

July 12, 1938.

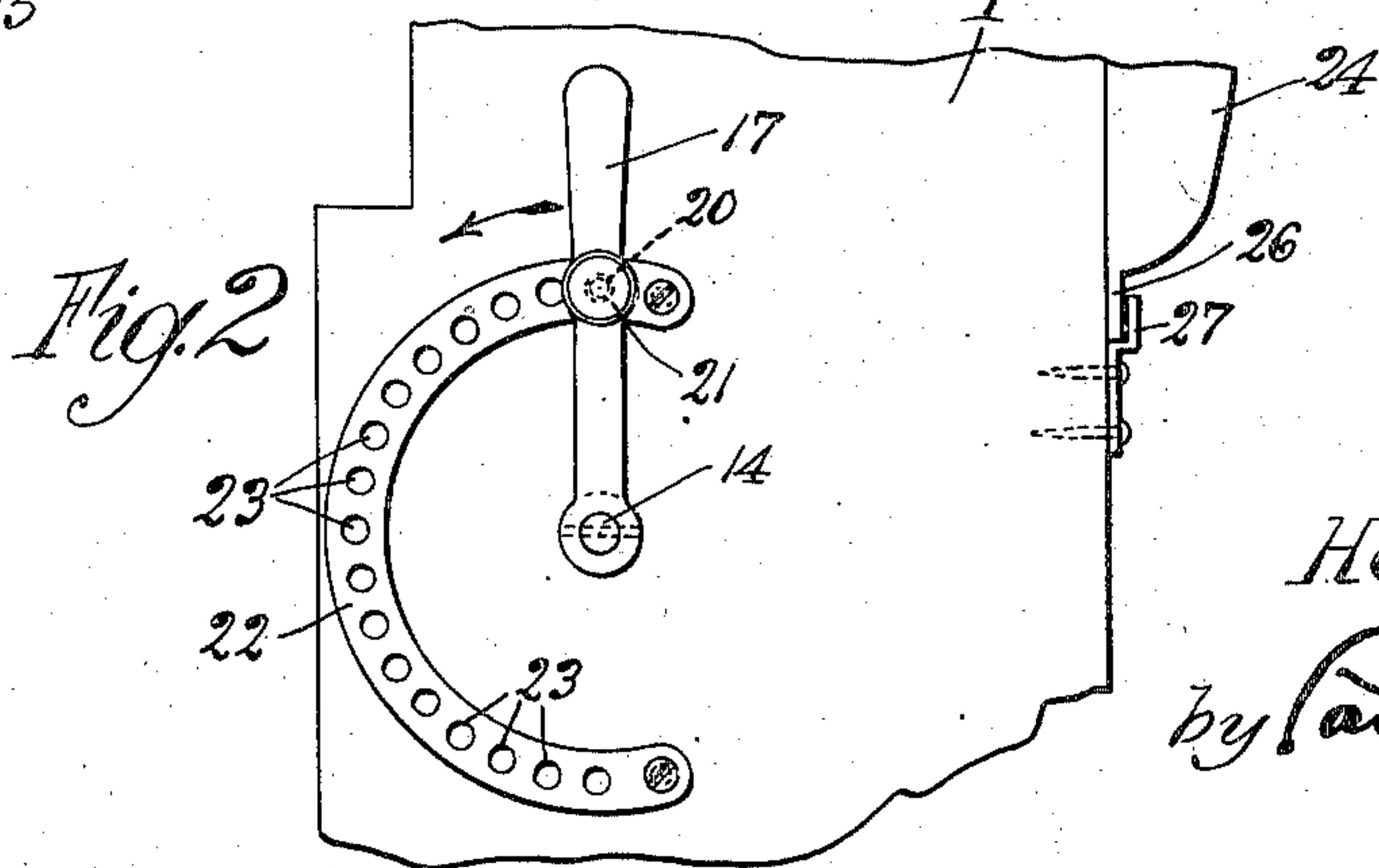
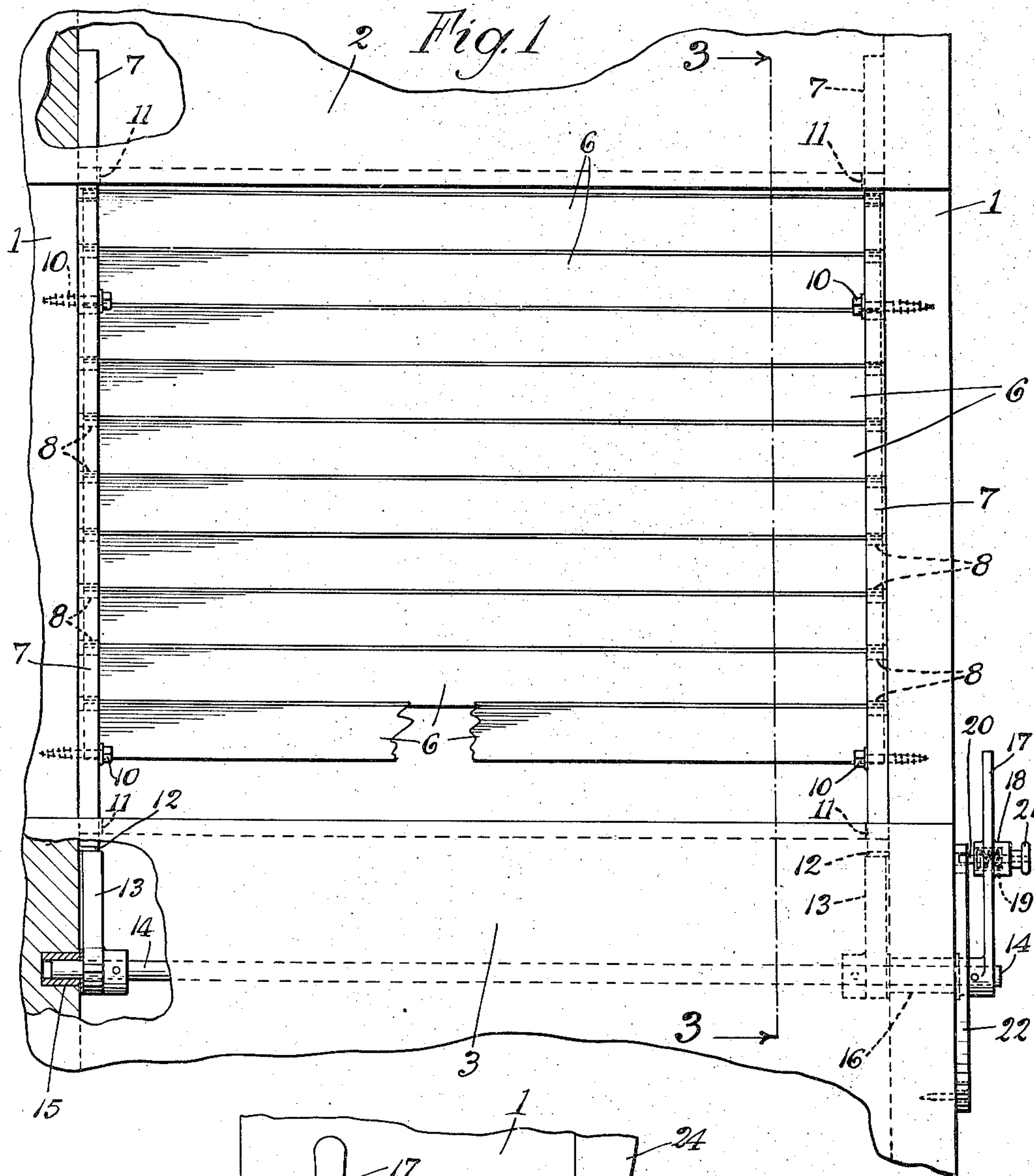
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2,123,361

DISPLAY DEVICE

Filed July 5, 1935

3 Sheets-Sheet 1



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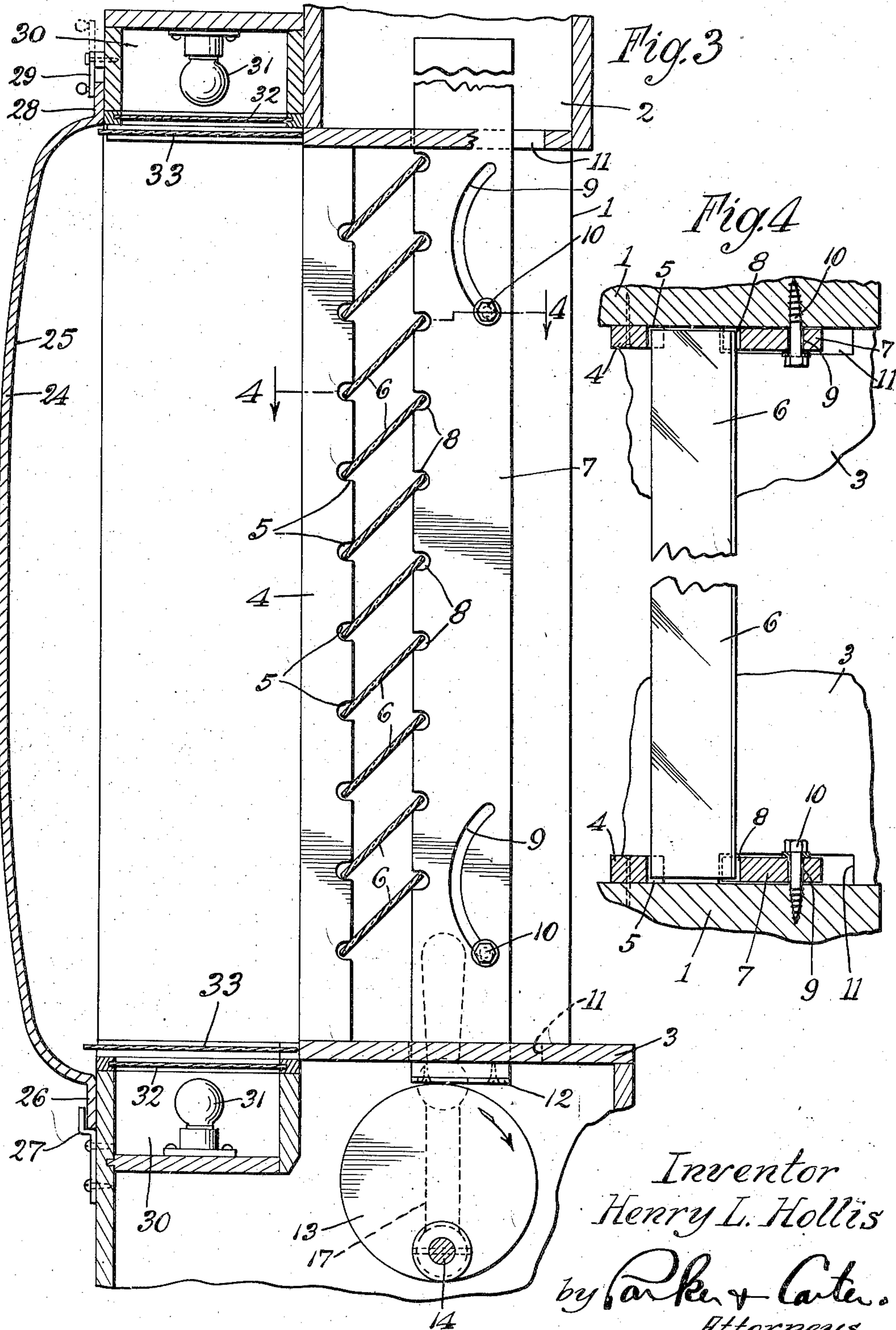
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3 Sheets-Sheet 2



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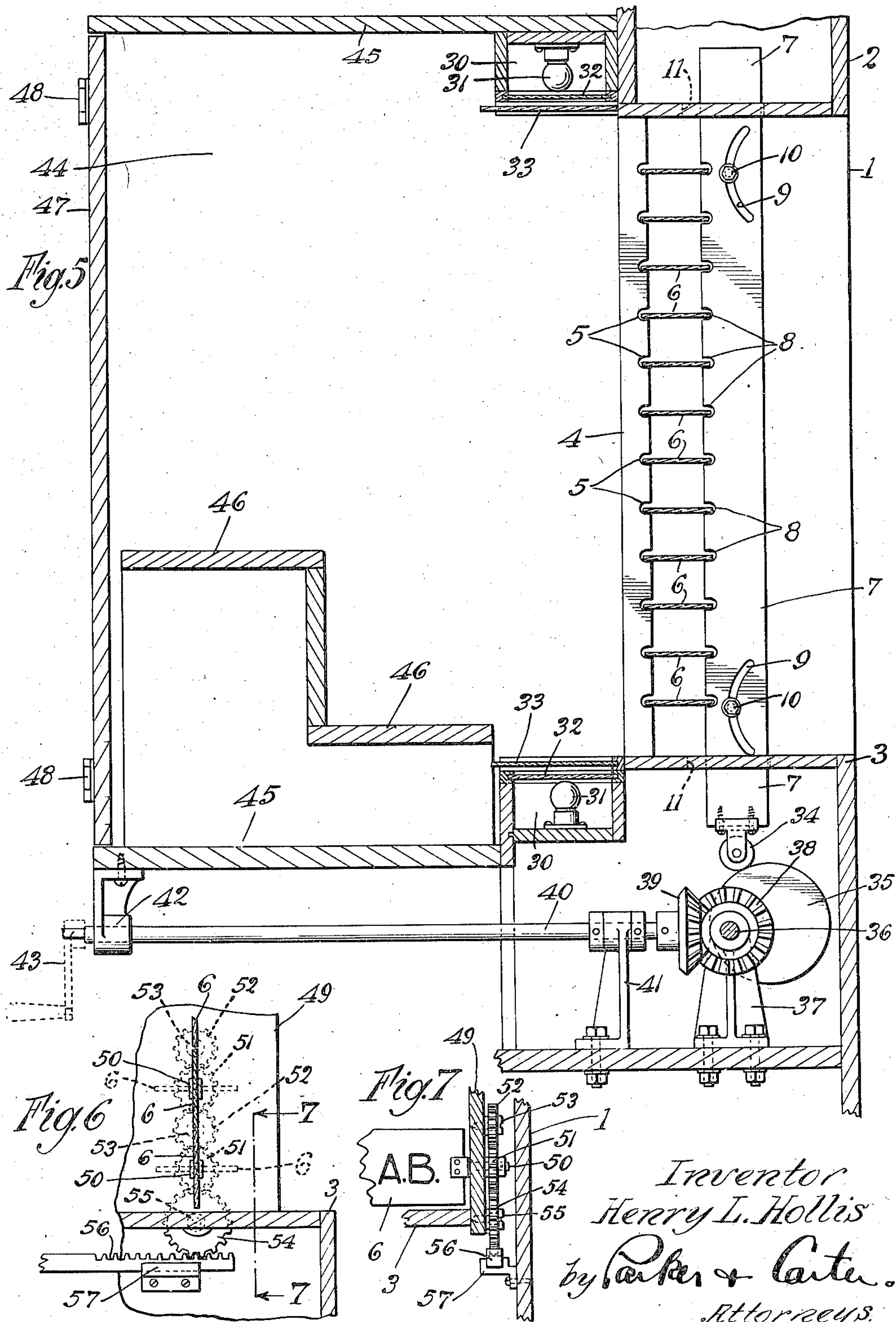
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UNITED STATES PATENT OFFICE

2,123,361

DISPLAY DEVICE

Henry L. Hollis, Chicago, Ill.

Application July 5, 1935, Serial No. 29,870

6 Claims. (Cl. 240—10)

This invention relates to an ornamental device for use as a display and illuminating apparatus. It has for one object to provide in connection with light sources means for providing an ornamental display. Another object is to provide means for varying the effect, direction, color and intensity of the lights. Another object is to provide an ornamental device in which light and movement cooperate to produce an ornamental effect. Another object is to provide in connection with a show case or display space an ornamental apparatus which may or may not be in combination with means for alternately displaying and concealing advertising matter, ornamental designs and the like.

Other objects will appear from time to time in the specification and claims.

The invention is illustrated more or less diagrammatically in the accompanying drawings, wherein:—

Figure 1 is a front elevation, with parts broken away and parts in section, showing one form of the device;

Figure 2 is a side elevation illustrating a detail of one form of the controlling and moving mechanism;

Figure 3 is a transverse vertical section taken at line 3—3 of Figure 1;

Figure 4 is a transverse generally horizontal sectional detail at line 4—4 of Figure 3;

Figure 5 is a view generally similar to Figure 3, illustrating a modified form in which the apparatus is combined with a show case or display suitable for showing goods;

Figure 6 is a vertical sectional view illustrating a modified form of the operating mechanism, arranged to permit rotation through 360°.

Figure 7 is a sectional detail taken at line 7—7 of Figure 4.

Like parts are designated by like characters throughout the specification and drawings.

In the form shown in the first four figures of the invention the apparatus is mounted in an opening, which might be a window, a door, niche, or any other suitable space. As shown, there are frame members 1, 1 which together with suitable top and bottom members 2 and 3 respectively define the opening. Positioned vertically on each side of the opening is a strip 4 provided with notches 5, and in each of which may be positioned a slat 6. The slats are preferably of glass and may have smooth reflecting surfaces, and may or may not be colored, or they may be provided with roughed surfaces or may have designs or reading matter upon them.

Positioned adjacent of the edge of the fixed strip 4 is a movable strip 7, notched as at 8 to receive the edges of the slats 6. Each of the movable strips 7 is provided with one or more generally arcuate slots 9 through which a screw, pin or bolt 10 penetrates to engage the frame member 1. The pins or screws by their cooperation with the arcuate slots 9 guide and define the movement of the strips 7, and as the strips are moved up and down they move toward and from the fixed strips 4, being a guide between the arcuate slots and the screws.

The top and bottom frame members 2 and 3 respectively are slotted as at 11 to receive the upper and lower ends of the movable strips 7 and the slots 11 also serve as guiding and threading members for the strips 7.

At their lower ends each of the strips 7 may have a metal working plate or shoe 12 which contacts an eccentric roller 13, fixed to movably mount a shaft 14 which is provided at one end with a bearing 15, at the other end with a bearing 16, and which carries at its outer and free end, fastened to it, a controlling or adjusting handle 17. The handle 17 is provided with an enlargement 18 which is hollow and within which is seated a compression spring 19. A locking pin 20 is positioned partially within the hollow and extends beyond it at each end. One end is a handle 21 from the pin 20, by means of which it may be pulled outwardly against resistance. A quadrant 22 with cavities, perforations, notches, or depressions 23 is positioned adjacent the handle 17 and arranged preferably concentrically with the shaft 14. When free to do so, the spring 19 forces the pin outwardly and into one of the cavities or perforations 23, holding the parts in adjusted position. When it is desired to move or change the adjustment by means of the handle 21 the pin is withdrawn from whichever perforation 23 it has occupied and the handle 17 may therefore be rotated to move the eccentric roller 13 and thus transfer the movable strips 7 up and down to tilt and to change the positions of the slats 6.

Seated at one side of the frame formed by the members 1, 2 and 3 is a reflecting member 24, which may be of any suitable shape and material and as shown in Figure 3 is somewhat concave. It is provided on its internal or concave face with a reflecting surface 25. Any suitable design or reading matter may be put upon this surface or it may be left plain as a merely reflecting surface.

In the particular construction here shown the reflecting member is removable and is provided

at its lower edge with a flange 26 which is received in an engaging member 27. At its upper end the member 24 is provided with a flange 28 which is engaged and held in place by a movable latch member 29. Any suitable means for removably holding the reflecting member in place may be used and for some purposes it may be fastened in position and need not be removed.

A wide variety of illuminating means may be provided to illuminate the slats or the reflecting surface, or both. In the particular construction shown a light holding box or reservoir 30 is provided above and below and in each of these boxes one or more light sources 31 is positioned. Any suitable form of lighting means may be provided. A glass 32 which may or may not be frosted is provided adjacent the light source 31 and removable slides 33 are positioned adjacent the outside of the glass 32. They may be colored and are removable to permit variation in color. While only one colored slide is shown it is to be understood that any suitable colored slides may be used and thus two or more colored slides might be in position adjacent the light source instead of the single colored slide 33 as shown.

In the modified form shown in Figure 5 the arrangement of the frames, the slats and the supporting strips, both fixed and movable, which carry the slats is the same as that above described. The mechanism for moving the movable strips 7 has however been changed. Instead of the fixed shoes 12 the edge of the movable strip is provided with a roller 34 which is contacted by an eccentric roller 35 fixed upon a shaft 36, carried in suitable bearings from supports 37. A beveled gear 38 is also fixed on the shaft 36 and meshes with a second beveled gear on shaft 40, carried from support 41. The shaft 40 may also be carried from support 42 adjacent its outer ends and may carry a handle 43 by means of which it is rotated. It may, however, be rotated in any other desired manner. It may be rotated manually or mechanically.

In the form shown in Figure 5 there is also associated with the display and illuminating device a goods display compartment 44, which may be of any suitable construction. As here shown it is formed of wall sections, or wall and floor sections 45, and provided with a plurality of shelves 46. It is closed at its rear by the door 47 movably positioned on hinges 48. The purpose of the shelves and display compartment is to provide a convenient place for advertising and displaying goods. The same space may, of course, be used for purely ornamental purposes when that is desired.

In the form of the device just described, the slats can be tilted through an angle definitely less than 360°. For many purposes that is sufficient. For some purposes, however, it is desired to have the slats so mounted that they may be tilted further and may even be rotated through a complete circle. The mechanism shown in Figures 6 and 7 provides one form for accomplishing this purpose. In the form there shown the slats are supported on frame or strip members 49 which provide bearings for short shafts 50. Each slat 6 is provided with one of the shafts 50 at each end and it is thus mounted to be rotated through a complete circle. On the opposite end of each shaft 50 is positioned a gear 51 and between each gear 51 is mounted an idler gear 52 on stud 53. The idler gears 52 are provided so that all of the slats will rotate

in the same direction and that might be omitted and the gears 51 might mesh with each other if the reversal of direction which this would cause is not objectionable. As a matter of convenience the bottom gears 52 are shown meshing with driving gears 54, each positioned upon a stud 55 and engaging a rack 56 carrying one or more guides 57. The rack may be moved back and forth and is preferably of sufficient length to cause the slats to rotate through less than 360°.

In each of the forms of the devices shown the means provided for tilting or rotating the slats may be also infinitely varied. It may be manual or mechanical. The mechanism shown in Figure 5 might be driven by a motor, causing it to operate automatically, to reverse its direction automatically and to carry out automatically any desired series of movements. The same is true of the rack and gear driving means shown in Figures 6 and 7. This latter form might be further varied by substituting for the rack a shaft or other driving means to cause the gear 54 to rotate directly and this rotation may be continuously intermittent or may be caused to reverse automatically and otherwise to perform any desired series of movements. The invention is therefore not limited to the particular driving and tilting mechanism shown.

As it has been stated above, the slats themselves may be given any desired variation and may have designs, reading matter or the like upon them. As shown in Figure 7 the letters "A" and "B" are marked on one side of the slats 6. This is merely to illustrate the use of reading matter on the slats. Any reading matter may be applied to them and the letter may not be completely on one slat but may extend over on to a plurality of slats. In the same way designs may be drawn on the slats and may be complete in one slat, or continuous over several.

It will be realized that whereas I have herewith shown and described a practical operative device, nevertheless many changes might be made in the size, shape, number and disposition of parts without departing from the spirit of my invention and I wish, therefore, that my showing be taken as in a sense diagrammatic.

It will be recognized that the device of this application resembles a blind of the so called "Venetian type", at least in the sense that it comprises a series of flat slat like members which are mounted together generally parallel to each other, and that means are provided for tilting them preferably in unison, so that to a greater or lesser degree they close the opening in which they are seated and so that by means of such tilting the angle of reflection with which light is reflected from their surfaces may be varied at will. The device however differs radically from the recognized Venetian blinds of commerce in the fact that it may be made of entirely transparent or translucent material so that it can be used to serve a purpose totally different from that for which the normal Venetian blind is suited. Thus the normal Venetian blind, being made of opaque material, must always shut off some light and in various positions of adjustment can, and is intended to, shut off part of the light which would otherwise pass through the opening in which the blind is installed. In contrast with this effect, the blind of the present application when made of transparent or translucent material, as it normally is, shuts off little or none of the light and serves primarily as an ornamental and light reflecting device. Where,

as has been suggested above, the material may be opaque, it then serves only as a light reflecting and ornamental and display means.

The use and operation of my invention are as follows:

In whatever form the apparatus is embodied, it provides a light means and a series of slats and means for moving the slats. The light means may be continuous or changing and the resultant illuminating effects may be all infinitely varied by changing the color, intensity, and direction of the light and by changing the position of the slats which are themselves directly illuminated and which act also as reflectors to reflect the light. Any combination of lights might be used. The top and bottom lights might be the same or they might not be. Other lights might be provided about the sides of the frame.

Where the device is used as a means for displaying goods the ornamental effect above described is present and also the slats may be so arranged as to make the goods visible at times and to shut off visibility of them at other times. The text of the advertising and design matter if it is placed on the slats may be of such character as to combine with the goods on display. Thus the advertising matter on the slats may describe the goods or describe and illustrate use of them while the goods themselves are on display on the shelves or otherwise adjacent the slats. The slats themselves of course may be entirely transparent, entirely opaque, or translucent, or any combination of these. Being made of glass they are normally transparent but their surfaces may be so treated as to alter this considerably and they may of course be colored or colorless.

While in the form of the device shown the light sources are indicated as being located in general proximity to the device itself, it is to be understood that the location of these might be changed and that the light might be projected upon the reflecting surfaces from a distance, or the light sources shown in the drawings might be retained and additional sources provided for projecting light from a distance. In fact any combination of light sources may be adopted for the purposes of the present invention. The individual light sources may be constant or may be varied. They may move their position; their intensity may be increased or decreased; they may be turned off and on or otherwise changed. The invention is, therefore, not limited to the use of any particular light source or sources nor to any particular location of the light sources and while it has been suggested that colored light may be used, uncolored light may be used and any combination or variation of colors and intensities may be used.

I claim:

1. An ornamental light device comprising a casing having an open front wall defining the light aperture of the device, a light source positioned within the casing and outside of the projected outline of the light aperture, means for directing said light through the open front wall of the casing, a diffusing grill positioned in said open front wall and comprising a plurality of spaced light reflecting and transmitting strips positioned transversely of the light aperture and inclined in the direction of the light beam passing through said aperture, whereby to present appreciable surface areas to the light flux to thoroughly diffuse the same in passing from said casing.

2. An ornamental light device comprising a casing having an open front wall defining the light aperture of the device, a light source positioned within the casing and outside of the projected outline of the light aperture, means for diffusing light emanating from said source, reflecting means for directing said diffused light through the open front wall of the casing, a diffusing grill positioned in said open front wall and comprising a plurality of spaced light reflecting and transmitting strips positioned transversely of the light axis and inclined in the direction of the light beam passing through said aperture, whereby to present appreciable surface areas to the light flux to thoroughly diffuse the same in passing from said casing.

3. An ornamental light device comprising a casing having an open front wall defining the light aperture of the device, a light source positioned within the casing and outside of the projected outline of the light aperture, reflecting means for directing said light through the open front wall of the casing, a diffusing grill positioned in said open front wall and comprising a plurality of spaced light reflecting and transmitting strips positioned transversely of the light aperture and inclined in the direction of the light beam passing through said aperture, whereby to present appreciable surface areas to the light flux to thoroughly diffuse the same in passing from said casing, said strips being positioned and maintained to be clearly seen by an observer.

4. An ornamental light device comprising a casing having an open front wall defining the light aperture of the device, a plurality of separate light sources positioned one above and one below said open front wall within the casing and outside of the projected outline of the light aperture, reflecting means for directing said light through the open front wall of the casing, a diffusing grill positioned in said open front wall and comprising a plurality of spaced light reflecting and transmitting strips positioned transversely of the light aperture and inclined in the direction of the light beam passing through said aperture, whereby to present appreciable surface areas to the light flux to thoroughly diffuse the same in passing from said casing.

5. An ornamental light device comprising a casing having an open front wall defining the light aperture of the device, a plurality of separate light sources positioned one above and one below said open front wall within the casing and outside of the projected outline of the light aperture, means for directing said light through the open front wall of the casing, a diffusing grill positioned in said open front wall and comprising a plurality of spaced light reflecting and transmitting strips positioned transversely of the light aperture and inclined in the direction of the light beam passing through said aperture, whereby to present appreciable surface areas to the light flux to thoroughly diffuse the same in passing from said casing, and transparent colored members of different colors positioned between said light sources and said strips to cause the light from one source to be of one color and the light from another source to be of a different color.

6. An ornamental light device comprising means defining a compartment having a light aperture, a diffusing grill positioned in said light aperture and comprising a plurality of spaced light reflecting and transmitting strips positioned transversely of the light aperture and inclined in the direction of the light beam passing through

said aperture, whereby to present appreciable surface areas to light flux passing from said compartment to thoroughly diffuse the same, a plurality of separate light sources positioned behind
5 the diffusing grill and outside of the projected outline of the light aperture, means for directing light from said sources through the diffusing grill,

and transparent colored members of different colors positioned between said light sources and said diffusing grill and outside of the projected outline of the light aperture, to cause the light from one source to be of one color and the light
5 from another source to be of a different color.

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