F. E. DAVIES.

METHOD OF MAKING AND PROJECTING PICTURES.

APPLICATION FILED JAN. 6, 1917.

1,262,180. Patented Apr. 9, 1918.

Fig. 2.

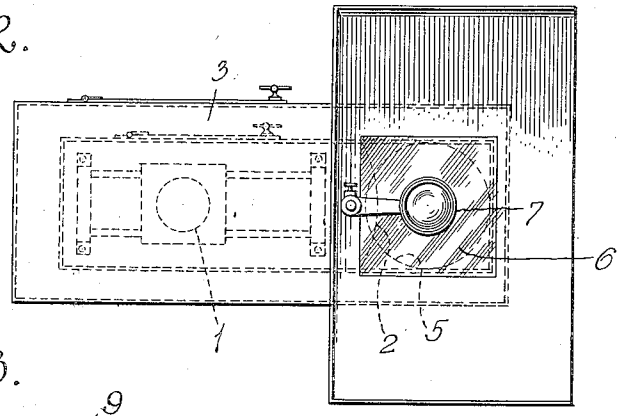
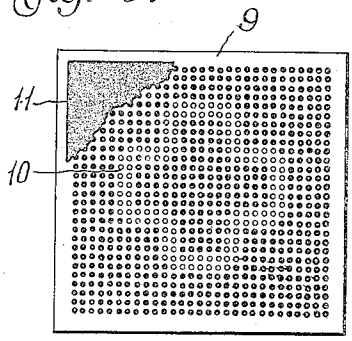


Fig. 3.



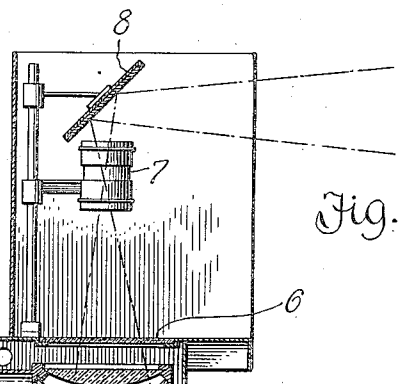
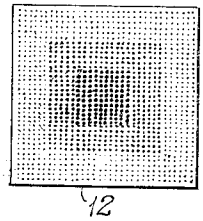


Fig. 1

Fig. 4.



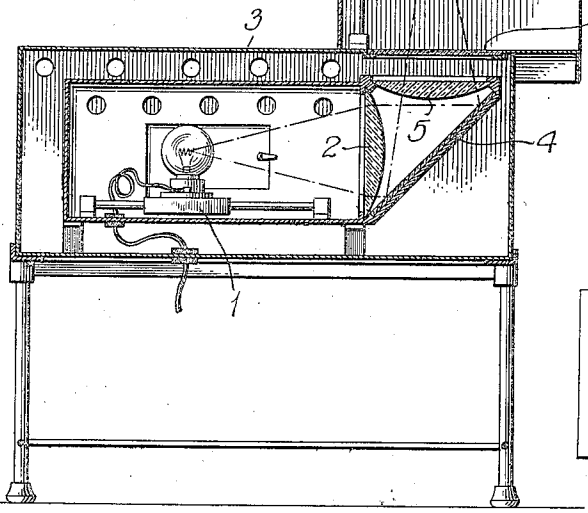
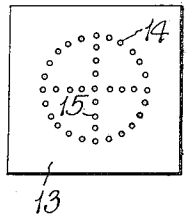


Fig. 5.



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METHOD OF MAKING AND PROJECTING PICTURES.

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To all whom it may concern:

Be it known that I, FREDERICK E. DAVIES, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Methods of Making and Projecting Pictures, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a method of making and projecting pictures, and has special reference to the projection of pictures, sketches, illustrations or delineations on a screen as the same are drawn, painted, or otherwise made.

My invention, in its broadest aspect, involves means of producing on a screen or other background, on a large scale, pictures as they are made, built up or otherwise produced, on a small scale, at a point remote from the screen or background. This may be accomplished by using a stereopticon or suitable projecting machine, and interposing a medium upon which pictures, either negative or positive, may be produced. The interposed medium may be in the form of a perforated, transparent or translucent base and on this base is drawn, painted, or otherwise produced a picture, by using a suitable instrument and opaque or translucent substances, applied to or one on the other, so that the projected picture will have for its outline and details those portions of the base and substances thereon which light has penetrated. By using various kinds of bases and substances it is possible to project various kinds of pictures on to a screen, for instance, pictures that are colored or pictures in bas relief.

Since my method involves the use of projecting machines, reference will now be had to the drawings, wherein—

Figure 1 is a longitudinal sectional view of a suitable projecting machine;

Fig. 2 is a plan of the same;

Fig. 3 is an elevation of a base or work plate prepared for the production of a picture and illustrating the manner of producing the same,

Fig. 4 is an elevation of another base or work plate showing another method of producing a picture, and

Fig. 5 is an elevation of another base or work plate showing another method of producing a picture.

The machine or apparatus which I have used for projecting rays of light, upon a screen comprises a suitable source of light, as a lamp 1, which may be adjusted relative to a lens 2 and in order that the lamp may be safely used in a theater, auditorium or structure under fire regulations, the lamp is inclosed by a fire proof housing 3. Associated with the lens 2 is a mirror or reflector 4 and another lens 5. The mirror or reflector 4 is adapted to reflect light rays from the lamp 1, to a base or work plate 6 in proximity to the lens 5 and as the rays of light penetrate the base or work plate, the light rays pass through an adjustable lens 7 to an adjustable mirror or reflector 8 and are projected on to a suitable screen or background (not shown).

The method involved with the projecting machine or apparatus resides principally in the preparation of the base or work plate 6 by which a picture is produced, and reference will first be had to the method which includes the base or work plate shown in Fig. 3. This base or work plate can be made of an opaque piece of material 9 provided with closely arranged perforations or apertures 10 and when the base or work plate is placed in the position shown in Fig. 1, the light rays will pass through the perforations or apertures 10 and thereby produce a spotted effect on the screen or background. Now, by using opaque matter 11 or a translucent substance of any color, the perforations or apertures 10 may be closed, covered or blotted out, so as to completely exclude light, as is the case with opaque matter, or allow light to penetrate or pass through the perforations or apertures, according to the nature of the translucent substance. In placing the opaque or translucent matter on the base or work plate, a picture can be outlined or produced, and as an example, there is shown a Maltese cross which is formed by filling or blotting out the perforations and allowing others to remain open so that light rays will pass through and be projected on to the screen. It is also possible in connection with this kind of base or work holder to perforate the same so that a spotted configuration will be shown on the screen and after the spotted configuration has been observed, the artist or producer of pictures may fill or blot out certain of the perforations so that the original spotted configuration is transformed

into another configuration or picture. With the perforations or apertures very small a stippled effect will be produced on the screen, and it is a well known fact that stippled pictures are as discernible or as readily understood as line pictures, and furthermore, that a stippled picture can be more readily transformed into another picture, by combining or blotting out certain stipples than what can be accomplished by a line picture.

Another method by which very satisfactory results can be obtained is that of using a transparent base or work plate 12, as shown in Fig. 4, and placing thereon or applying to the face of the plate translucent substances or matter, either in liquid or pliable form. Assuming that a piece of glass or a piece of celluloid is used as a base or work plate, it is an extremely easy operation to apply thereto, by pen, brush or suitable instrument, translucent liquid, as water coloring or a thin paint, or translucent matter in the form of paste or jelly that may be molded and shaped upon the base to provide portions of greater density than others. By varying the density of the base or transparent work plate, shadows of varying density will appear on the screen, and in this manner realistic pictures having high lights and a wealth of detail may appear as the artist produces the same upon the base or work plate. By placing translucent substances, one upon the other, somewhat in the form of coatings, the passage of light rays through the base or work plate can be regulated to a nicety and with sharp and well defined shadows upon the screen a picture will stand out in bas relief. The base or work plate shown in Fig. 4 has a translucent substance applied thereto so as to decrease the transparency of the base or work plate, and with the artist or operator using skill in the application of the substances a slowly growing picture will be outlined and produced upon the screen, with the same degree of interest to an audience as though the actual operations of the artist were observed, at the base or work plate.

Still another method is involved and by reference to Fig. 5, it will be noted than pictures, sketches, illustrations or delineations may be produced upon a screen by perforating or aperturing a base or work plate. As an instance of this method, an opaque base or work plate 13 is placed in position and then by perforating or aperturing the base or work plate, as at 14 and 15, a composite design or picture is made which is observed upon the screen by reason of light rays passing through the perforations or apertures. To facilitate perforating the base or work plate 13, the picture to be reproduced may be previously drawn or sketched thereon to guide the operator in perforating the work plate. For instance, the perforations 14 may be first made and thus a ring is first reproduced upon the screen. Then the perforations 15 may be made, thereby placing a cross in the ring. Now, with this composite picture or design on the screen, the operator may apply a coating or filler to certain perforations, so that the one design is wiped out on the screen, leaving the other design. An operator may start in and indiscriminately perforate the base or work plate and then close certain of the perforations so that the remaining perforations will produce a picture on the screen. This method permits of a highly or complex stippled picture being first produced to gradually fade away into one or more other pictures, and in this method, as well as those previously described, it is apparent that the pictures as produced upon a screen may be photographed by a moving picture apparatus, and by speeding up the film or eliminating certain sections or scenes thereof, a picture may be rapidly reproduced by a moving picture apparatus.

What I claim is:—

1. A method of projecting pictures, consisting in sketching a picture on a perforated medium with a light excluding substance by means of an instrument which can be so manipulated as to produce either pen or brush effect, and thereby closing some of the perforations of said medium, allowing a light to shine upon said medium and holding the instrument in such a position as to allow the light to pass freely through the other perforations of said medium on to a screen, whereby as the light excluding substance is applied a slowly growing picture appears on the screen.

2. A method of projecting pictures consisting in allowing a light to shine on a medium, perforating the medium and applying a light excluding medium to the perforated medium, by an instrument which can be so manipulated as to produce a slowly growing picture having for its background and characteristic features the shadows of the light excluding medium.

3. A method of producing screen pictures, consisting in allowing a light to shine on the perforated medium and then placing opaque matter on the perforated medium to produce a slowly growing picture having for its characteristic features the shadows of the opaque matter.

4. A method of simultaneously making and projecting pictures consisting in allowing a light to shine on a medium capable of having the light pass therethrough, and then placing matters of greater density on said medium to produce a slowly growing picture having shadow portions varying in density.

5. A method of producing pictures consisting of allowing a light to shine on a

medium capable of having light pass therethrough and applying substances varying in densities to said medium to produce screen shadows of varying densities.

6. A method of simultaneously making and projecting pictures consisting of rendering a medium susceptible to the penetration of light, placing pliable substances one on the other on the medium and allowing a light to shine on said substances to produce a slowly growing picture on the screen as the substances are subjected to light.

In testimony whereof I affix my signature in the presence of two witnesses.

FREDERICK E. DAVIES.

Witnesses:

KARL H. BUTLER,

ANNA M. DORR.