

E. S. PORTER.
FILM TRAP DOOR.
APPLICATION FILED AUG. 11, 1911.

1,059,067.

Patented Apr. 15, 1913.

Fig. 1.

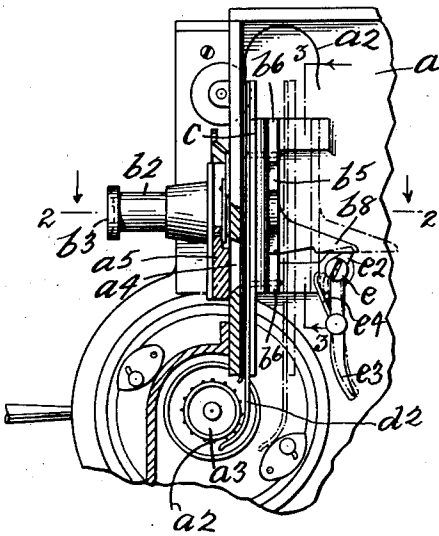


Fig. 2.

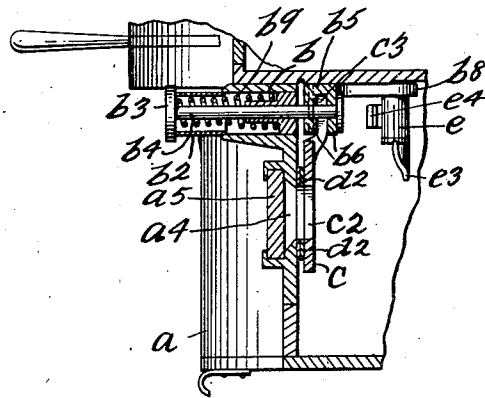


Fig. 3.

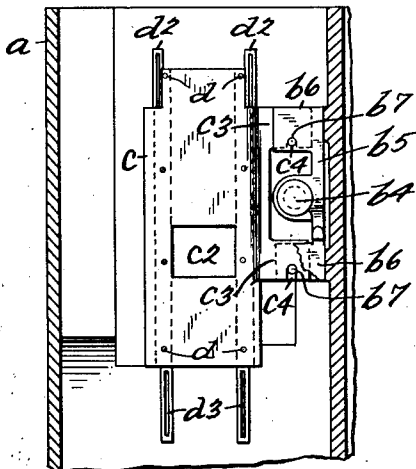
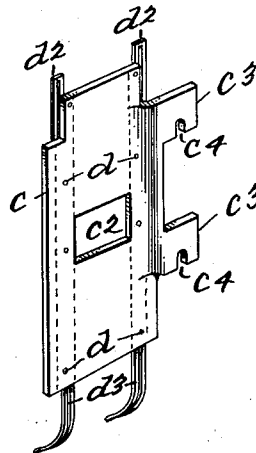


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FILM TRAP-DOOR.

1,059,067.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Original application filed March 4, 1911, Serial No. 612,417. Divided and this application filed August 11, 1911. Serial No. 643,478.

To all whom it may concern:

Be it known that I, EDWIN S. PORTER, a citizen of the United States of America, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Film Trap-Doors, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to kinetoscopes, being upon matter divided out of my application for Letters Patent of the United States filed Mar. 4, 1911, Ser. No. 612,417, and the object thereof is to provide a trap-door for the film passing through said kinetoscope which serves to maintain an elastic though relatively firm pressure upon said film to prevent too free movement thereof, and also to prevent the buckling thereof adjacent the light aperture.

A further object is to provide means whereby said trap-door may be readily moved out of and into operative positions from a point exterior of the casing of said kinetoscope; a further object is to provide means for holding said trap-door out of operative position.

A further object is to provide a carrier from which said trap-door may be quickly and readily removed for cleansing, substitution, or repair.

A further object is to provide readily removable, resilient, strips on the side of said trap-door adjacent the film, and which extend to and insure film contact with the feeding or intermittent sprocket-wheel, thus permitting the quick substitution of said strips in the event of their becoming coated with the film material, as frequently occurs; and with these objects in mind my invention consists in the form of construction hereinafter fully set forth and claimed.

My invention is fully described in the following specification, of which the accompanying drawings form a part, in which the separate parts are designated by the same reference characters in each of the views, and in which:—

Figure 1 is a fragmentary view of a kinetoscope provided with my invention, and partly in section; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a view looking in the direction of the arrow,

on the line 3—3 of Fig. 1; and Fig. 4 is a perspective view of the trap-door removed from the kinetoscope.

In the drawings forming a part of this application I have shown a portion of the casing a of a kinetoscope through which passes the film a^2 around the sprocket-wheel a^3 in the usual or any desired manner, said casing being provided with the usual aperture a^4 for the light in the path of the film, and which is preferably protected by means of an automatically operated fire-door a^5 , the mechanism of which is not shown as it forms no part of this invention.

Slidably mounted in a cylindrical passage through the casing a , adjacent the aperture a^4 , as shown at b , is a tube b^2 , the outer end of which is covered by a cap b^3 having a rod b^4 projecting inwardly therefrom and into the casing, a frame b^5 being secured thereon by means of a pin, as indicated in Fig. 2, or suitable equivalent, and being movable therewith, said frame being composed of two parallel members b^6 having a space therebetween and extending a suitable distance above and below the rod b^4 , and said frame, hereafter referred to as a carrier, has two pins b^7 extending across the space between the members b^6 adjacent the top and bottom thereof, and said carrier is also provided with a finger b^8 having a notch on the lower side thereof, as clearly shown in Fig. 1.

The trap-door proper consists of a plate c having an aperture c^2 in line with the aperture a^4 , when in position for use, and having also two ears c^3 , preferably arranged on a different plane than the plate c , and which are in turn provided with notches c^4 on the lower edges thereof, said notches being of a width approximately equal to the diameter of the pins b^7 which are adapted to enter therein. Secured to the side of the plate c adjacent the wall of the casing, by means of screws d , or the like, are two parallel resilient strips d^2 which normally bear against the film to produce a tension thereon and to prevent the buckling thereof adjacent the aperture a^4 , said strips extending downwardly and around the sprocket-wheel a^3 and being provided with slots d^3 for the teeth thereof, thus bearing directly upon the film and insuring an exact relationship between the same and said sprocket,

and it will thus be seen that the strips d^2 may be readily removed for cleansing or substitution, as the film invariably forms a coating upon the said strips in its passage thereover which adheres to the film and produces a jerky movement instead of the smooth movement desired.

Pivoted within the casing, at e , is a latch e^2 provided with a depending handle e^3 and normally maintained against the under side of the finger b^8 by means of a spring e^4 , as clearly shown in full lines in Fig. 1, and, when the frame b^5 is moved inwardly by means of pressure on the cap b^3 , the finger b^8 slides over the latch e^2 until said latch is forced into the notch in the bottom of said finger, as indicated by dotted lines in Fig. 1, at which time the frame b^5 is prevented from again moving to normal position until the latch is released by means of the handle e^3 , and when the frame b^5 is in this backward position the trap-door may be lifted until the ears c^3 thereon clear the pins b^7 , for removal, the said ears normally resting in the space between the members b^6 of the carrier where they are engaged by the said pins, thus moving the trap-door with the carrier or frame b^5 .

It will be understood that the trap-door is always moved out of operating position when it is desired to thread a new film, or when it is desired to move the same manually for any reason and, the trap-door operating means being upon the exterior of the casing, the backward movement thereof is accomplished instantly by the operator and without the necessity for his fumbling with the interior mechanism of the kinetoscope, this being particularly advantageous when the operator is in the dark, as frequently occurs and, when he desires to return the door to normal position, all that is necessary is to move the handle of the pawl to release the carrier, the spring b^9 within the passage b and tube b^2 forcing the said tube outwardly and thereby moving the carrier therewith until the resilient strips d^2 on the trap-door bear firmly against the film, the degree of this pressure against the film being that of the resiliency of the said strips and of the spring b^9 .

From the foregoing it will be seen that I provide a film trap-door which is readily moved out of and into operative positions, the former exteriorly of the kinetoscope, which is quickly removable from the kineto-

scope for any reason, and which permits the ready substitution or cleansing of the strips thereon which bear against the film and, while I have shown my present preferred method of accomplishing these results, it will be evident that various changes in the details may be made to meet varying conditions and, with a reservation to myself of all such changes in and modifications of the construction shown and described as come within the scope of the following claims, what I claim as new, and desire to secure by Letters Patent, is:—

1. In a kinetoscope, a trap-door in the path of the film, exterior means for moving said trap-door out of operative position, means for holding the same in such position, and means for releasing the same to resume normal position.

2. In a kinetoscope, an exteriorly operated, slidable carrier, a trap-door detachably mounted thereon and normally bearing on the film passing through said kinetoscope, and means for holding said carrier and trap-door out of operative position.

3. In a kinetoscope, a carrier slidably mounted, an exterior, spring-actuated plunger connected therewith, a film trap-door detachably mounted on said carrier, and means for holding said carrier and trap-door in inoperative position.

4. In a kinetoscope, a slidable carrier, exterior, spring actuated means for moving the same, a film trap-door detachably mounted on said carrier, and a pawl for holding said carrier in its innermost position when forced thereinto by said exterior operating means.

5. In a kinetoscope, an exterior, spring actuated, plunger, a carrier connected therewith and slidably mounted in said kinetoscope, said carrier comprising a frame having a plurality of spaced members and pins extending across said space, and a film trap-door having ears provided with notches to engage said pins whereby said door is detachable from said carrier.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 25th day of July, 1911.

EDWIN S. PORTER.

Witnesses:

S. VAN HORN,
J. C. LARSEN.