J. C. BUTTNER & F. J. MERKLEIN.

STEREOPTICON DISSOLVER FOR MOVING PICTURE MACHINES.

APPLICATION FILED MAR. 19, 1915.

1,144,108. Patented June 22, 1915.

Fig. 1.

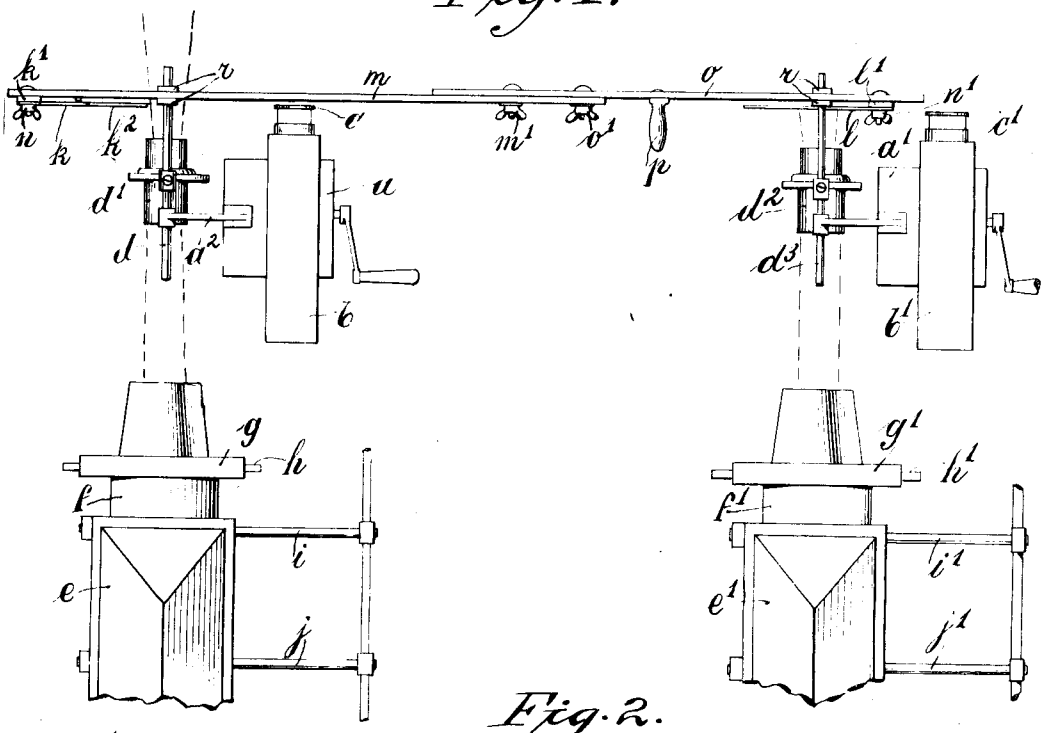


Fig. 2.

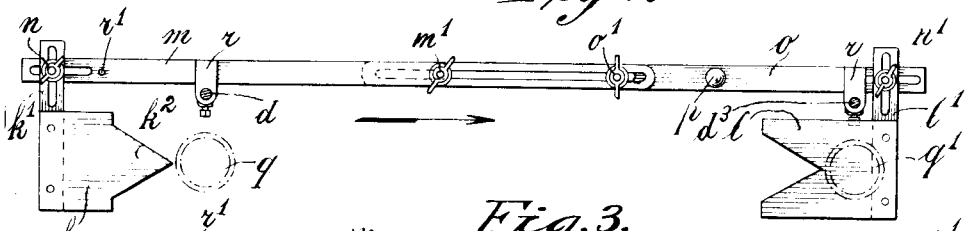


Fig. 3.

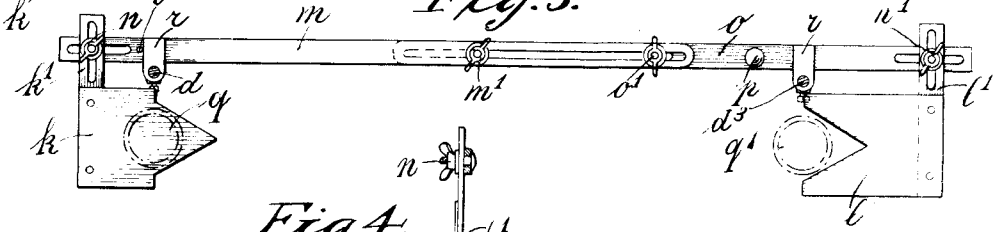


Fig. 4.

Fig. 5.

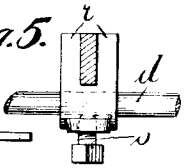


Fig. 6.



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STEREOPTICON-DISSOLVER FOR MOVING-PICTURE MACHINES.

1,144,108. Specification of Letters Patent. Patented June 22, 1915.

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To all whom it may concern:

Be it known that we, JULIUS C. BUTTNER and FREDERICK J. MERKLEIN, both citizens of the United States of America, and residents of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Stereopticon-Dissolvers for Moving-Picture Machines, of which the following is a specification.

Our invention has reference to improvements in stereopticon dissolvers for moving picture machines. The unit of such machine permits the pictures or announcements shown to pass from one to the next by the dissolving effect. This is attained by the alternate use of the two stereopticon lenses and at the same time the delay of unpleasant sliding of the pictures across the field in view of the audience is avoided.

The dissolvers now used in moving picture machines require two extra lamp houses, two extra stereopticon lenses, two pairs of extra condenser lenses, extra wiring, extra resistance and also, in many States of the Union, extra floor space for the dissolver. The enumerated extra appliances involve a great initial cost.

The present invention has for its object to produce dissolvers by means of which all the enumerated appliances are dispensed with. This saves the cost of procuring them and also the cost of keeping them in repairs. The saving of floor space is of additional advantage. This has been primarily attained by producing a stereopticon dissolver composed essentially of two diaphragms of specific construction and operation one of which is at the left of the machine near the one stereopticon lens and the other at the right of the machine near the second stereopticon lens. Both diaphragms move, say for instance, from left to right, at the same ratio. As the left diaphragm gradually covers the left lens, the right diaphragm gradually withdraws from the right lens and uncovers it. This represents in general, the dissolving action. The same dissolving action takes place when the diaphragms are returned into their initial position.

In order to render the invention entirely clear, reference is had to the accompanying drawing, in which:

Figure 1 represents in top plan view, a unit of moving picture machines embodying in desirable form the present dissolver. Fig. 2 is a front elevation of the dissolver showing the left lens uncovered. Fig. 3 is a similar view showing the right lens uncovered. Figs. 4, 5, and 6 illustrate certain parts in detail.

Similar characters of reference denote like parts in all the figures.

Our stereopticon dissolver for moving picture machines may be applied to any two machines whether they are of the same make and identical construction or whether the unit of machines is composed of two machines of different make. The present dissolver is so constructed that it may be attached to two moving picture machines without changing or disarranging anything thereon. This has been accomplished by means of an exceedingly simple construction of the novel dissolver as will be apparent from the description of the detail parts.

As shown in Fig. 1 of the drawing, the two moving picture machines are placed side by side in a horizontal plane. Merely conventional machines are indicated, comprising a box a, a film box b and a lens c for the moving picture machine. The same parts of the moving picture machine shown to the right in Fig. 1 are designated by a^1, b^1 and c^1. The lens box of the left stereopticon is connected to the moving picture machine in the usual manner by a cross bar a^2 which slides on the lens rod d. The lens box d^1 in connection with the moving picture machine box a is provided with the usual stereopticon lens mounted or suspended within the box. The source of light pertaining to this stereopticon is shown in conventional manner and comprises the lamp house e, the condenser f, the stereopticon slide g located on the stereopticon slide-holder h, and the usual sliding device i, j to bring the lamp house in focus with the moving picture machine when desired.

The described arrangement is likewise shown in conventional form in connection with the stereopticon shown to the right. The lamp house is designated by the reference character e^1, the condenser f^1, the lantern slide g^1 and the stereopticon slide h^1, and the sliding device to bring the lamp house in focus with the moving picture machine by the reference characters i^1, j^1.

The lens box located in front of the lamp

house a^1 is designated by the reference character d^2 and its lens rod by d^3.

Our novel dissolver is applied before the stereopticon lenses, as shown in Fig. 1 and the object of this device is to dissolve one stereopticon slide into another one. The dissolver essentially consists of two diaphragms k, l of peculiar construction shown in detail in Figs. 2 and 3. The diaphragm k shown to the left consists of a body portion having a supporting strip k^1 at the extreme left and extending vertically. Its opposite end is cut so as to form a pointed inner portion k^2.

The diaphragm l shown to the right has a body portion and a vertically rising strip l^1. Its inner portion is cut out to form an incision of exactly the same angular relations and size as the pointed portion k^2 of the diaphragm k so that this portion k^2 fits into the incision of the diaphragm l when these are not yet mounted. The diaphragms are made of metal sheeting, preferably of Russian iron so as to be light. The supporting bars or strips k^1, l^1 may be formed integrally therewith but for economical reasons the strips or bars k^1, l^1 are made separate and secured thereto whereby material is saved. The diaphragm bar k^1 is adjustably secured to a long cross bar m by means of a thumb screw n. The diaphragm l is adjustably secured to a long cross bar o by means of a thumb screw n^1. Each of the bars m, o is provided with a slot and two set screws m^1, o^1 serve to adjust the distance between the two diaphragms which corresponds to the distance of the stereopticon lenses. A wooden handle p serves to shift the bar o when adjustment is required.

As previously stated the stereopticon lenses are suspended from the lens rods. The lens q, shown near the diaphragm k is entirely uncovered and the lens q^1 is fully covered by the diaphragm l. If now the diaphragms are moved from left to right as indicated by the arrow in Fig. 2, then the pointed portion k^2 of the diaphragm k gradually passes before the lens q and the inner portion of the diaphragm l with the incision gradually removes from the lens q^1. This is taking place until the lens q is entirely covered and the lens q^1 entirely uncovered. Hereby the one stereopticon slide is dissolved into another one and as both diaphragms move at the same ratio the dissolving of one stereopticon slide into another one is effected in a very gradual and uniform manner. It is evident that during the return of the diaphragms into their original positions, the same dissolving effect is attained, the lens q becoming gradually covered and the lens q^1 uncovered at the same ratio, as shown in Fig. 3.

In Fig. 4 of the drawing the connection of the diaphragm k to the slide bar m by means of the thumb screw is shown in sectional side elevation.

Fig. 5 shows in sectional elevation a block r in which a slide bar m or o is mounted. This block r is located on the stereopticon lens rod d and when properly adjusted a set screw s secures the connection.

In order to render this stereopticon dissolver universally applicable, the two slide bars m and o are connected in this instance by a third slide bar t and accordingly 4 set screws or securing thumb screws at least are required to keep the diaphragms in an adjusted position. These set screws are designated by the letters u, v, w, and x. With this additional third slide bar t it is possible to connect a unit of machines which are at any desired distance from each other and at their ends the dissolver diaphragms may be attached.

Our stereopticon dissolver is attached to the moving picture machine in a simple manner. The guide blocks are first placed one on each stereopticon lens rod. This may be done either in front or rear of the stereopticon lenses. The guide blocks point upward and a securing thumb screw is located under the lens rod. Now, the distance between one lens rod of one machine and the lens rod on the other machine is measured, and the slide bars are connected approximately for that distance. A diaphragm is then attached at the outer end of each slide bar. When thus assembled the entire device is placed on the guide blocks.

Should the distance between the two lens rods be greater than permissible for two slide bars then the universal joint is employed which consists of the three slide bars herein described with reference to Fig. 6.

When mounted the slide bars and diaphragms are placed in the exact position and secured by the thumb set screws. The diaphragms are adjusted so that the point of the left diaphragm is exactly in the center of the left stereopticon lens and the inner angle point of the diaphragm on the right is directly in the center of the right stereopticon lens. This adjustment is effected by means of the wooden handle located on one slide bar.

The dissolver is operated in substantially the following manner: The operator stands between the two machines facing the screen. First, he inserts a slide into the slide carrier of the machine to the left and then a second slide into the slide of the machine to the right. Both lamps should be lighted and both dowsers down. Before showing the first slide the dissolver is pushed well to the left to uncover the lens on the left machine and to cover the lens on the right machine. The dowsers on both machines are now raised and left in the raised position until

all slides have been shown. When the first slide has been shown long enough the small handle on one of the slide bars is grasped and the dissolver pushed slowly to the right until the stop r^1 has been reached. As the light is shut off from one lens evenly and gradually it comes on to the other lens at the same ratio. Now, the first slide is removed and a third slide put in its place whereupon the dissolver is slowly shifted to the left. When the second slide has been sufficiently shown a fourth slide is put in its place, and the dissolver slowly pushed toward the right and so on until the required number of slides has been shown.

The best results are obtained when the dissolver has been properly adjusted and shifted slowly to the right and left. This adds greatly to the effectiveness of the stereopticon pictures or announcements.

It is evident that the pointed portion of the one diaphragm may be rounded off and the incision in the other diaphragm made of conforming shape and that other changes may be made in the details of construction without departing from the spirit of this invention.

If it becomes necessary to work about the machine, clean lenses, change flicker shutters and the like the dissolver may easily be removed by raising it up and afterward again placed on the guide blocks without requiring any new adjustment except in case the stereopticon lenses have been moved, then a new adjustment is required.

We claim as our invention:

1. A stereopticon dissolver for moving picture machines comprising two diaphragms, horizontally adjustable means permitting of an increase and decrease of its length and having the said diaphragms secured to its outer ends, and means for moving said diaphragms to the right and left before the stereopticon lenses uncovering one lens while covering the other, at the same ratio, dissolving thus one stereopticon slide into another one.

2. A stereopticon dissolver for moving picture machines comprising a diaphragm having on its inner edge a reduced portion, a second diaphragm having on its inner edge an incision conforming in shape to the reduced portion of the first mentioned diaphragm, horizontally adjustable means to the outer ends of which the diaphragms are secured, and means for moving said diaphragms to the right and left in a horizontal plane before the stereopticon lenses uncovering one lens while covering the other, at the same ratio.

3. A stereopticon dissolver for moving picture machines comprising a diaphragm having on its inner edge an angular pointed inner portion, a second diaphragm having on its inner edge an angular pointed incision conforming in shape to the pointed portion of the first mentioned diaphragm, horizontally adjustable means to the outer ends of which said diaphragms are secured, and means for moving the diaphragms before the stereopticon lenses uncovering one while covering the other, at the same ratio.

4. A stereopticon dissolver for moving picture machines comprising a diaphragm having on its inner edge an angular pointed inner portion, a second diaphragm having on its inner edge an angular pointed incision conforming in shape to the pointed portion of the first mentioned diaphragm, a set of horizontally adjustable slide bars to the outer ends of which the diaphragms are adjustably secured, and means for moving the device before the stereopticon lenses uncovering one lens while covering the other, at the same ratio.

5. A stereopticon dissolver for moving picture machines comprising a diaphragm having on its inner edge an angular pointed inner portion, a second diaphragm having on its inner edge an angular pointed incision conforming in shape to the pointed portion of the first mentioned diaphragm, a set of horizontally adjustable slide bars to the outer ends of which the diaphragms are adjustably secured, means for supporting the device adjoining the stereopticon lenses, and means for moving it before the stereopticon lenses uncovering one lens while covering the other, at the same ratio.

6. In a unit of moving picture machines with two stereopticons a dissolver comprising essentially two diaphragms with reduced inner portions of conforming shape complementing each other, means for supporting the said diaphragms and rendering them adapted to be shifted to the right and left covering one stereopticon lens while uncovering the other, at the same ratio, whereby one stereopticon slide is dissolved into another one.

7. In a unit of moving picture machines with two stereopticons a dissolver comprising essentially two diaphragms, one diaphragm having on its inner edge an angular pointed portion and the other an inner angular incision conforming in shape to the pointed portion of the first diaphragm, means for supporting the said diaphragms and rendering them adapted to be shifted to right and left whereby one lens is covered and the other uncovered at the same ratio, dissolving thus one stereopticon slide into another one.

8. In a device for exhibiting moving pictures and stereopticon announcements two moving picture machines having each a stereopticon at its side, one lamp house for each set of a moving picture machine and stereopticon, a stereopticon dissolver comprising essentially two diaphragms with re-

duced inner portions of conforming shape complementing each other, means for supporting the said diaphragms and rendering them adapted to be shifted to the right and left covering one stereopticon lens while uncovering the other at the same ratio, whereby one stereopticon slide is dissolved into another one.

Signed at New York, N. Y., this 18th day of March, 1915.

JULIUS C. BUTTNER.
FREDERICK J. MERKLEIN.

In presence of—
IDA E. ROLAND,
ELEANORE HOFFMANN.