M. E. MYERS.

MAGAZINE FOR CINEMATOGRAPHIC PROJECTORS.

APPLICATION FILED FEB. 14, 1919.

1,424,735.

Patented Aug. 1, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

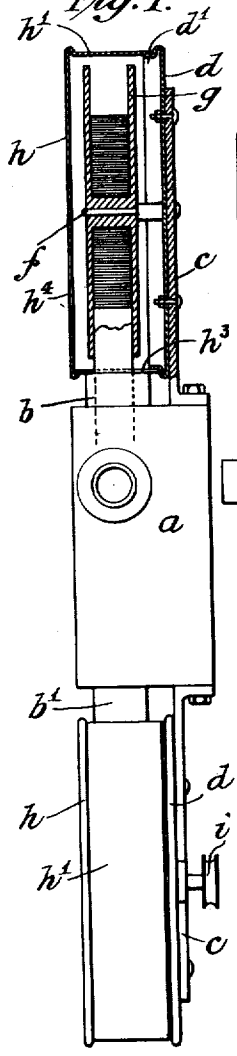


Fig. 2.

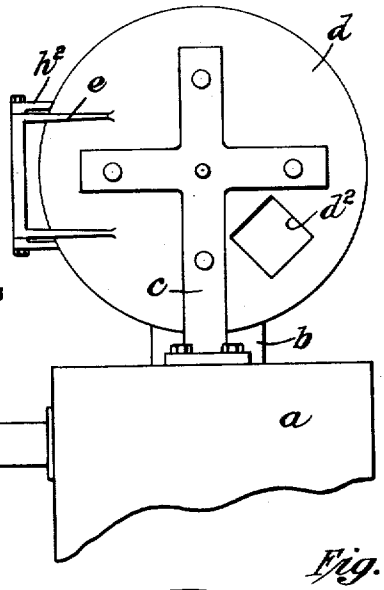


Fig. 3.

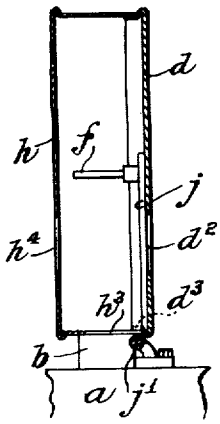


Fig. 4.

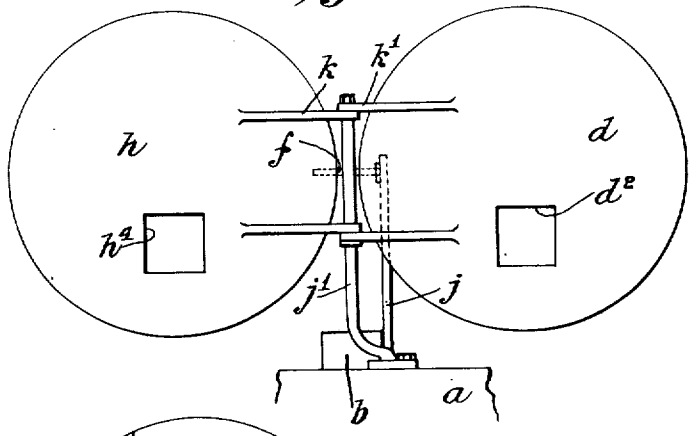
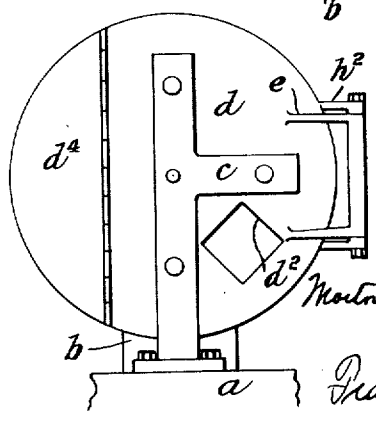


Fig. 6.



WITNESS:

Morton Earle Myers INVENTOR

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2 SHEETS—SHEET 2.

Fig. 5.

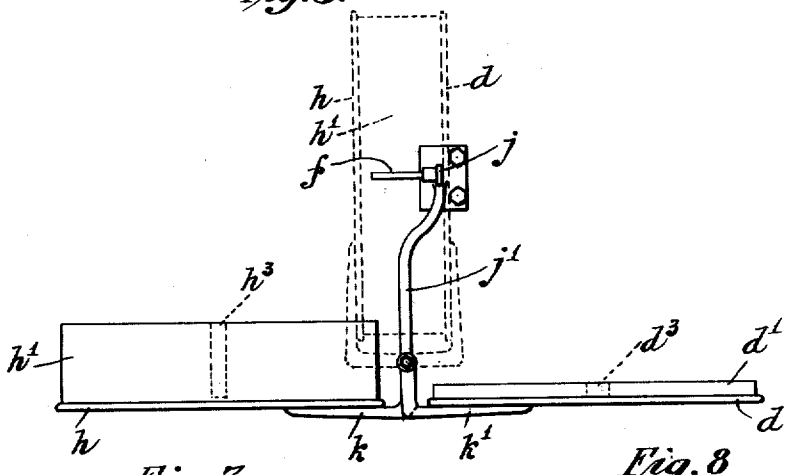
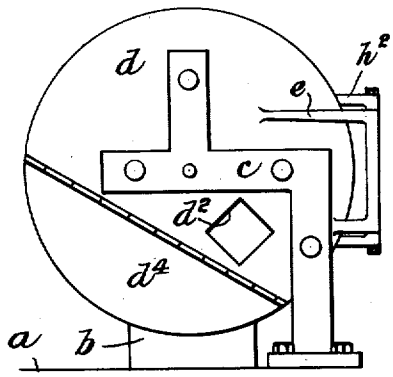
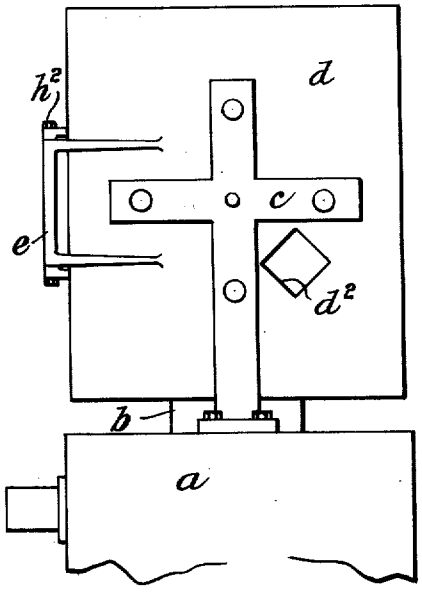


Fig. 7.

Fig. 8.





WITNESS:

Marion Earle Myers, INVENTOR

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UNITED STATES PATENT OFFICE.

MORTON EARLE MYERS, OF NEW YORK, N. Y., ASSIGNOR TO THE PRECISION MACHINE CO. INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

MAGAZINE FOR CINEMATOGRAPHIC PROJECTORS.

1,424,735. Specification of Letters Patent. Patented Aug. 1, 1922.

Application filed February 14, 1919. Serial No. 277,074.

To all whom it may concern:

Be it known that I, MORTON EARLE MYERS, a citizen of the United States, residing at the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Magazines for Cinematographic Projectors, of which the following is a specification, reference being had therein to the accompanying drawings, which form a part thereof.

My invention relates to magazines for cinematographic projectors, and more particularly to those structural characteristics by which the threading of the film, and repairs thereto, are facilitated.

Magazines for cinematographic projectors, as heretofore constructed, have been composed of a case permanently mounted upon, or supported from, the lens box, a valve mechanism for preventing the passage of flame from said lens box to the magazine, being disposed between said lens box and the cases containing the reel from which the film is unwound, and the reel upon which the film is rewound. The dimensions of said film cases were slightly greater than the dimensions of the reel, the side of the box thus extending in close proximity to the rim of the reel.

With this old and well known type of magazine, the reel in the film case was extremely difficult of access for purposes of threading a new reel, or repairing a broken one. Furthermore, access could be had to the magazine from only one side of the machine.

With these conditions in mind, the main object of the invention has been to provide a magazine so constructed that when it is opened, it will expose the entire edge of the reel in a manner to permit free access to the film thereon, irrespective of the quantity of film upon the reel, and thus facilitate the threading of, or repairs to, the film. In a magazine made in accordance with my invention, the film is accessible from either side of the projector, the structure of the magazine being capable of variation according to the degree of accessibility desired.

The invention consists primarily in a magazine for cinematographic projectors, embodying therein a back plate, a reel spindle projecting from, and adapted to hold a film reel away from, said plate, in a manner to expose the edge of the reel when the magazine is opened, and a cover hinged in relation to said back plate, having a deep flange adapted to project across the edge of the reel, said flange having a slot therein through which the film may pass to the lens box, and in such other novel features of construction and combination of parts, as are hereinafter set forth and described, and more particularly pointed out in the claims hereto appended.

Referring to the drawings:—

Fig. 1 is a front view of a lens box of a projector having associated therewith magazines made in accordance with my invention, one of said magazines being shown in cross section;

Fig. 2 is a side view of the form of the invention shown in Fig. 1, showing the upper magazine and upper portion of the lens box;

Fig. 3 is a view in cross section of another embodiment of the invention;

Fig. 4 is a front view of the form of the invention shown in Fig. 3, with the back plate and cover in the open position;

Fig. 5 is a plan view thereof;

Fig. 6 is a side view of another embodiment of the invention;

Fig. 7 is a side view of still another embodiment of the invention; and

Fig. 8 is a side view illustrating the form of the invention shown in Figs. 1 and 2, utilizing a rectangular magazine, instead of a cylindrical magazine.

Like letters refer to like parts throughout the several views.

In the accompanying drawings, I have illustrated at *a* a lens box containing the lens system and the film feeding mechanism, and other parts appurtenant thereto. Associated with said lens box are two magazines, one of which is adapted to contain a reel from which film is adapted to be fed by said feeding mechanism, and the other of which is adapted to have the film wound thereon after it has been passed across the sight opening. The detailed construction of the film feeding and rewinding mechanism is not shown in the accompanying drawings, as any desired mechanism of this character may be used, and the details of this mechanism are immaterial to my present invention.

Between the lens box *a* and each of the film magazines is a casing *b*—*b'*, in which is located respectively, a valve mechanism for preventing transmission of flame from the lens box to the magazines.

In the form of the invention shown, these valve cases are mounted upon the lens box *a* instead of being secured to the magazines, as has heretofore been the practice.

Referring now more particularly to the form of the invention shown in Figs. 1 and 2, the magazine is shown as being supported by an angle arm *c* carried by the lens box *a*, said arm having permanently secured thereto, in any desired manner, as by means of bolts or rivets, the base *d* having a narrow flange *d'* of slightly less diameter than the base. Carried by this base is a hinge bracket *e*, and carried by the arm *c* and the base *d* is a spindle *f* projecting substantially axially of said base to an extent to hold the film reel *g*, when mounted thereon, well away from the base, and to an extent to expose the entire periphery of said reel beyond the flange *d'*.

Co-operating with the base *d* in inclosing the reel *g*, is a cover *h* having a deep flange *h'* projecting across the edge of the reel and having a slip fit with the reduced flange *d'* of said base. This cover is hinged to the base *d* by means of a hinge member h^2 pivotally mounted in relation to the hinge bracket *e*. The flange *h'* of the cover *h* is slotted adjacent the valve casing *b* as at h^3, to permit the passage of the film from the magazine through said casing and its contained valve mechanism, to the lens box *a*. The top of the casing *h* is so shaped as to conform to the flange *h'*, thus permitting a sufficiently tight joint at this point to secure a substantially fire-proof structure, and completely close the slot h^3. The construction of the lower magazine is substantially as heretofore described in connection with the upper magazine, with the exception that the spindle of the said magazine is power driven by means of the pulley *i*.

In this form of the invention the base *d* is stationary in its relation to the lens box, the cover *h* having movement away from said base.

The base *d* is provided with the usual sight opening d^2 protected in the usual manner, and the cover *h* is provided with a similar sight opening h^4.

Referring now to the form of the invention shown in Figs. 3 to 5, I have illustrated a magazine structure adapted to receive the reel containing the film to be fed through the lens box.

In this embodiment of the invention, I employ a standard *j* supporting the spindle *f*, the base of said standard having an arm *j'*, so formed as to follow the periphery of the magazine proper when closed. This standard has mounted thereon the hinge members *k*—*k'*, secured respectively to the base member *d* and the cover member *h*.

The standard *j* is so positioned as to be within the magazine when it is closed, the base *d* being provided with a slot d^3 to receive the standard.

In this form of the invention, like that shown in Figs. 1 and 2, when the magazine is open, the entire edge of the reel is exposed, so as to give ready access to the film thereon. The form of the invention shown in Figs. 3 to 5 presents a structure which permits more convenient access to the film from both sides thereof, than is possible in the form of the invention shown in Figs. 1 and 2.

In the form of the invention shown in Fig. 6, the construction is like that shown in Figs. 1 and 2, with the exception that the base *d* is made in two sections, one section of which, d^4, is hinged along a line parallel with the line of movement of the film, to the main portion of the base, so as to permit the exposure of a portion of the reel at the edge thereof towards which the film passes to the valve casing.

In the form of the invention shown in Fig. 7, the construction, with the exception of the location of the hinge connection between the two sections of the base, is the same as shown in Fig. 6, the hinge of the section, d^4, in this form of the invention, extending obliquely to the direction of travel of the film, instead of parallel therewith, as in Fig. 6.

Referring to Fig. 8, the construction is identical with that described in Figs. 1 and 2, with the exception that I have shown the contour of the magazine as being a parallelogram instead of circular.

The operation of the herein described magazine is substantially as follows:—

Ordinarily cinematographic projectors are used in pairs, the position of the operator being between the projectors. With the form of magazine now commonly used, the reel is so inclosed that in the event of breakage of the film, it is necessary for the operator to pass about a machine in order to gain access to the magazine. Furthermore, the space between the wall of the magazine and the periphery of the reel, is so small that it is extremely difficult for the operator to handle the end of the film, whether this end be the free end of the film or a broken end thereof, it being ordinarily necessary to unwind a considerable portion of the film in order to have sufficient slack to permit a convenient handling thereof. But even with this slack, the lack of space between the edge of the reel and the inner wall of the magazine makes the threading of the film difficult.

With a magazine made in accordance with

my invention, and this applies to all forms of the invention shown, the opening of the cover exposes the entire edge of the reel and leaves ample clearance between same and the valve casing, to permit ready access to the film, and the convenient threading of the same through the valve. To secure these results it is necessary to have the valve casing and its mechanism stationarily supported, the cover having movement with relation thereto.

When a film has been properly threaded, the cover h is swung upon its hinge, the slot h^3 in the flange h' thereof, straddling the film, and the edge of this flange slipping over the flange d' and forming a tight joint therewith. Said flange also extends into sufficiently close juxtaposition to the valve casing b or b' to form a sufficiently tight joint therewith to provide the desired factor of safety to make the magazine substantially fire-proof.

In the form of the invention shown in Figs. 3 to 5, in opening the magazine, the cover h is first swung away from the base d, and if access is desired only from the side of the machine toward the cover, the base d need not be disturbed, but if access be desired from the other side of the machine, or that side toward said base, the base itself may be swung upon the arm j' and thus expose the entire reel and permit a more convenient access thereto from the side of the machine toward said base. In this form of the invention, the standard j maintains the spindle f in the desired fixed relation to the lens box.

In the form of the invention shown in Figs. 6 and 7, if it be desired to have access to the magazine from the side toward the cover, the cover only need be moved, but if access be desired from the side toward the base d, the hinged portion d^4, of said base, may be moved.

The form of the invention shown in Fig. 7 possesses the characteristic that when the hinged portion d^4 is moved, the mouth of the valve casing is more fully exposed than in the form of the invention shown in Fig. 6.

The forms of the invention shown in Figs. 6 and 7 are desirable in connection with a magazine for the rewind reel, since the bracket c is fixed and affords a suitable mount for a rotatable spindle.

The form of the invention shown in Figs. 3 to 5 is adapted for the upper magazine, since with the arrangement of the spindle, shown in this form of the invention, it would be impossible to apply power thereto and permit the movement of the base of the magazine.

The form of the invention shown in Fig. 8 differs from that shown in Figs. 1 and 2 merely in the contour of the magazine in its entirety, its functions being the same as that shown in Figs. 1 and 2.

It will be observed that in all forms of the invention shown in the drawings, the movement of the cover h away from the spindle f removes all obstructions about the edge of the reel, so that the operator may readily grasp the end of the film, thus greatly facilitating the threading of the film and yet have the magazine, when closed, substantially fireproof. This exposure of the edge of the reel permits access thereto from either side of the machine, the embodiments of the invention shown in Figs. 3 to 7 being designed solely to increase the facility in which such access may be had.

It is not my intention to limit the invention to the precise details of construction shown in the accompanying drawings, it being apparent that such may be varied without departing from the spirit and scope of the invention.

Having described the invention what I claim as new, and desire to have protected by Letters Patent, is:—

1. A magazine for cinematographic projectors embodying therein a back plate, a cover movably mounted in relation to said back plate and having a deep flange adapted to project across the edge of a reel, said flange having a slot therein through which the film may pass to the lens box, and a reel spindle supported so as to be positioned intermediate said back plate and said cover, with its free end toward said cover, said spindle being adapted to hold a film reel away from said base, whereby with the opening of the magazine, access may be had to the film upon said reel from either side thereof.

2. A magazine for cinematographic projectors embodying therein a back plate, a cover movably mounted in relation to said back plate and having a deep flange adapted to project across the edge of a reel, said flange having a slot therein through which the film may pass to the lens box, a reel spindle supported so as to be positioned intermediate said back plate and said cover, with its free end toward said cover, said spindle being adapted to hold a film reel away from said base, whereby with the opening of the magazine, access may be had to the film upon said reel from either side thereof, and a valve casing fixedly mounted in relation to the lens box of a projector and in close juxtaposition to the flange of said cover, whereby said valve casing will close the slot in said flange when the magazine is closed.

3. A magazine for cinematographic projectors embodying therein a reel spindle, a base having a narrow flange arranged upon one side of the reel upon said spindle, and a cover having a deep flange adapted to pro-

ject across the edge of said reel arranged upon the other side of a reel upon said spindle, and means whereby said base and said cover are pivotally mounted in relation to each other to permit access to the reel from either side thereof when the magazine is opened, the flange of said cover having a slot therein adapted to straddle the film when the magazine is closed.

4. A magazine for cinematographic projectors embodying therein a reel spindle, a base having a narrow flange arranged upon one side of the reel upon said spindle, and a cover having a deep flange adapted to project across the edge of said reel arranged upon the other side of a reel upon said spindle, means whereby said base and said cover are pivotally mounted in relation to each other to permit access to the reel from either side thereof when the magazine is opened, the flange of said cover having a slot therein adapted to straddle the film when the magazine is closed, and a valve casing fixedly mounted in relation to the lens box, the flange of said cover being in close juxtaposition to said casing, whereby said casing will close said slot in said flange.

5. A magazine for cinematographic projectors embodying therein a spindle adapted to receive a reel for the film, and means inclosing said spindle upon opposite sides and about the edge thereof, said means being movable in relation to the spindle to expose the edge of the reel upon said spindle when the magazine is opened, and the portion of said means inclosing the edge of the reel having a slot therein to permit the film to pass from the reel to a lens box.

6. A magazine for cinematographic projectors embodying therein a spindle adapted to receive a reel for the film, means inclosing said spindle upon opposite sides and about the edge thereof, said means being movable in relation to the spindle to expose the edge of the reel upon said spindle when the magazine is opened, and the portion of said means inclosing the edge of the reel having a slot therein to permit the film to pass from the real to a lens box, and a valve casing fixedly mounted in relation to the lens box, the portion of said means inclosing the edge of the reel being in close juxtaposition to said casing, whereby said casing will close said slot when the magazine is closed.

In witness whereof I have hereunto affixed my signature this 30th day of October, 1918, in the presence of two subscribing witnesses.

MORTON EARLE MYERS.

Witnesses:

F. T. WENTWORTH,

A. E. RENTON.