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TOY MOVING PICTURE PROJECTOR

Thomas S. MacMechan, Sharon, Mass., assignor
to Midgette Toy Company, Sharon, Mass.

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3 Claims. (Cl. 88—19)

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This invention relates to toy moving picture projectors, and more particularly to that type of moving pictures projectors adapted to project pictures from a plurality of opaque cards bearing consecutive pictures adapted, when projected in succession, to produce an illusion of movement.

An object of the invention is to provide a toy projector of the type indicated, so constructed as to produce a maximum illumination for the projection of the pictures from a relatively small source of light.

A further object of the invention is to provide a projector of the type indicated arranged with a removable rotor adapted to accommodate a plurality of picture cards arranged in books so that the books can be readily removed and replaced while at the same time assuring the secure and rigid positioning of the books in association with the rotor.

Further objects will more particularly appear in the course of the following detailed description.

The invention consists in the novel construction, arrangement and combinations of parts hereinafter more particularly described and claimed.

One sheet of drawings accompanies this specification as part thereof, in which like reference characters indicate like parts throughout.

In the drawings:

Figure 1 is a vertical, longitudinal cross-section through the improved projector;

Figure 2 is a transverse, vertical cross-section taken on line 2—2 of Figure 1;

Figure 3 is a fragmentary detailed inside elevation showing the journal for the projector rotor as secured upon the side of the housing;

Figure 4 is a fragmentary perspective view of the rotor removed showing one book of pictures in position and another book partially removed; and,

Figure 5 is a perspective view of a rotor hub showing a modified construction.

In accordance with the present invention a housing is provided consisting of two side wall members 1—1 of a general oval shape connected by an end wall 2 surrounding the periphery of the side walls 1 and fixedly secured to the side walls. The rear upper portion of the peripheral wall 2 is formed as a door part 4 hingedly connected at its forward end to the wall 2 as by hinge 5 and provided on its free end with a handle 6 and a spring catch 7 adapted to secure the door in closed position. The bottom part of the wall 2 is formed flat to constitute a bottom 3 for the housing, adapted to seat on a table or other support.

The forward end of the peripheral wall 2 is

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provided with an orifice through which the light rays are projected, which orifice is surrounded by a bushing 8 within which is slidably positioned a tubular lens support 9 having mounted therein the lenses 10—10.

Below the lens tube 9 is positioned a light socket 11 adapted to receive the electric light bulb 13 and to support a reflector 12 adapted to direct the light from the bulb 13 toward the pictures carried by the cards 17 which are arranged in books 18, the cards of each of the books 18 being secured together adjacent one margin as by staples 19, portions of which staples 19 project above the surface of the outer cards 17 for a purpose hereinafter more particularly explained.

The picture books 18 are carried by rotor 20 herein illustrated as of rectangular shape and provided on diametrically opposite sides with longitudinally extending slots 21, each of sufficient width and depth to snugly receive the bound edges of the picture books 18 as is well illustrated in Figure 4. At least one of the side walls of each of the slots 21 is provided with a longitudinally extending groove 22 adapted to slidably receive the projecting part 16 of the securing staples with which the book cards are bound together. It will thus be observed that when rotor 20 is removed from the housing the books 18 can be readily removed by sliding same sideways with respect to the rotor and replaced with other books, and in the embodiment herein illustrated each rotor can be charged with four separate books of pictures with each removal.

The rotor 20 is provided on each end with stub shafts 23 adapted to be slidably engaged with U-shaped spring clip bearing members 25 which can be conveniently formed from spring sheet metal, with a base portion 26 and secured to the side walls 1 of the housing as by rivets 27. On one end of the rotor 20 is further secured a gear 31 adapted to engage a small gear 32 journaled adjacent the upper part of one side wall 1 and provided with a hand crank 33 exterior of the housing, by means of which the rotor 20 can be rotated.

On the floor portion 3 of the housing is mounted a block 14 having a forwardly directed planar reflecting surface 15 and an upwardly directed edge 16 adapted to flex and flip successive cards as reel 20 is rotated.

The forward interior curved surface of the wall 2 at the portions indicated by the numeral 34 is also finished as a reflecting surface having its foci approximately at the point of flexed cards immediately before their release. By means of this arrangement it will be noted that the direct

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light from the bulb 13 is transmitted to the flexed cards as is also the reflected light from the reflector 12. Further, the reflector surface 15 diffuses any light directed thereon against the reflecting surface 34 of the housing, so that a maximum amount of all light produced by the bulb 13 is ultimately brought to bear on the outer flexed card 17 for transmission through lenses 10 to the screen.

In Figure 5 is illustrated a modified construction for the rotor 20 in which, in lieu of the longitudinal groove 22, a spring member 28 is utilized, which spring member 28 is formed of a slightly arcuate shape and provided with a longitudinal groove 30. The clip 28 is secured against one of the side walls of each of the slots 21 as by a brad 29 at one end of the clip, and provides a resilient engagement member for the fastening clip 19 of a book of pictures.

Other modifications in the structure will readily suggest themselves to those skilled in the art but all within the scope of the present invention as claimed.

Having thus described my invention, I claim:

1. In a toy moving picture projector having a housing, a lens holder, a source of light and means for flipping cards; a book comprising a plurality of picture bearing cards secured in book form by a staple, part of which staple projects on one face of the book as a ridge, and a rotor mounted within the housing formed with a book receiving slot, said slot having one wall grooved to slidably receive the ridge formed by the staple on the book to retain the book in the slot.

2. In a toy moving picture projector, a rotor formed with an axially disposed slot, a book comprising a plurality of picture bearing cards marginally secured by a staple, and groove means

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within the axially disposed slot of the rotor to engage the staple to retain the stapled end of the book in the slot.

3. In a toy moving picture projector having a housing with side walls, a rotor journaled on said side walls and extending between same, said rotor formed with an axially disposed slot, a book comprising a plurality of picture bearing cards marginally secured, said marginally bound part proportioned to fit said axial slot, and elongated ridge and groove means associated with said marginal bound portion of the book and a side wall of the slot respectively, extending lengthwise of the slot so as to permit sliding insertion of the bound portion of the book axially of the rotor and to positively prevent radial displacement of the book with respect to the rotor.

THOMAS S. MACMECHAN.

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T. S. MacMECHAN

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Fig. 1.

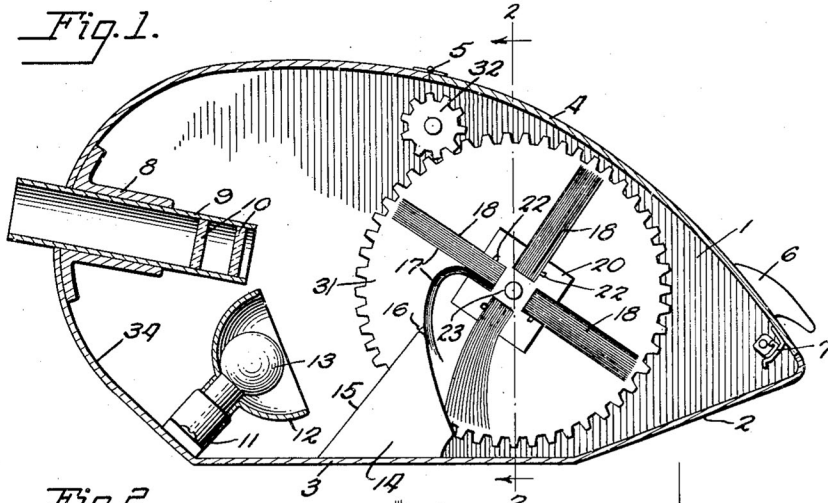


Fig. 2.

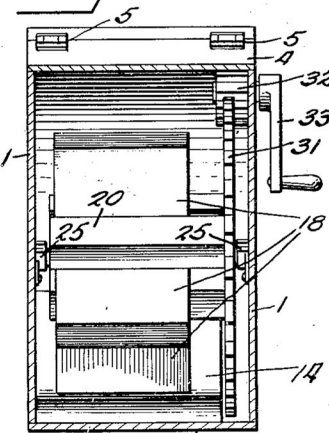


Fig. 4.

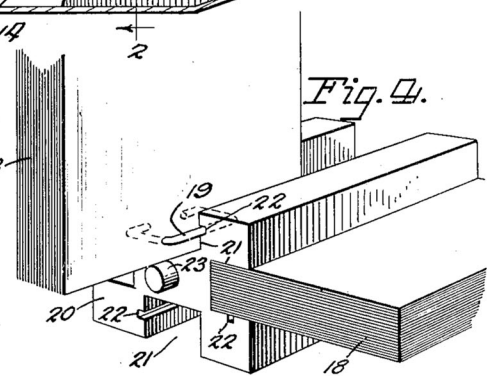


Fig. 5.

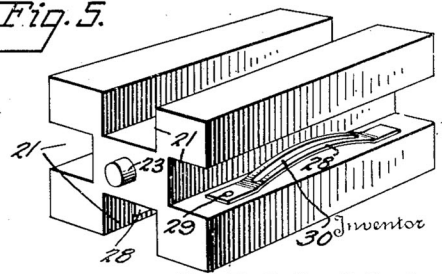
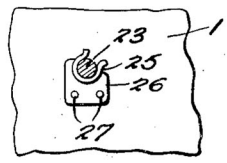


Fig. 3.



T. S. MacMechan

334 *Maxwell Fenwick Lawrence*
Attorneys