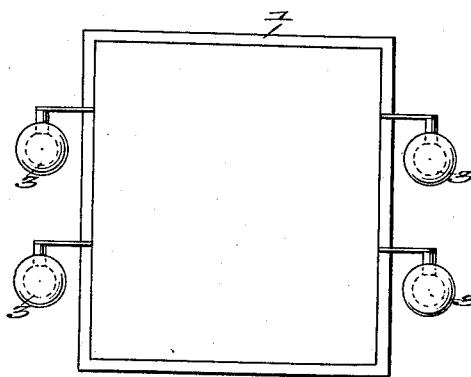


Fig. 4.



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UNITED STATES PATENT OFFICE

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PROCESS OF PRINTING MULTICOLORED
PICTURES

James G. McNett, St. Louis, Mo.

Application November 18, 1935, Serial No. 50,444

2 Claims. (Cl. 95—5.1)

My invention consists in new and useful improvements in a method of printing multi-colored pictures, and while it is more particularly intended for use in the printing of colored supplement work such for example as appears in the Sunday edition of various newspapers, it may be used with equal advantage for any other work of a similar nature.

It is the object of my invention to provide a method of this type which is decidedly more rapid than those heretofore practiced and one which will eliminate many of the steps of conventional multi-colored processes now in use.

For example, in all conventional processes of which I am advised, where it is desired to print in colors from an original subject in black and white, considerable time has been required in inking in the dots by hand and in blocking out or opaquing each portion which does not require the additional inking. With my improved process, the dot formation is determined by the tint used in tinting the impressions made from the master line or half tone cut, the lighter tint giving the smaller dot and each darker tint giving a larger dot. Furthermore, with my process, all blocking out or opaquing is avoided which results in a considerable saving of time and expense.

Another feature of my invention resides in the method of producing the half tone negatives which consists in the use of a half tone camera and providing in addition to the conventional lights placed between the copy and the camera, a light source located back of the copy so that an additional exposure may be given in order to render all parts of the half tone negative except the tinted portions, opaque and light resisting. It is this feature which eliminates the necessity of blocking out or opaquing.

With the above and other objects in view which will appear as the description proceeds, my invention consists in the novel features herein set forth, illustrated in the accompanying drawings and more particularly pointed out in the appended claims.

In the drawings, Fig. 1 is a diagrammatic showing of the steps of the process forming the present invention.

Fig. 2 is a diagrammatic side view of a half tone camera and light box arrangement used in one step of my process.

Fig. 3 is a front view of the rear illuminating element, and

Fig. 4 is a front view of the front illuminating element.

Referring to Fig. 1 of the drawings which il-

lustrates my process diagrammatically, I start with the original artist's drawing or other subject to be reproduced in colors, represented by A which is ordinarily in black and white, and from this original drawing I make a conventional camera line or half tone negative B. From this negative I produce a master line or half tone cut C. Both of the foregoing steps are standard practice and it is believed unnecessary to describe them in more detail.

I then make a series of impressions from the master cut with transparent ink on a number of strips of transparent or translucent material such for example as glass, celluloid or suitable translucent water-proof paper, D, E and F, the number of impressions from the master cut being determined by the number of colors to be applied to the final colored print.

Each of the master cut impressions is then tinted with the proper shades or tones of gray according to the shades or tones of the particular color for which the respective impression is intended to be used. For example, if the final colored print is to be made up of different shades of red, blue and yellow, the impression D will be tinted as at D' with the proper shades of gray in those portions which are to be finally reproduced in corresponding shades of red, the impression E will be tinted as at E' with the proper shades of gray in those portions which are to be finally reproduced in corresponding shades of blue, and the impression F will be tinted as at F' with the proper shades of gray in those portions which are to be finally reproduced in corresponding shades of yellow.

The tinted prints D', E' and F' are then individually placed on the transparent or translucent copy board 1 (Fig. 2) which is preferably composed of ground or opal glass and is located in front of a conventional half tone camera 2. The copy board 1 is provided with the usual front lights 3 for illuminating the front of the tinted print exposed to the camera. It will be noted in this connection that this drawing is purely diagrammatic and the front lights 3 may be in any convenient form such as the arc lights used with the conventional engraving camera. In back of the copy board 1, I provide a diffusing screen 4 of any suitable type, in the rear of which is located a light box 5 having a series of light bulbs 6 arranged across substantially the entire area behind the diffusing screen as shown in Fig. 3.

The tinted prints may be secured in place on the copy board in the conventional manner employed in the photo-engraving trade, that is, the

ground or opal glass is coated with a thin semi-sticky solution which holds the tinted print flat during the exposure but which readily releases the same after this operation.

- 5 These steps are represented by D², E² and F² in Fig. 1. The half tone camera 2 reproduces on a half tone negative, the respective tinted prints, the lights 3 illuminating the front of the prints so as to produce the proper tones or shades of the tinted portions on the negatives, while the light box 5 located behind the diffusing screen penetrates the transparent portions only of the tinted prints and renders the negative in the half tone camera opaque except where the tints are placed, the tints themselves being opaque. These half tone negatives are represented by G, H and I in Fig. 1.

- After these half tone negatives are made, they are put through the regular engraving process and reproduced on zinc or copper and etched, routed and blocked, to become a cut ready for printing. One of these half tone cuts J, K and L is provided for each color, red, blue and yellow, respectively.

- 25 The final step of the process consists in superimposing the master line or half tone cut C and each of the half tone cuts J, K and L to form the composite colored picture M. The master cut C is first impressed, then the half tone cut J is printed with red ink, the half tone cut K with blue ink, and the half tone cut L with yellow ink, thus producing a composite colored print M made up of the three basic colors, red, blue and yellow in varying shades according to the manner in which the impressions from the master cut were tinted with gray.

- It will be noted that there are two general methods of printing now in use. First the letterpress method generally used where the ink goes directly from the half tone cut to the paper, and second, the off-set method where the ink is transferred or off-set from the half tone cut to a rubber pad or roller and from there to the paper. This is all standard practice in the photoengraving and off-set trades, and it will be understood that my process will work equally well in both methods of printing.

- In employing my process in connection with the first method, the half tone negatives G, H and I will be made preferably on strip film and the half tone cuts J, K and L will be made on heavy zinc or copper plates.

- Using my process in connection with the second method, the half tone negatives G, H and I may be made on photographic plates and the half tone cuts J, K and L reproduced on thin metal plates commonly used for that process.

It will thus be seen that with my improved method, all stopping out or correcting of the negatives is done photographically by the light box back of the diffusing screen, and it will be observed in this connection that I do not intend to confine myself to any particular form of light box, any suitable light box arrangement which will produce this result being included within the scope of my invention.

From the foregoing it is believed that the operation and advantages of my invention will be readily understood by those skilled in the art without further description, it being borne in mind that numerous changes may be made in the details disclosed without departing from the spirit of my invention as set out in the following claims:

What I claim and desire to secure by Letter Patent is:—

1. A process of printing multi-colored picture which consists in producing a series of impressions from a master printing plate with transparent ink on suitable strips of translucent material, one for each primary color of the finished print, tinting each strip with an opaque light reflecting substance in shades corresponding to the desired shades of the color of the finished print, copying said tinted strips through a half tone screen, and simultaneously illuminating the strips from the rear to photographically stop out on the negatives the areas corresponding to the untinted portions of the strips, producing a color separation plate from each of said half tone negatives, and printing said master printing plate and said color separation plates in superposition to produce the finished picture.

2. A process of printing multi-colored pictures which consists in producing a series of impressions from a master printing plate with transparent ink on suitable strips of translucent material, one for each primary color of the finished print, tinting each strip with an opaque light reflecting substance in shades corresponding to the desired shades of the color of the finished print, illuminating the front surface of said tinted strips to produce half tone negatives from each of said strips, and simultaneously projecting light rays through said strips from the rear to photographically stop out on said negatives the areas corresponding to the untinted portions on said strips, producing a color separation printing plate from each of said negatives, and printing said master printing plate and said color separation printing plates in superposition to produce the finished picture.

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