F. H. HOFFMAN.

AUTOMATIC SLIDE CHANGE MEANS FOR LANTERNS.

APPLICATION FILED MAR. 17, 1916.

1,186,192. Patented June 6, 1916.

Fig. 1.

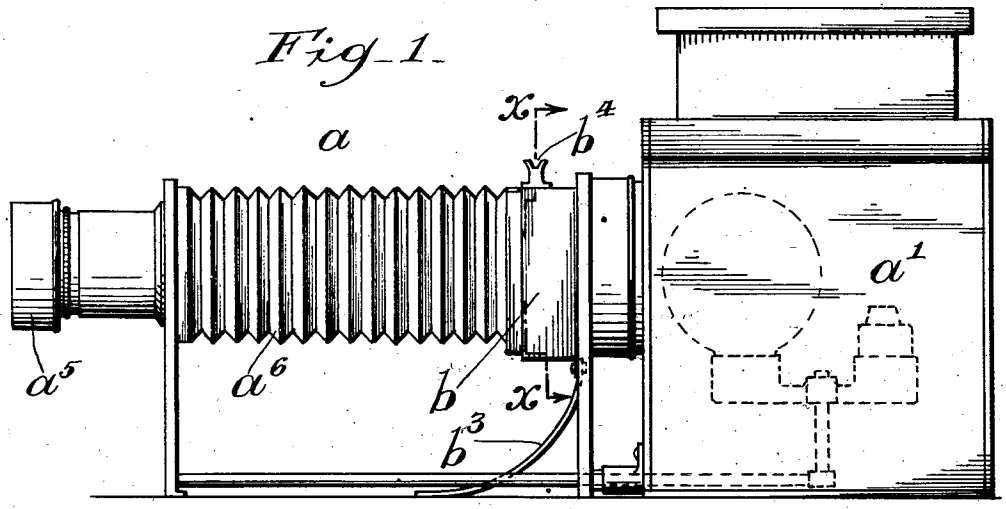


Fig. 2.

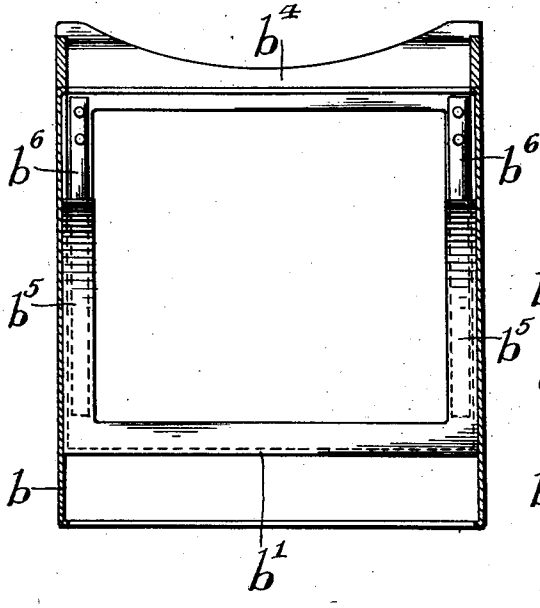


Fig. 3.

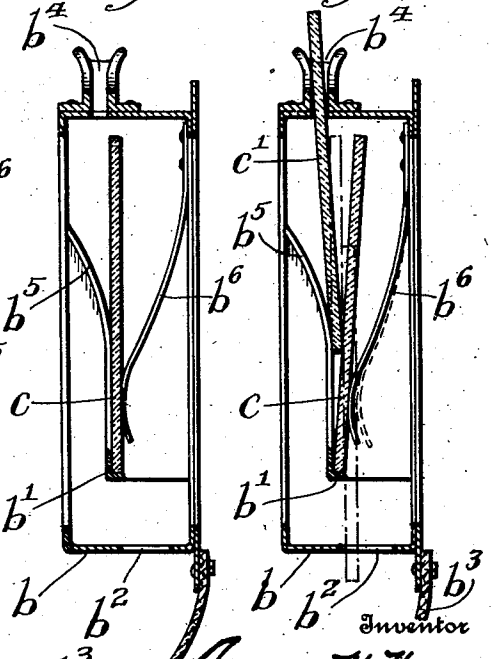


Fig. 4.

Witnesses

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AUTOMATIC SLIDE-CHANGE MEANS FOR LANTERNS.

1,186,192. Specification of Letters Patent. Patented June 6, 1916.

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To all whom it may concern:

Be it known that I, FREDERICK H. HOFFMAN, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Slide-Change Means for Lanterns, of which the following is a specification.

My invention has relation to means to change slides automatically in lanterns one after another, as inserted in the lantern, the slide in position being displaced and dropping onto an incline outside of the lantern, without handling, ready for again being used or packed in a suitable container.

Hitherto various arrangements have been resorted to located between the lamphouse and lens in position for inserting and removing slides to and from the lantern, among them, star-shaped wheels have been employed mounted on a revoluble shaft actuated by a hand lever from outside the lantern, but this turned the slide so that when it was liberated it was upside down and had to be turned over for use again. The most serious difficulty in the use of such a defined arrangement was that it broke or cracked the slides by the jar or thrust which was given them in freeing them from the lantern, aside from the time consumed in handling and reversing so as to be placed in a position for being used again or packed away in a container, for subsequent use.

My invention stated in general terms, consists of a compartment provided with an inlet throat in one part and an outlet throat in another part and an incline registering with the said outlet throat and a ledge located in the said compartment with springs located on both sides of the said ledge, the arrangement being such that a positioned slide on the ledge is displaced automatically by the inserting of a slide and the liberated slide freed through the outlet throat onto the said incline and without turning the slide to gather for use again or for packing away in a suitable container.

The nature, scope and characteristic features of my present invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, in which—

Figure 1, is a side elevational view of a lantern, provided with a slide compartment arranged between the condensers and projection objective with a feed throat and an incline beneath the same, embodying main features of my said invention. Fig. 2, is a vertical sectional view on the line x, x, of Fig. 1; and Figs. 3 and 4, are respectively, transverse sectional views through the said slide holder compartment, showing in Fig. 3, a slide mounted therein and held on a ledge in position exposed to the objective and in Fig. 4, how the inserting of a slide into said compartment containing a slide is adapted to displace it and to remove the same from said compartment onto the incline beneath, for use again or for packing away, without turning the slide for subsequent use thereof.

Referring to the drawings a, is the lantern having a rear lamp-house a^1, with condensers. In front of the condensers is arranged a rectangular-shaped framing, forming the slide change compartment b, of my invention having a substantially L-shaped ledge b^1, located crosswise therein and secured to the side walls of the said compartment above an outlet throat b^2, therein, registering with an incline b^3, located beneath the said compartment b. This incline may be composed of felt, leather or other suitable flexible matter. The roof of the said compartment b, is provided with a feed throat b^4, of funnel or other shape, as clearly shown in Figs. 2 and 3. The ledge b^1, has formed preferably integral therewith, two bent leaf-springs b^5, arranged to bear normally against the front wall or framing of the said compartment b, so that as a slide is fed into the said compartment it will rest and be held on the said ledge b^1, in a vertical position just in rear of the feed-throat opening b^4, as clearly shown in Fig. 3, and in the focal plane of the projection objective or lens a^5, in front of the bellows a^6, removably connected with the framing of the said compartment b, as clearly shown in Fig. 1. On the opposite side in the said compartment b, and secured to the framing of said compartment are arranged bent leaf springs

b^6, at the respective corners thereof, the free ends of the springs b^6, bearing lightly against one side of the inserted slide, as clearly shown in Figs. 3 and 4, whereby when a slide is inserted through the feed throat b^4, into contact with the spring held slide c, in the said compartment b, to below a median plane through the same, gradually the supported slide will be displaced under the tension of the springs b^6, thus allowing the said slide to drop downward through the oblong throat b^2, onto the said incline b^3, beneath the lantern, in proper position as well as condition to be used again or to be packed away, for subsequent use.

The slight manual pressure exerted in the inserting of a slide to overcome the tension under which a slide in the compartment b, is held displaces the one so held upon reaching a position therein, as shown in Fig. 4, to cause the same to drop down and out onto the said incline b^3, for picking up again for use or storing away. It will be observed that an inserted slide c^1, enters the compartment b, in advance of the slide c, therein, so that one is really dissolved into the other and at the same time by handling only the inserted slide, until the previously used slide discharged from the lantern is to be used again or packed away, for subsequent use.

Having thus described the nature and objects of my invention, what I claim as new and desire to receive by Letters Patent is:—

1. The combination with a lantern having a compartment the framing whereof is provided with an inlet throat, an internal ledge with springs located on both sides of said ledge and an incline beneath the outlet throat of said compartment, the arrangement being such that feeding of slides one after the other onto the ledge automatically frees and discharges the previously held slide from the said ledge out of the compartment onto said incline, substantially as and for the purposes described.

2. The combination with a lantern having a lamphouse, and a lens, a framing located between said house and lens and forming a slide compartment having an inlet throat in one part and an outlet throat in another part and an incline registering with said outlet-throat, a substantially L-shaped ledge in said compartment and leaf springs located on both sides of said ledge, the arrangement being such that a positioned slide on said ledge is displaced automatically by the inserting of a slide and the liberated slide freed through the outlet throat onto said incline, substantially as and for the purposes described.

In witness whereof, I have hereunto set my signature in the presence of two subscribing witnesses.

FREDERICK H. HOFFMAN.

Witnesses:
J. WALTER DOUGLASS,
ROSE E. SMITH.