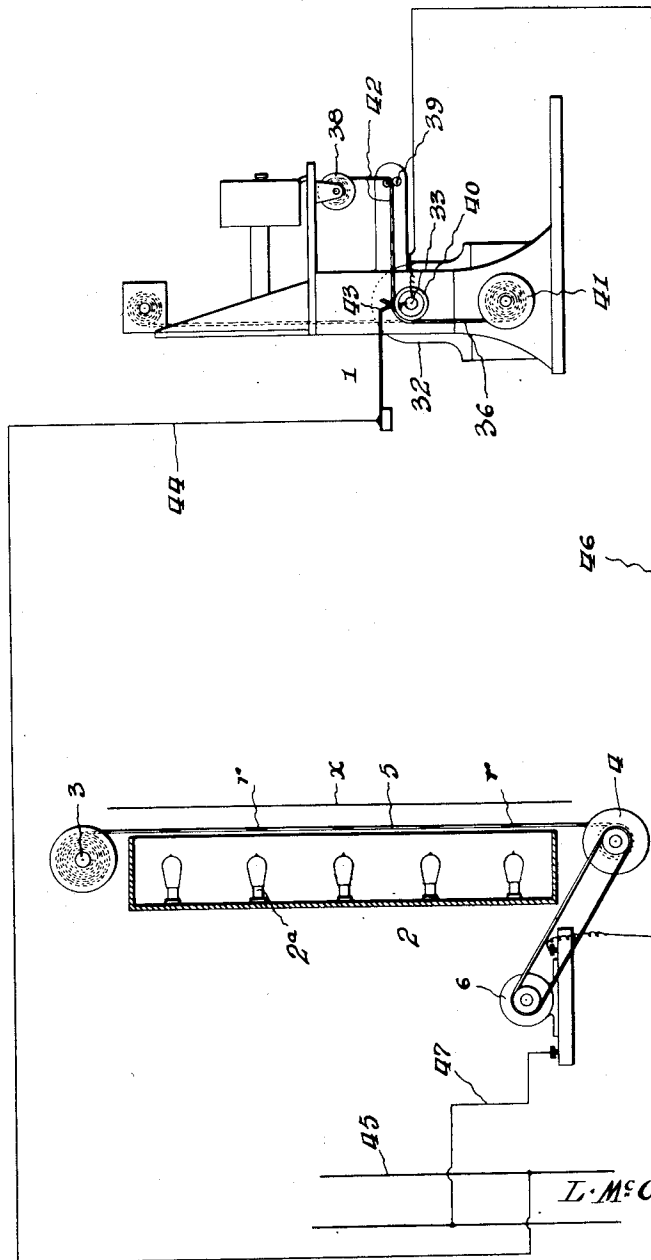


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CINEMATOGRAPH AND THE LIKE EFFECT.
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Patented Jan. 2, 1917.
2 SHEETS—SHEET 1.

1,211,200.

Fig. 1.



384

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CINEMATOGRAPH AND THE LIKE EFFECT.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LANGDON McCORMICK, a citizen of the American Republic, and resident of 22 Tavistock Square, London, England, have invented certain new and useful Improvements in and Connected with Cinematograph and the like Effects, of which the following is a specification, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in apparatus for lighting screens used with cinematographs and the like.

It is well known that when a series of pictures are shown on the screen it frequently happens that lights,—for example, the moon, fire, lamps on approaching vehicles, rockets, flashes from fire arms, and other moving or stationary lights, are represented by the pictures which lack actual light and “life”.

My invention consists in providing lights behind a screen, the lights registering with the representation of lights on the picture exposed on the screen, the lights at the back of the screen being visible through the screen from the front thereof.

Other objects and advantages of the invention will be hereinafter set forth in the following specification, and particularly pointed out in the claims.

In the drawings, Figure 1 is a diagrammatic view in side elevation, illustrating my invention. Fig. 2 is a top plan view illustrating diagrammatically a cinematograph, and means for lighting the lamps.

In the drawings, the reference numeral 1, represents a cinematograph apparatus of the usual type which is usually positioned at the back of the theater. Suitably located in front of the apparatus 1, is a framework 2, and revolvably mounted in the front end of the said frame are two rollers 3 and 4, arranged at the top and bottom respectively, and parallel to each other and to the horizontal members of the frame 2. An opaque screen 5, of considerable length is wound upon the upper roller 3, and has its lower end fastened to the lower roller 4, this screen having suitably located openings *r*. A motor 6, is arranged to revolve the roller 4, and thereby wind the opaque screen from one roller to the other.

Supported in the framework and behind

the opaque screen are lamps 2^a. In front of and in proximity to the opaque screen 5, is a translucent screen *x*, on which the pictures are depicted.

The openings *r* in the opaque screen 5, are arranged and spaced to correspond with the representation of light in the pictures produced on the translucent screen *x*, the latter being of the usual material employed in connection with moving picture machines.

When the representation of light in the moving picture is thrown on the translucent screen *x*, means are provided to move the opaque screen 5, to register an opening *r*, with the representation of light in the picture, to show actual light on the screen *x*. As shown conventionally in Fig. 1, this means may comprise a motor 32, which drives a shaft 33, which operates the cinematograph apparatus. This shaft also drives a tape 36, illustrated in Fig. 1. The tape 36 passes from a drum 38, between guide rollers 39, over a contact wheel 40, and is thence wound on a drum 41, which may be rotated in any suitable manner. The contact wheel 40, is mounted on a shaft which is rotated by the cinematograph mechanism, to cause synchronous movement of the tape to the film. The tape is provided with perforations 42, through which the end of a contact finger 43, passes. Connected with the contact is a wire 44, the other end of which is connected with a wire 45, charged with electric current. From the shaft 33, leads a wire 46, connected to a terminal of the motor 6. Leading from the other terminal of the motor is a wire 47, which is connected to a wire 48, charged with electric current.

In operation, the lamps thus far described are lighted in any suitable manner, and the motor 32, is started, which drives the cinematograph apparatus 1, and rotates the contact roller 40, causing the film and the tape to move in synchronism. When a picture is thrown on the screen *x*, requiring the representation of a light, such as an automobile, a locomotive, or the like, a circuit is completed through the opening in the tape 36, and the contacts. The closing of the current starts the motor 6, which moves the opaque screen 5, to register an opening *r*, with the path of travel of the automobile head lights, shown on the screen *x*. The light from the lamp shines through the opening or open-

ings *r*, and to the moving picture to show actual light on the representation of light in the picture appearing on the screen.

A variety of lights may be used, for instance to indicate the head light of a locomotive, lights on a boat, train, sky rockets, fire, etc. The openings *r*, are arranged to suit the picture produced on the screen, the tape and the operating mechanism operating in synchronism to obtain the necessary result.

In Fig. 2 is shown a construction for producing the desired result without the use of the opaque screen. In this figure, the lamp frame is indicated at *a*, and the lamps at *b*. In front of the lamps is arranged a translucent screen *c*, corresponding to the screen *a*, in Fig. 1, the lamps, however, in this instance throwing the light directly on the screen.

The character *d*, indicates a film, which passes over a feeding wheel *e*, of a cinematograph apparatus. On the shaft of the feeding wheel is a contact drum *f*, provided on its periphery with a series of spaced contact surfaces *g*, and engaging therewith are contacts *h*, supplied with current by a wire *i*, leading to a source of supply such as a battery *j*. From battery *j*, leads a wire *k*, and from this latter wire short wires *l* lead to the respective lamps *b*.

Arranged to make contact with the contact surfaces *g*, are fingers *m*, and extending from the fingers are wires *n*, leading to the lamps *b*. Passing over the contact drum *f*, and under the fingers *m*, is a tape *o*, formed with perforations *p*, the tape being unwound from a roll *q*, and wound on a roll *r*. As the film moves over the feed roll *e*, the tape *o*, is correspondingly moved, and as the perforations in the tape pass over the contact roll the fingers *m*, make contact with the contact surfaces *g*, closing the circuit, and lighting the lamps *b*, to show light on the screen to correspond with the representation of light in the pictures. The perforations may be made to suit the conditions incident to the pictures shown on the screen.

What I claim is:—

1. In combination, cinematograph mechanism, a translucent screen on which the moving pictures are exhibited, and a lamp positioned in rear of the screen to register its light on the screen at such point where actual light is required to complete the pictorial representation.

2. In combination, cinematograph mechanism, a translucent screen on which the moving pictures are exhibited, a plurality of lamps in rear of the screen, and means for localizing the light of the lamps to register light on the screen where actual light is required to complete the pictorial representation.

3. In combination, a cinematograph mechanism, a translucent screen on which the pictures are exhibited, a plurality of lamps in rear of the screen, and movable means for localizing the light of the lamps to show in the reproduced picture actual light at a particular point.

4. In combination, cinematograph mechanism, a translucent screen on which pictures are exhibited, an opaque screen in rear of the translucent screen, said opaque screen having places through which light may pass, means for moving said opaque screen, lamps in rear of the opaque screen, and means for causing the opaque screen to move correspondingly to the picture exhibited on the translucent screen, whereby to produce actual light in the picture reproduced.

5. In combination, cinematograph mechanism, a translucent screen on which pictures are exhibited, an opaque screen in rear of the translucent screen and provided with openings, lamps in rear of the opaque screen, and means for registering the opening in the opaque screen with the representation of lights in the exhibited picture.

6. In combination, cinematograph mechanism, a screen on which the pictures are exhibited, a vertically movable opaque screen in rear of the first mentioned screen and provided with openings, lamps in rear of the opaque screen, and means for moving the screen to correspond with the picture produced by the cinematograph mechanism to produce actual light in the picture with the representation of the lights in said picture.

7. In combination, cinematograph mechanism, a translucent screen on which the pictures are exhibited, lamps in rear of said screen, an opaque screen in rear of the translucent screen and provided with places through which light may pass to the translucent screen, and means operating with the cinematograph mechanism for moving the opaque screen.

8. In combination, cinematograph mechanism, a translucent screen on which the pictures are exhibited, lamps in rear of said screen, an opaque screen in rear of the translucent screen and provided with places through which light may pass to the translucent screen, a tape having perforations, a contact surface over which the tape passes, a contact finger operating the tape and engaging the contact surface through the perforations, and a motor for moving the screen, and wires connected to a source of electric energy and the contact surface, finger and motor, whereby when contact is made the motor will move the opaque screen.

9. In combination, cinematograph mechanism, a translucent screen, lamps in rear of the screen, means for localizing the light from the lamps to the translucent screen,

means timed by the cinematograph mechanism for moving the light localizing means, to cause actual light to appear on pictures having the reproductions of light appearing on the translucent screen. at such point where actual light is required to complete the pictorial representation. 10

In witness whereof I have hereunto set my hand in presence of two witnesses.

LANGDON McCORMICK.

Witnesses:

O. J. WORTH,
W. E. ROGERS.

10. In combination, cinematograph mechanism, a translucent screen on one surface of which the moving pictures are exhibited, and a lamp to register its light on the screen