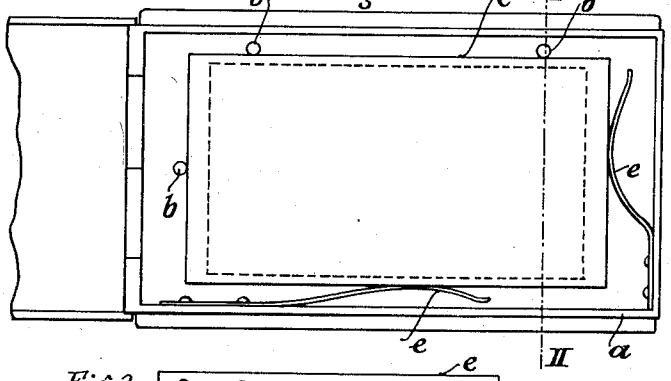
Feb. 16, 1937. H. WEBERLING 2,071,010

COLOR PHOTOGRAPHY

Filed May 5, 1934

Fig. 1.



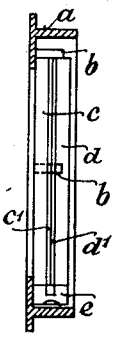


Fig. 2.

Fig. 3.

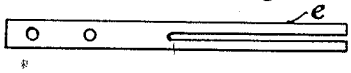
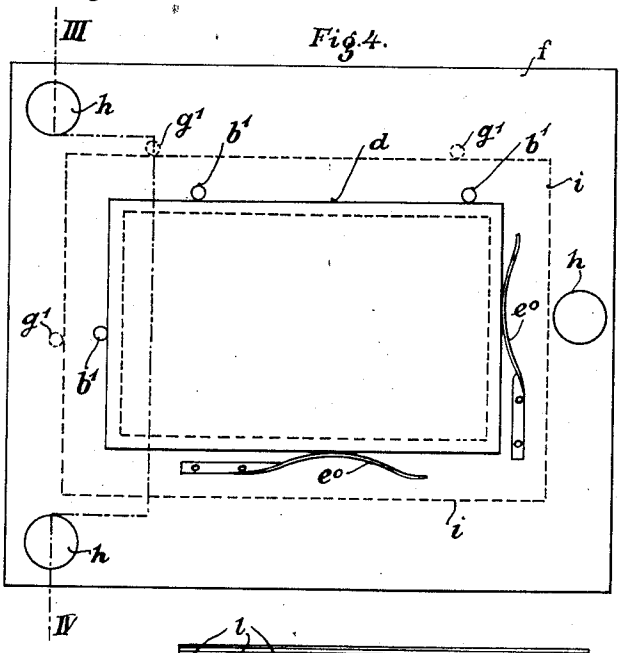


Fig. 4.



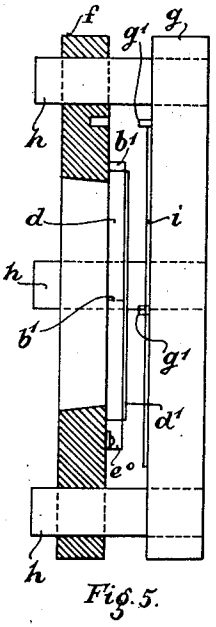


Fig. 5.

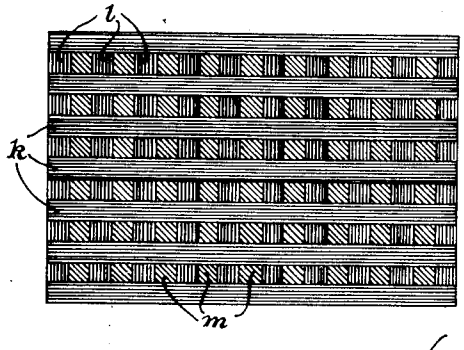


Fig. 6.

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COLOR PHOTOGRAPHY

Heinrich Weberling, Munich, Germany

Application May 5, 1934, Serial No. 724,162
In Germany February 13, 1933

3 Claims. (Cl. 95—2)

This invention relates to the art of color photography, and particularly to the method of producing screens and apparatus by which the screens are held in accurate registry in order that the screen sections for the different colors may be sharply outlined.

It is an object of this invention to provide means for holding screens in assembled relation to one another so that no portion of the color screen of one such screen will overlap that of another screen, for of course such conditions produce defective work and add to the labors of an operator who must, in manipulating the screens, have the screen fields for the different colors properly positioned. In assembling screens having different color fields or sections, it has been difficult in a dark room where only red or yellow light is available for illumination, for the operator to see the effects of the manipulation of one screen with relation to the other; hence, the provision of the mechanical device for correctly positioning and holding the screen and to allow an adjustment of one screen with relation to the other advances the work of the operator and insures perfection of results in superior finish of the product.

The use of this invention makes it unnecessary for the operator to manipulate and observe the result of the manipulation in attaining accurate registration and insures against the shifting of superimposed screen elements during the printing operation, so that the process of printing can be carried out more expeditiously and economically than has been possible by prior art practices.

A further object of the present invention is to produce novel means for operating in the production of color photographs, by means of multicolor screens, through the use of mechanical instrumentalities, whereby the elements employed in the above indicated process may be expeditiously assembled in a dark room and placed in proper relation to the copying paper employed. Furthermore, by applicant's method of accurately registering the screen elements as they are positioned for use, the production of defective copies is definitely overcome.

It is a further object of this invention to produce apparatus having the foregoing advantages, the said apparatus being comparatively inexpensive to produce and maintain.

With the foregoing and other objects in view, the invention consists in the details of construction, and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawing forming part of this application, wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 illustrates a view in elevation of the inside of an exposing apparatus;

Figure 2 illustrates a sectional view on the line I—II of Fig. 1;

Figure 3 illustrates a detail view of one of the springs;

Figure 4 illustrates a view in elevation of the inside of a copying frame;

Figure 5 illustrates a sectional view on the line III—IV of Fig. 4; and

Figure 6 illustrates the details of a screen for negative and copying paper.

In this drawing a box frame *a* has walls which are T-shape in section, the front portion of the frame being provided with inwardly extending registering posts or pins *b* which function as stops against which a color screen *c* and a negative *d* engage, it being seen that when one side edge and an end of each of the elements engage posts, the screen and negative may be properly positioned. As seen, the posts engage one edge and an end of the screen and negative, whereas the end opposite that engaged by the posts and the side edges opposite those engaged by the posts are yieldingly held by a spring *e* that is anchored to the frame by appropriate fastenings such as screws, rivets or the like. It is shown in Figure 3 that the spring is provided with a longitudinal slot in its free end dividing the spring into two tongue-like members, each of which engages one of the elements, that is to say, the screen or the negative plate, and this is intended to compensate for slight differences in size or dimension between the two elements which engage the posts.

The printing frame illustrated in Figures 4 and 5 consists of the base plate *g* having guiding posts *h* and the frame *f* has apertures to receive the said posts and the frame is adjustable on the posts with relation to the base plate. Guide stops *b'* are anchored to the frame and project from its inner surface toward the base for the purpose of guiding and holding a negative *d* properly alined with the opening in the frame and in operative relation to the copying paper *i* on the base, which copying paper has its edge engaging positioning elements such as posts *g'*.

The negative is held in engagement with the

members b' by springs e^0 anchored in appropriate manner to the inner surface of the frame and with the outer free ends engaging the negative.

The same arrangement of registering stops is also provided on a bed plate of a printing press (not shown) for providing the copying paper i with a screen placed against the stops of the bed plate.

In Figure 6 there is illustrated a color screen of the three color type, in which parallel lines k are supplied for one color as, for instance, blue, while the other colors l and m are red and green, respectively, and are arranged in dots between the aforementioned lines in such fashion that the dots are visualized as red and green lines at angles to the parallel lines. The foregoing arrangement of the screen elements makes it possible to have each screen terminate at uniformly directed sides of a sheet with the same color lines. For instance, the side edges of the parallel lines and the edges below with either the red or green dot line will always automatically arrange themselves with correct sides on top of one another when assembled with a negative in the dark room.

I claim:

1. In an apparatus for color photography consisting of a dark slide comprising, a base member, guiding elements thereon for engaging the edges of photographic elements occupying positions parallel to each other, and springs anchored to the base having their free ends engaging the aforesaid photographic elements for automatically holding them in position against the guiding elements, said springs each having longitudinally extending slots at their free ends dividing each spring into two independently operable holding instrumentalities, each of which engages one of the aforesaid photographic elements.

2. An apparatus for positioning screen elements of a negative and copying paper for registration, one with relation to the other in color photography or color printing apparatus comprising a base plate and frame, one of said members having posts and the other member apertures to receive the posts whereby they are adjustably assembled and held in operative relation to each other, guides on the base plate adapted to be engaged by edges of the elements to be registered, locating elements on the frame against which the edges of the other elements to be registered are positioned, and means for holding the registered elements in position against the locating elements comprising springs anchored with relation to the said locating elements.

3. In color photography, means for facilitating the correct registration of a negative and a color screen in a copying frame having locating elements and copying paper with the same screen elements, consisting in arranging the color screen and photographic plate in a dark slide with two of their edges in engagement with the locating elements, spring elements anchored with relation to the said locating elements for holding the screen and photographic plate in engagement with the locating elements, each of said spring elements having a longitudinal slot in its free ends dividing each spring into two independently operating holding instrumentalities each of which engages one of the aforesaid registered elements, a negative in the copying frame having two of its edges engaging locating elements positioned in the same relation to said negative as in the dark slide, to insure the correct automatic positioning of the screen elements of the negative and the copying paper for registration.

HEINRICH WEBERLING.