

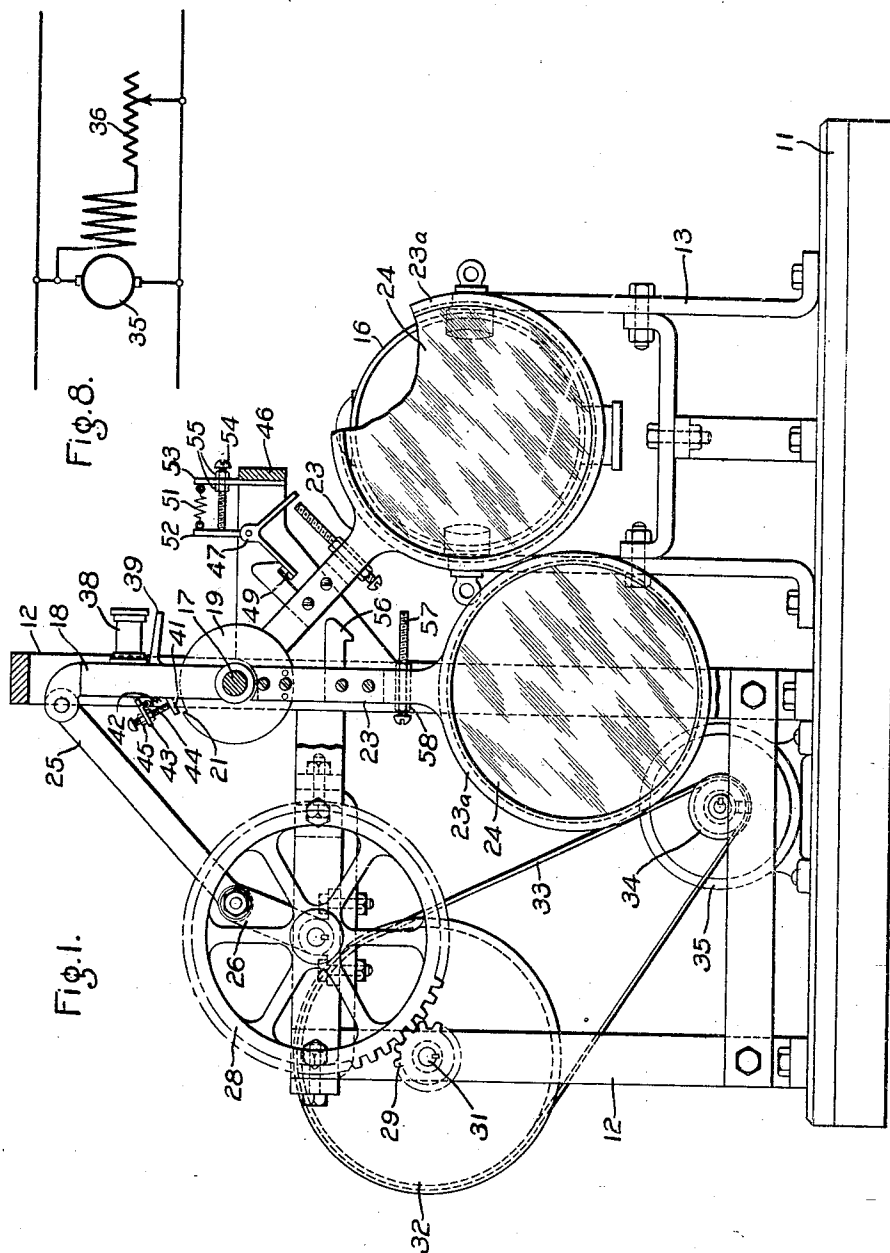
Jan. 3, 1928.

M. H. GREENEWALT
MEANS FOR CONTROLLING LIGHT

1,654,873

Filed Oct. 24, 1923

5 Sheets-Sheet 1



WITNESSES:

R. J. Fitzgerald.
R. J. Butler.

INVENTOR
Mary Hallock Greenewalt.

BY
H. M. Biebel
ATTORNEY

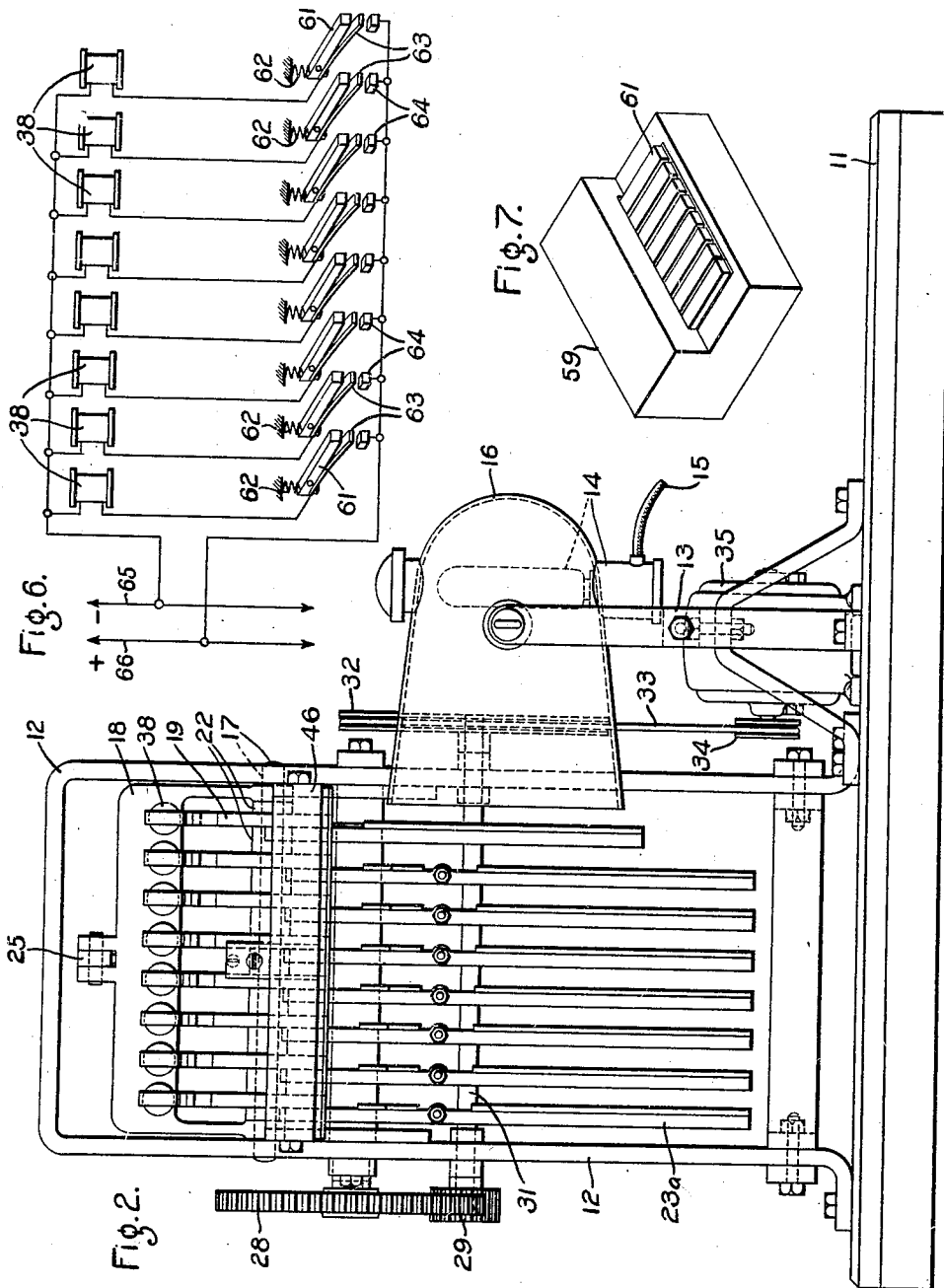
Jan. 3, 1928.

M. H. GREENEWALT
MEANS FOR CONTROLLING LIGHT

1,654,873

Filed Oct. 24, 1923

5 Sheets-Sheet 2



WITNESSES:

R. J. Fitzgerald
R. J. Butler

INVENTOR

Mary Hallock Greenewalt.

BY

H. M. Beebe
ATTORNEY

Jan. 3, 1928.

M. H. GREENEWALT
MEANS FOR CONTROLLING LIGHT

1,654,873

Filed Oct. 24, 1923

5 Sheets-Sheet 3

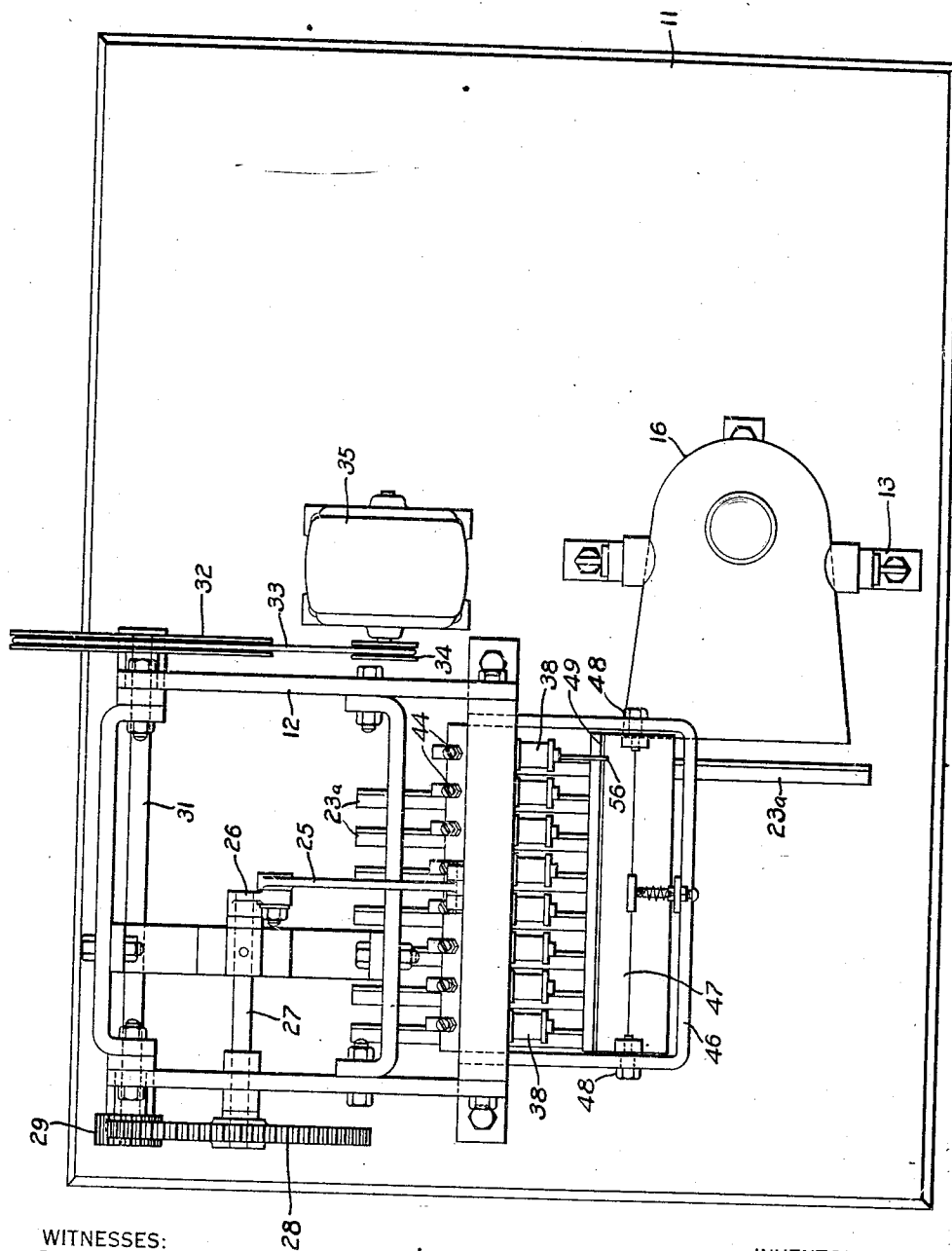


Fig. 3.

WITNESSES:

R. J. Fitzgerald
R. J. Butler.

INVENTOR

Mary Hallock Greenwalt.

BY

H. M. Biebel
ATTORNEY

Jan. 3, 1928.

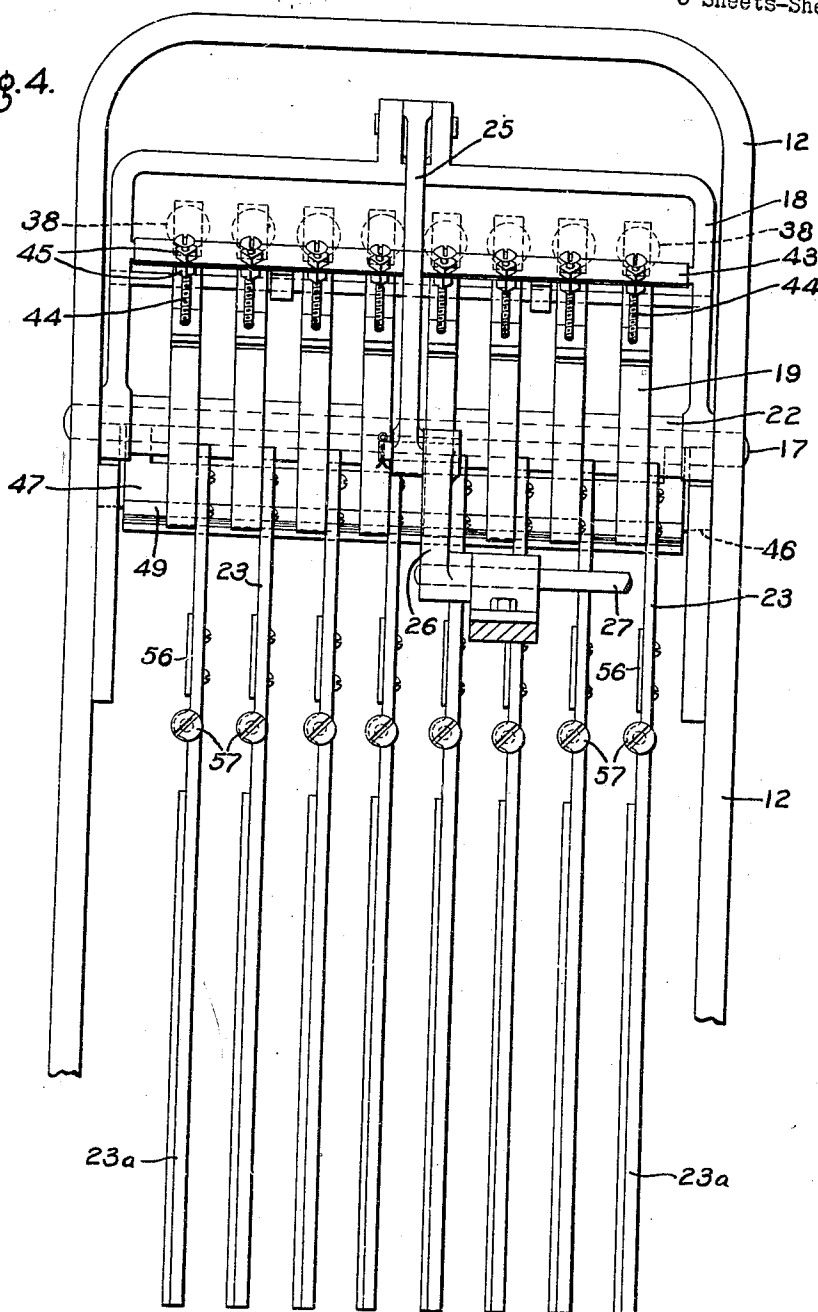
M. H. GREENEWALT
MEANS FOR CONTROLLING LIGHT

1,654,873

Filed Oct. 24, 1923

5 Sheets-Sheet 4

Fig. 4.



WITNESSES:

R. J. Fitzgerald
R. J. Butler.

INVENTOR

Mary Hallock Greenewalt.

BY

H. M. Beibel
ATTORNEY

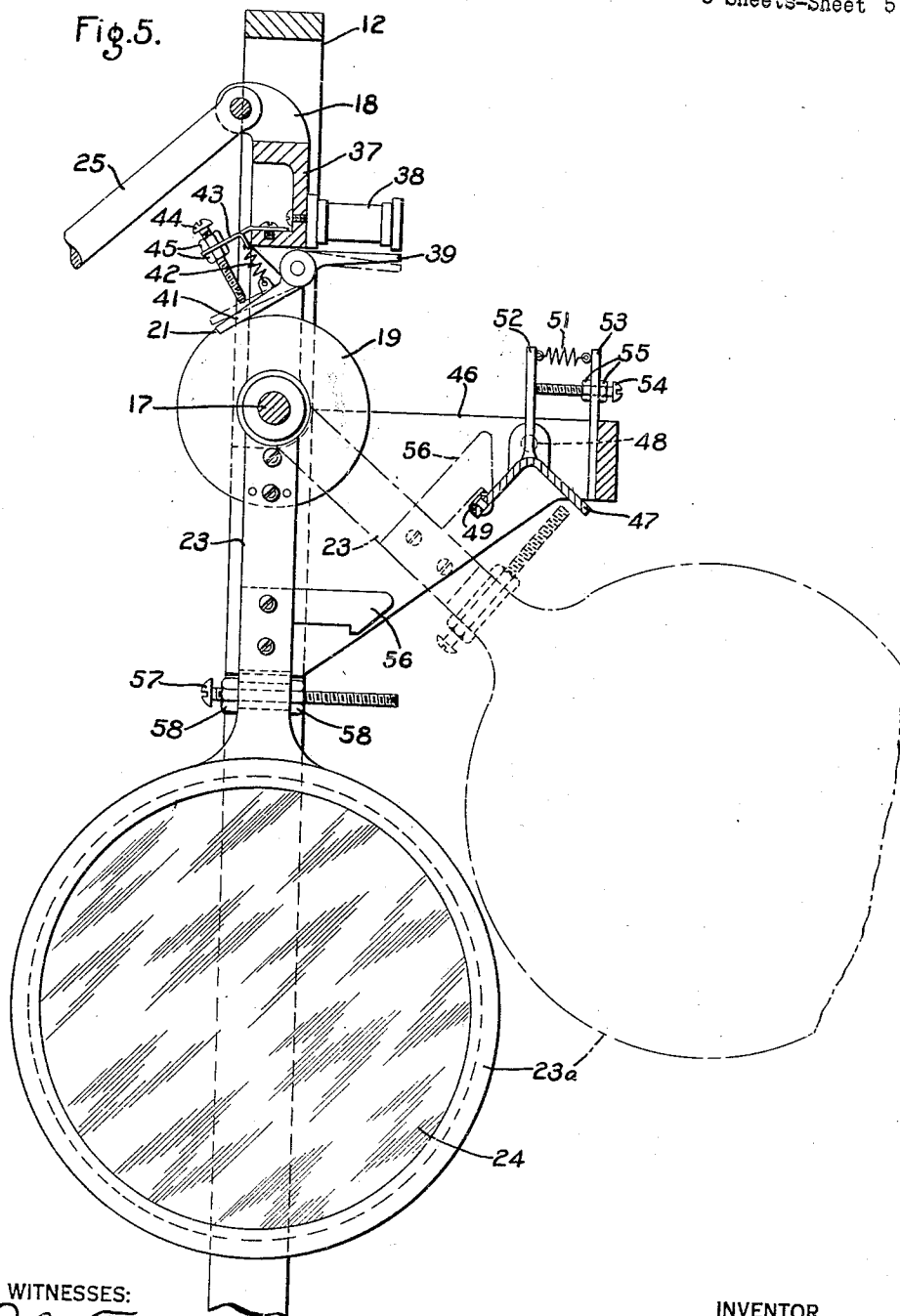
Jan. 3, 1928.

M. H. GREENEWALT
MEANS FOR CONTROLLING LIGHT

1,654,873

Filed Oct. 24, 1923

5 Sheets-Sheet 5



WITNESSES:

R. J. Fitzgerald
R. J. Butler

INVENTOR

Mary Hallock Greenewalt.

BY

H. M. Riebel
ATTORNEY

Patented Jan. 3, 1928.

1,654,873

UNITED STATES PATENT OFFICE.

MARY HALLOCK GREENEWALT, OF PHILADELPHIA, PENNSYLVANIA.

MEANS FOR CONTROLLING LIGHT.

Application filed October 24, 1923. Serial No. 670,432.

My invention relates to means for employing light and color as a vehicle for expressing emotions, and particularly to means for controlling or modifying light when so employed.

The general object of my invention is to provide means for permitting of projecting designs therewith, coloring, tinting, or otherwise modifying the light from a given light source.

When using light and color variations as a means of expressing emotions, I may desire to variably illuminate varying areas and spaces, and it may be desirable to place a plurality of light sources in such close positions that the ray divergence and attendant weakening of the color will be the least possible. This would result in the light units being distant from the operator and from each other. It may become desirable to cause the rays of light of some light sources to cross those from other sources, or to be mixed therewith, or otherwise employed to use their possibilities in keeping with this invention. To accomplish this a plurality of spaced light sources may be employed, that are selectively controlled from a single remote point for showing unity of purpose and individuality of control not obtainable in any other way.

Another object of my invention is therefore to provide a remote-controlled mechanism that shall permit of coloring or otherwise affecting the light from a light source with relation to timed use and timed sequence relatively to each other, as is referred to in my co-pending application, Serial No. 657,731, filed August 16, 1923.

Another object of my invention is to provide a device of the above mentioned character that shall be economic in its operation.

Another object of my invention is to provide a light-controlling or light-modifying device wherein the colored or otherwise modified light rays come from the same focal point or in the same path, thereby affecting, by different colors or other modifications, the same light space without the deviation or variation that would be caused by two light paths and sources.

In its present embodiment my invention comprises a suitable source of light mounted in a reflector and located adjacent to a skeleton frame carrying a plurality of individual light-modifying members, such as color screens, texture veils or materials, ob-

jects and forms for projection, fluid lenses or boxes, lenses or any other means that may be employed to modify or enhance color impressions. Each of these light-modifying members are normally held by gravity in a depending position and are inoperative relatively to the light from said source, and are severally operatively associated with substantially circular members, each having a single tooth thereon. All of the single tooth members are pivotally mounted in spaced relation on a single shaft.

A member, of substantially U-shape, is pivotally mounted at its ends on the said shaft and carries a plurality of pawls that are respectively controlled by electro-magnets. The member of U-shape is continuously reciprocated by an adjustable speed motor. A resiliently-positioned latch bar is so located as to be engaged by a hook secured to each of the light-modifying members when the same have been swung into an operative position to affect the light from said source by the action of the reciprocating member and pawls, and thereby lock the light-modifying members in their operative positions. Each light-modifying member carries means for effecting the release of a previously locked light-modifying member or members.

In the drawings,

Figure 1 is a view, partly in front elevation and partly in section, of a device embodying my invention,

Fig. 2 is a view, in side elevation thereof,

Fig. 3 is a top plan view thereof,

Fig. 4 is a partial view, in side elevation, on an enlarged scale,

Fig. 5 is a view, in vertical section, of a part of a device embodying my invention,

Fig. 6 is a schematic view of a circuit controlling means comprising a part of my invention,

Fig. 7 is a view, in prospective, of a circuit controlling box, and

Fig. 8 is a schematic diagram of connections of a driving motor operatively associated with the device embodying my invention.

In the drawings, 11 represents a suitable base or other supporting structure upon which is mounted a skeleton frame 12, and a second skeleton frame 13, the latter supporting a light source 14. The light source 14 is here illustrated as an incandescent lamp of relatively high power that is energized by

current carried thereto through a suitable supply circuit conductor 15. The numeral 16 indicates a suitable reflector within which the light source 14 is mounted, and which
 5 may be of any suitable or desired shape and size to effect the desired distribution of light relatively to an area or to a space to be illuminated. While I have illustrated an elongated and relatively narrow reflector, I wish
 10 it to be understood that this is illustrative only, and that I may employ any desired kind of reflector and may employ also a hood or ray-absorbing shield to counteract the effect of any unfiltered light rays that are reflected backwardly from the color screens to
 15 be hereinafter described.

In one part of the frame 12 located adjacent to the light source 14 there is mounted a horizontally extending shaft 17 on which
 20 is journaled a swinging member 18, of substantially U-shape, mounted on the shaft at or near the outer ends of the two arms. Loosely mounted on the said shaft between the arms of the member 18 are a plurality of circular members 19, each having a single tooth
 25 21 provided on its outer or peripheral surface. The members 19 are suitably spaced from each other by separating collars 22.

Each of the members 19 has fixed thereto
 30 and suspended therefrom an arm 23, to which is secured a holder 23^a for a lens or plate of colored glass or other light-coloring or light-modifying material or object here shown generally as a circular disk 24. The
 35 shaft 17 is so mounted in the skeleton frame 12 as to extend substantially parallel to the axial line of the light produced by the light source and directed by the reflector. The holders 23^a are so positioned that while in
 40 operative and while under the influence of gravity and of a spring or other means (not shown) to keep them from swinging, they hang vertically below the shaft 17 and may be swung, by mechanism to be hereinafter
 45 described, into such a position that the center of the disks 24 shall be in the line of projection of the light from the light source 14. I have not illustrated or described any specific means for holding the disks 24 in the
 50 holders 23^a, as any desired means may be employed that will permit of inserting and of removing them easily and quickly. I have also deemed it unnecessary to illustrate or describe any specific means for preventing
 55 swinging of the holders as this forms no part of my invention and any of the well known methods or devices may be employed.

The upper end of the member of U-shape 18 has pivotally connected thereto a link 25,
 60 the other end of which is connected to the end of a crank arm 26 that is secured on one end of a shaft 27 mounted in suitable bearing members in the skeleton frame 12. A gear wheel 28 is mounted on the other end of the
 65 shaft 27 and is operatively engaged by a

pinion 29 that is, in turn, mounted on a shaft 31 also carried in suitable bearings in the skeleton frame 12. A pulley 32, of relatively large diameter, is mounted on the other end of the shaft 31, and a driving belt
 70 33 running over this pulley and over a driving pulley 34 of an electric motor 35, causes rotation of the pulley 32 of the shaft 31 and the shaft 27, and an oscillating or reciprocating movement of the member of U-shape
 75 18 on the shaft 17.

The speed of the motor 35 and the speed reduction effected by the hereinbefore described train of gear wheels provides substantially one complete reciprocating movement of the member 18 per second, and as it is not only desirable but necessary to vary this time for reasons to be hereinafter set forth, I employ a shunt wound motor that is provided with a shunt field rheostat 36,
 80 (see Fig. 8) to permit of varying the current through the field of the motor and thereby varying the speed of the motor and also of the member 18 within any desired limits. The correlation of the parts and their operating characteristics are such as will result in quiet and practically noiseless operation.

This motive power provides the first of a number of timing factors in the device embodying my invention, reference to which
 85 will be hereinafter made in the description.

Extending laterally of the member of U-shape 18, adjacent to the upper or intermediate portion thereof, is a member 37 suitably secured thereto or integral therewith,
 90 and upon this member or portion 37 are mounted in side-by-side and spaced relation a plurality of electro-magnets 38. Each of the electro-magnets co-operates with an arm 39 of a bell crank lever pivotally mounted
 95 on the member 37. The other arm 41 of the bell crank lever is so located as to be in position to co-operate with the tooth 21 of the co-operating circular member 19, but is normally held out of engagement therewith by
 100 a spring 42 that has one end connected thereto and the other end connected to a plate member 43 secured to the portion 37 and extending parallel thereto.

An adjustable stop member 44 is provided
 105 for each of the bell crank levers hereinbefore described, and comprises a machine screw extending through openings in the member 43 and locked in position by a plurality of
 110 nuts 45. When the electro-magnets 38 are not energized, the bell crank lever comprising the arms 39 and 41, occupies the position indicated by the broken lines in Fig. 5, and the frame 18 may be oscillated or given a
 115 reciprocating motion as hereinbefore described without the end of the arm 41 coming in contact with the tooth 21 of the member 19. If however, by any suitable means, one of the electro-magnets 38 is energized, the arm 39, constituting the armature of its
 120 125 130

co-operating magnet 38, is attracted thereby and moved into the position illustrated by the full lines in Fig. 5. In this position the end of the arm 41 will operatively engage the tooth 21, and as the member of U-shape 18, together with the electro-magnets and pawls, is reciprocated the member or members 19 thus engaged are given a turning movement on the supporting shaft, and the disc or discs 24 in the normally depending members 23^a are moved to one side and to substantially the position illustrated by the broken lines in Fig. 5 of the drawings. In this position the center of the disc is substantially in alinement with the axis of the beam of light produced by the light source and is therefore effective to color or otherwise modify the same, in accordance with the character of the particular screen or screens.

The skeleton frame 12 comprises a lateral supporting bracket 46 between whose arms there is pivotally mounted a latch bar 47, of substantially inverted V-shape in lateral section. The latch bar is pivotally mounted on suitable pivots 48 and has on one of its portions adjacent the edge thereof, a lip member or holding strip 49 substantially co-extensive with the member 47 and made of relatively hard material in order to show but little wear during long periods of operation.

The latch bar 47 is maintained in its normal position substantially as shown in Fig. 5 of the drawings by a spring member 51 extending between an integral portion 52 of the latch bar 47, and a suitable holding member 53 secured to the bracket 46. Means for limiting the turning movement of the latch bar under the influence of the spring 51 may comprise a machine screw 54 and a plurality of lock nuts 55.

The lip or holding strip 49 is adapted to be engaged by a hook member 56, one of which is mounted on each of the members 23 intermediate the ends thereof. Means for effecting the release of a light modifying member or members from the operative positions thereof upon the movement of another light modifying member or members into the operative position, comprises a machine screw 57 located a short distance below the hook member 56 on each of the members 23. Each of the machine screws 57 is adjustable in the member 23 and may be held in any desired position relatively thereto by lock nuts 58. When one or more of the light modifying members 23^a are moved from their normal inoperative position to their operative position, the release member 57 strikes the outer one of the flanges of the member 47, thereby causing it to have a turning movement in a counterclockwise direction (as illustrated in Fig. 5 of the drawings), and causing the lip member 49 to disengage the hook member or members 56 then in operative engagement therewith, whereby the

previously operative light modifying member or members are permitted to return to the inoperative position by the action of gravity, where they are held by any means (not shown) that will keep them from swinging back into the light path.

The replacing of the light modifying member or members previously operative by one or more moved into operative positions is so timed as to allow no unmodified light to become visible between these operations. The replacement is accurately timed to allow no fault in between and this constitutes a second timing factor in the device.

As was hereinbefore stated, any desired number of such light units may be employed to produce the desired effects, and it may become necessary to locate the respective light sources in widely separated positions with respect to each other and to the area or the space to be illuminated thereby. Hence it becomes necessary to be able to operate the various moving mechanisms of the type hereinbefore described from a single remote point, and in order to permit this I have devised a relatively simple and compact means. A box 59 of relatively small dimensions has mounted therein a plurality of pivotally mounted, elongated keys 61, located in side-by-side relation, and normally maintained in their inoperative or raised position by a spring 62. Each of the keys 61 has suitably secured thereto on the under side thereof, an elongated resilient contact member 63 substantially co-extensive with the key 61. The outer end of the resilient member 63 is adapted to operatively engage a stationary contact member 64, one of each of these being provided under the respective keys and contact members 63. The contact members 63 are respectively connected by suitable conductors to one end of the winding of the electro-magnets 38, the other ends of the windings being connected together and to one side of conductor 65 of a suitable source of supply of electric energy. The stationary contact members 64 are electrically connected together and to the other conductor 66 of the source of supply of electric energy.

It may be noted that this side-by-side arrangement of the elongated keys is an adaptation to the relative position and placement of the fingers and the thumb of the operator's hand and to the possibilities of their use. By this means simultaneous operative engagement of a plurality of co-operating contact members may be effected, or any desired sequence or selection of operative engagement may be easily effected by the operator. Where a plurality of light sources are to be controlled by one operator the respective keys of different control boxes may be interconnected or interlocked to permit one pressure to actuate all light modify-

ing mechanisms simultaneously and similarly. The movement of a light modifying member into an operative position only upon finger pressure being applied by an operator constitutes a third timing factor of the mechanism.

The resilient switches operatively associated with the pivotally mounted keys are particularly applicable when the device embodying my invention is employed where delicacy of feel is a factor in perfection of timing. This would particularly be the case where the device embodying my invention is employed in accompanying a piece of music where the shadings of the light are to be changed from one tint to another, which changes, though infrequent, are still governed by the beat of the music. This timing through muscular feel is a fourth timing factor of the mechanism.

The operation of the device embodying my invention is substantially as follows:—the motor 35 is suitably energized and is effective to cause a reciprocating movement of the member 18 on the shaft 17, and as hereinbefore stated, these movements may be at the rate of substantially one per second but in general will be such as is particularly applicable to the use made thereof. As long as none of the electro-magnets 38 are caused to be energized through the depression of any of the keys 61, the frame 18 together with the other parts hereinbefore described as operatively associated therewith will move back and forth without having any effect upon the light modifying members. If however, the operator desires to color or otherwise modify the light produced by the light source and directed in substantially a single light path, he depresses one of the keys 61 thereby energizing one of the electro-magnets 38. The energized electro-magnet attracts the co-operating arm 39 causing the arm 41 to be moved into position to engage the tooth 21 of the co-operating member 19, and upon the following turning movement of the member 18 in a counter-clockwise direction (as viewed in Fig. 5 of the drawing), the tooth member 19 is given a turning movement of substantially forty-five degrees upon the shaft 17. This causes a turning movement of the member 23^a and the disc 24 in a counter-clockwise direction until the hook member 56 has operatively engaged the lip member 49 of the latch bar 47 to temporarily hold the disc 24 in the path of light from the light source 14. The further continuous movement of the member 18 has no effect upon the light modifying member or members that have been moved into their operative positions. The mechanism therefore provides a temporary operative engagement of the motor constituting the source of power, to the light modifying element to effect a movement

thereof from its normal depending inoperative position to its normal operative position where it is located in the path of light from the light source. It may be further noted that the motor-operated means is continuously actuated and that the operator may control the selective temporary operative engagement of the motive power to the light modifying elements from a remote point by electric means.

When the operator desires to again modify or color the light he may depress another one of the keys 61 and the same action as hereinbefore described is repeated for the energized electro-magnet 38 and the co-operating bell crank lever and light modifying member. The adjustment of the tripping member 57 of the light modifying member 23 is such as to engage the co-operating flange of the latch bar 47 after the light modifying member is in or slightly beyond its final operative position, causing a turning movement of the latch bar in a counter clockwise direction as viewed in Fig. 5 of the drawings. This releases the previously locked light modifying member or members which move from the operative position to the normal inoperative position, these being respectively indicated by the broken and the full lines in Fig. 5 of the drawings. Any desired means for preventing swinging of the arms in their inoperative position may be provided. The latch bar 47 quickly returns to its normal operative position under the influence of the spring member 51 and the lip member 49 is effective to hold the projecting part of the hook member 56 upon the return of clockwise movement of the light modifying member, whereby the light modifying member 23 and its disc 24 are held in their normally operative position.

If the operator desires, he may energize more than one electro-magnet simultaneously, and the corresponding number of light modifying members will be caused to move into their operative positions as described above. If for instance, one of the light modifying members is in its operative position and the operator desires to cause another one of the light modifying members to be moved to its operative position and to retain the first one in its operative position, it is only necessary for him to depress the two keys corresponding to the light modifying member already in position and to the one which it is desired to move into operative position. The release or tripping member 57 of the light modifying member moving into its operative position causes a momentary release of the previously locked light modifying member, which is however retained in its operative position by the action of the portion 41 of the bell crank lever being in such position as to engage the tooth 21 of its co-operating member 19. This holds the mem-

ber 23 in its operative position until the temporarily released latch bar 47 has been returned to its normal operative position by the spring 51 when it will engage the hook members 56 of the light modifying members that are in their operative positions.

The device embodying my invention thus provides a continuously operative source of power whose speed may be varied within wide limits, and that may be selectively and temporarily operatively connected with a plurality of individual light-modifying means that are located in side-by-side relation in depending and normally inoperative position as regards the light from a given light source. Any desired number of light-modifying members may be moved simultaneously from their normal inoperative positions to their operative positions, and they may be released, partially supplanted, or reinforced by other members in any desired sequence or at any desired time.

The device embodying my invention further provides a relatively simple means whereby a light-modifying member being moved into position effects the release of any light-modifying member or members previously locked in their operative positions, and also permits of re-locking any desired light-modifying member previously locked, in its operative position.

As was hereinbefore stated, I do not desire to be limited to the particular form of reflector illustrated, but I prefer to employ a reflector of substantially the type illustrated wherein the lateral area of the path of light immediately outside of the reflector is much smaller than the area of the color screen that is to be moved into this path. As the light-modifying members are located in side-by-side position it is necessary that the area of the screen on the light-modifying member farthest away from the reflector be at least equal to the area of the beam or path of light from the reflector at that distance therefrom.

While I have specifically mentioned colored screens, I do not desire to be understood as limiting myself to such screens only, as I may wish to employ ruled screens of various kinds, objects or film images whereby any desired figure or figures may be outlined upon an area to be illuminated by the source of light.

The device embodying my invention further provides a relatively small and compact control box having a plurality of resiliently mounted keys therein, each having a resilient contact member associated therewith, which keys may be moved by the operator's fingers and thumb (used separately or together) easily and quickly into position to cause the associated parts of the mechanism to operate. Any desired number of such

control boxes may be located at one point where they may be actuated by an operator to effect the desired modifications of the respective sources of light in any desired choice as to sequence and time, or one control box may simultaneously control a plurality of light sources.

The device embodying my invention permits four timing factors to act jointly, these factors being as follows:—that of the motive power, that of the release action in relation to the operating action, that of the operating movement as the result of finger pressure, and finally that of muscular feel of the operator's fingers.

Various modifications may be made in the device embodying my invention without departing from the spirit and scope thereof, and I desire that only such limitations shall be placed thereon as are imposed by the prior art or are specifically set forth in the appended claims.

I claim as my invention:

1. In apparatus of the character described, in combination, a light source, a plurality of means for modifying the light from said source, so positioned as to be normally inoperative relatively to the light from said source, means for selectively moving any of said modifying means into an operative position to affect the light from said source, means for holding the modifying means in its operative position, and means carried by each light-modifying means for releasing a previously held light-modifying means to permit it to return to its inoperative position.

2. In apparatus of the character described, in combination, a source of light, a plurality of individual light-modifying means, a continuously reciprocated member, means for temporarily operatively connecting any of said light-modifying means to said reciprocated member to cause movement thereof to a position to affect the light from said source, and remote-controlled means for controlling the said co-acting means.

3. In apparatus of the character described, in combination, a source of light, a plurality of individual light-modifying means, a continuously reciprocated member, means for temporarily operatively connecting any of said light-modifying means to said reciprocated member to cause movement thereof to a position to affect the light from said source, and remote-controlled electromagnetic means for controlling the said connecting means.

4. In apparatus of the character described, in combination, a light source, a plurality of light-modifying means normally maintained by gravity in an inoperative position as regards the light from said source, and continuously reciprocated and remote-controlled means for selectively moving said light-

modifying means into position to modify the light from said source.

5. In apparatus of the character described, in combination, a light source, a plurality of light-modifying means normally maintained by gravity in an inoperative position as regards the light from said source, continuously reciprocated and remote-controlled means for selectively moving said light-modifying means into position to modify the light from said source, and means for locking any displaced light-modifying means in its light-modifying position.

6. In apparatus of the character described, in combination, a light source, a plurality of light-modifying means normally maintained by gravity in an inoperative position as regards the light from said source, continuously reciprocated and remote-controlled means for selectively moving said light-modifying means into position to modify the light from said source, means for locking any displaced light-modifying means in its light-modifying position, and means actuated by the moving light-modifying means for releasing a previously locked light-modifying means.

7. In apparatus of the character described, in combination, a light source having a single path of light, a plurality of individual light-modifying means pivotally mounted to swing into and out of said path of light, and remote-controlled means for selectively causing said light-modifying means to be swung into and retained in the path of light, said means comprising a reciprocating pawl and a toothed member actuated thereby.

8. In apparatus of the character described, in combination, a light source having a single path of light, a plurality of individual light-modifying means pivotally mounted to swing into and out of said path of light, and remote-controlled means for selectively causing said light-modifying means to be swung into and retained in the path of light, said means comprising an electromagnetically controlled reciprocating pawl and a toothed member actuated thereby.

9. In apparatus of the character described, in combination, a source of light, a plurality of individual light-modifying means pivotally mounted to move into and out of position to modify the light from said source, a continuously reciprocated frame, a plurality of pawls carried by said frame, a plurality of toothed members respectively connected to said light-modifying means, remote-controlled means for selectively controlling the operation of the pawls to cause the toothed members and associated light-modifying means to move into position to modify the light from said source, and means for releasably locking the said light-modifying means when moved into such position.

10. In apparatus of the character described, in combination, a source of light, a plurality of individual light-modifying means pivotally mounted to move into and out of position to modify the light from said source, a continuously reciprocated frame, a plurality of pawls carried by said frame, a plurality of toothed members respectively connected to said light-modifying means, remote-controlled electromagnetic means for selectively controlling the operation of the pawls to cause the toothed members and associated light-modifying means to move into position to modify the light from said source, and means for releasably locking the said light-modifying means when moved into such position.

11. In apparatus of the character described, in combination, a source of light, a plurality of individual light-modifying means pivotally mounted to move into and out of position to modify the light from said source, a continuously reciprocated frame, a plurality of pawls carried by said frame, a plurality of toothed members respectively connected to said light-modifying means, remote-controlled means for selectively controlling the operation of the pawls to cause the toothed members and associated light-modifying means to move into position to modify the light from said source, means for releasably locking the said light-modifying means when moved into such position, and means for causing them to release previously locked elements.

12. In apparatus of the chamber described, in combination, a source of light, a supporting frame, a plurality of individual light-modifying means pivotally mounted in said frame in side-by-side relation and each normally hanging in an inoperative position as regards the light source, a reciprocating frame, a plurality of toothed members operatively associated with the respective light-modifying means, a plurality of pawls mounted on said reciprocating frame for selectively causing said light-modifying means to swing into an operative position to modify the light from said source, a hook on each light-modifying means, and a latch bar so mounted as to be engaged by said hooks to retain the light-modifying means in its operative position.

13. In apparatus of the character described, in combination, a source of light, a supporting frame, a plurality of individual light-modifying means pivotally mounted in said frame in side-by-side relation and each normally hanging in an inoperative position as regards the light source, a reciprocating frame, a plurality of toothed members operatively associated with the respective light-modifying means, a plurality of pawls mounted on said reciprocating frame for selectively causing said light-modifying means

to swing into an operative position to modify the light from said source, a hook on each light-modifying means, a latch bar so mounted as to be engaged by said hooks to
5 retain the light-modifying means in its operative position, and means associated with each holder for causing the latch bar to

disengage the hook of any other previously engaged light-modifying means.

In testimony whereof, I have hereunto
10 subscribed my name this 9th day of October, 1923.

MARY HALLOCK GREENEWALT.