(19) Canadian Intellectual Property Office / Office de la Propriété Intellectuelle du Canada
An Agency of Industry Canada / Un organisme d'industrie Canada

(11) CA 357515 (13) A
(40) 28.04.1936

(12)

(21) Application number: 357515D
(22) Date of filing: --

(51) Int. Cl:

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(54) TOY MOTION PICTURE PROJECTOR
(54) PROJECTEUR-JOUET DE VUES ANIMEES

(57) Abstract:

The object of the present invention is to provide a motion picture projection apparatus characterized by its adaptability for an endless film, and for a film having a single row of feeding apertures, the device being so formed and arranged as to permit rapid production at very low cost.

The invention will be described with reference to the accompanying drawings, in which:

Fig. 1 is a sectional plan view of an embodiment of the invention, the section being taken on the line 1-1, Fig. 2.

Fig. 2 is a side elevation of the invention, showing in dotted lines the dry cell batteries and electric lamp and storage members.

Fig. 3 is a schematic plan view of the device, showing the film raceway members and the spring plate moved outwardly to permit edgewise insertion of the film.

Fig. 4 is a sectional elevation on the line 4-4, Fig. 2.

Fig. 5 is an enlarged vertical section on the line 5-5, Fig. 4, looking in the direction of the arrow.

Fig. 6 is a horizontal section on the line 6-6, Fig. 5.

The device comprises a frame member having a horizontal base 1 and an integral vertical frame extension 1x. Mounted upon base member 1 is illuminating box 2 having ears 2x passing through suitable apertures formed in frame member 1x, the ears being headed over as shown in Fig. 1.

The front wall of the illuminating box is channeled to form a raceway for a film, the latter being shown at f. To complete the raceway and form spring tension means for the film, we rivet a spring plate 3 to the illuminating box at the side of the raceway, the plate formed with a finger piece 4 by means of which it may be sprung outwardly so that the film may be inserted by edgewise movement into the raceway as indicated in Fig. 3.

Passing through vertical member 1x of the frame is a shaft 5 to which is secured a handle 6. The shaft carries a gear wheel 7, the end of the shaft opposite handle 6 being afforded a bearing aperture in a bracket plate 8.

Below shaft 5 is a second shaft 9 passing through apertures in vertical frame member 1x and bracket 8 so that the latter affords bearing support for the shaft. Shaft 9 carries a small pinion 10 in mesh with gear 7 and at its end projecting beyond bracket 8, shaft 9 passes through an aperture in an eccentric so that the latter rotates with the shaft. Shaft 9 also passes through an aperture formed in a four-motion feeding fork 12 having upper and lower abutments 12x for the eccentric and a front abutment at 12xx, the arrangement being such that the eccentric supports the feeding fork in position generally parallel to the major face of bracket 8.

The rear end of the fork is slotted and a stud 13 carried by the bracket 8 enters the slot to afford a guide for the fork in its movement into and out of engagement with the row of feeding apertures in film f. Plate 3 is formed with an elongated aperture for the entrance and reciprocation of the feeding fork and the plate also is provided with a light beam aperture in the front channel wall of the illuminating box 2 as indicated at b, Fig. 3. An elongated aperture affording clearance for the feeding fork is also formed in the said channeled wall as indicated in Fig. 6, at c.

Within the illuminating box 2 are two dry cells 14 above which is a fibre or otherwise insulated pipe 15 through which projects a contact plate 16 formed with a simple aperture into which may be threaded an electric bulb 17, the plate being bent horizontally at its lower end to form a contact member for one of the two dry cells. Projecting through plate 15 is a second con-

tact plate 17x which at the under side of the plate is bent horizontally to form a contact member for the second dry cell. A thumb piece 15x carried by the plate may be used to raise it so that the contacts will be brought out of engatement with the dry cells and overlying ledge 18 carried by the illuminating box may engage the upper surface of plate 15 and assist in maintaining it in contact position relatively to the dry cells. The narrowed part of thumb piece 15x may pass through a simple elongated aperture in the adjacent wall of the illuminating box so that the plate may be held down by frictional engagement therewith and also may be held in upper inactive position by such engagement. Thus the plate 15 is a combined lamp holder and switch member.

It will be understood that the embodiment illustrated in the drawing may be modified without departing from the spirit of the invention.

Having described our invention, what we claim and desire to secure by Letters Patent, is as follows:

1. In a toy motion picture projector characterized for its adaptability for a film having a single row of feeding apertures, of a frame comprising a horizontal support and a vertical member, a lens mounting, a lens held by the mounting, an illuminating box disposed rearwardly of the lens mounting and having a channeled front wall providing a seat for an endless loop film, a spring plate carried by the illuminating box, in front of said channeled wall and movable by spring tension away therefrom to permit positioning of the film into the channelway by edgewise movement, a light-beam aperture being formed in the plate and in the wall of the channelway, a four-motion feeding fork carried by said vertical member and adapted to enter the film apertures through a passageway in the spring plate, a shaft supported by said vertical member and carrying a handle, gears operatively connecting said shaft and the four-motion fork, an electric lamp within the illuminating box and in register with the aforesaid apertures and with the lens, and means within the box for conveying an electric current to the lamp.

2. In a toy motion picture projector characterized by its adaptability for an endless loop film, of a frame comprising a horizontal support and a vertical member, alens mounting, a lens held by the mounting, an

illuminating box disposed rearwardly of the lens mounting and having a channeled front wall providing a seat for an endless loop film, a spring plate in front of said channeled wall and movable away therefrom to permit positioning of the film in the channelway by edgewise movement, an aperture being formed in the plate and in the wall of the channelway, a four-motion feeding fork carried by said vertical member and adapted to engage the wall of film apertures through a passageway in the spring plate, a shaft supported by said vertical member and carrying a handle, gears operatively connecting said shaft and the four-motion fork, an electric lamp within the illuminating box and in register with the aforesaid apertures and with the lens, and means within the box for conveying an electric current to the lamp.

3. A device constructed in accordance with Claim 1, in which the four-motion fork is formed with cam abutments and a cam in register with said abutments and adapted to hold the fork in parallel relationship relatively to the vertical member of the frame.

4. A toy motion picture projector comprising a frame member of sheet metal having a horizontal base and a vertical wall, an illuminating chamber adjacent said base and vertical wall, a light aperture formed in said illuminating chamber, a film race-way carried on said chamber adjacent said aperture, an arm mounted in front of said chamber, a lens carried by said arm in alignment

with the light aperture, film feeding means comprising a second vertical wall spaced from the first vertical wall a short distance, the said walls being provided with two sets of aligned apertures, speed acceleration gears, and stud shafts carrying said gears journalled between said vertical walls, a manually operable handle carried by one of said shafts, a cam carried by a second of said shafts, a film feeding fork having a guide face parallel with and supported for oscillation directly in contact with and guided by one of said vertical walls, said fork having opposed sets of contact faces in register with and adapted for engagement by said cam, and said fork being reciprocable into and out of said race-way.

5. A toy motion picture projector comprising a sheet metal primary frame having a horizontal base and a vertical wall, a dry cell casing defined in part by said base and wall, a cover for the dry cells in said casing, a lamp supported by said cover for removal therewith, contact members carried by the cover and engaging the lamp, a film raceway carried at one wall of the dry cell casing and having a light aperture in register with the lamp when the cover is in position on the casing, a lens carried on the frame forwardly of and in register with said light aperture, and a film feeding device carried by the vertical wall.

6. In toy motion picture projectors,

in combination with a film raceway, film feeding means and a lens, of illuminating means for the film comprising portable electrical energizing means of the dry cell type, a lamp, and direct contact means between the lamp and said dry cell energizing means comprising a plurality of contact arms engaging the lamp, one arm supporting the lamp, and a switch plate carrying the arms but insulated therefrom, said plate being movable to carry said arms into and out of engagement with said energizing means.

7. A device constructed in accordance with Claim 6, in combination with a fulcrum member for one end of the plate and a detent member for the opposite end of the plate.

8. A self light-energizing motion picture projector comprising a frame having a horizontal support and a vertical extension, a lens mounting, a lens held by the mounting, an illuminating box disposed rearwardly of the lens mounting, a film raceway, an intermittent feed device adapted to engage the apertures of a film held in said raceway, a shaft supported by said vertical extension and carrying a handle, means operatively connecting said shaft and the intermittent feed device, dry cell battery energizing means disposed in said illuminating box, a switch member held by said box for movement toward and from the dry cell energizing means, and an electric lamp operatively engaging said switch member within the illuminating box and held in register with said light beam passageway in the film raceway.

Signed at New York, New York, U.S.A., this 12 day of June, 1935.

NOTARY PUBLIC, Bronx County
Bronx Co. Clk's No. 07 Reg. No. 70A37
N. Y. Co. Clk's No. 373 Reg. No. 7A239
Term Expires March 30, 1937

Fig. 3.

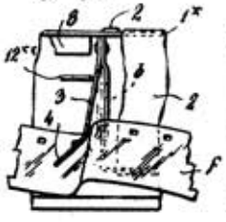


Fig. 1.

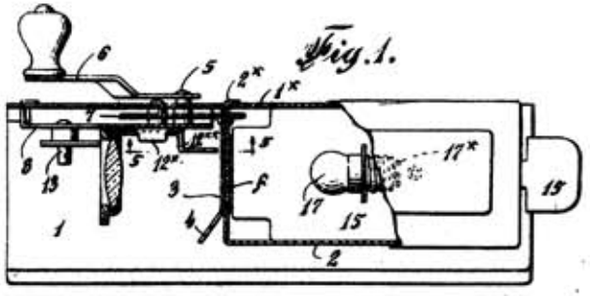


Fig. 4.

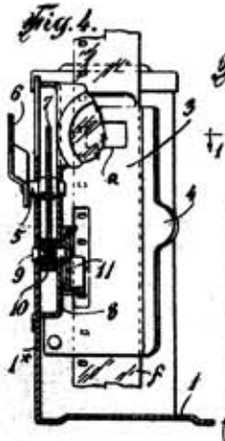


Fig. 2.

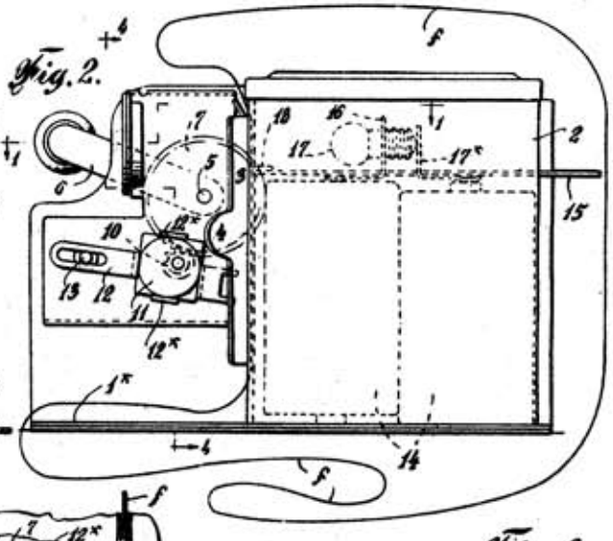


Fig. 5.

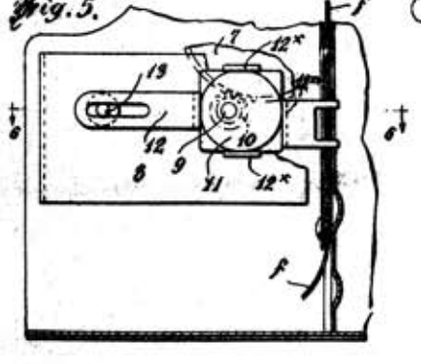
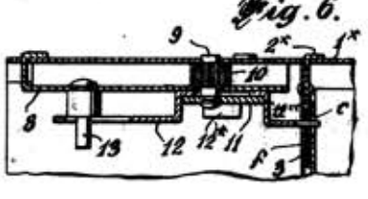


Fig. 6.



Certified to be the drawing referred to in the specifications hereunto annexed.

OTTAWA, August 12th, 1935

BY HIS ATTORNEY:

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