June 6, 1939. N. GOLDBERG 2,161,157

SPACER FOR THE SIDES OF MOVING-PICTURE REELS

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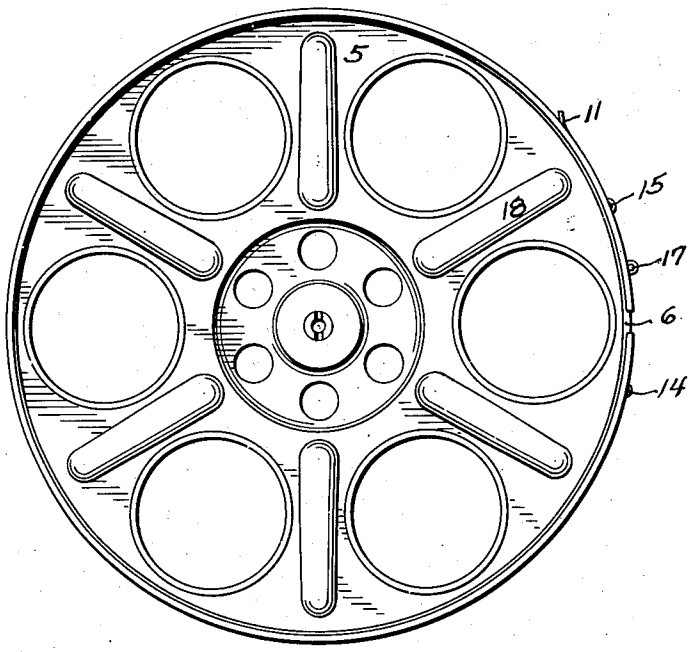


Fig. 1.

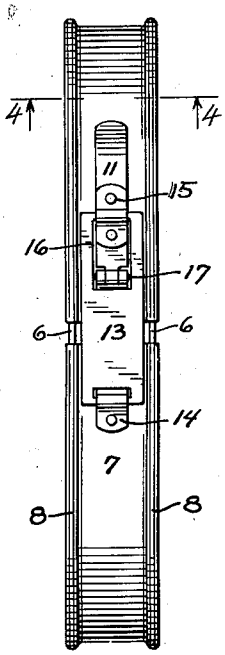


Fig. 2.

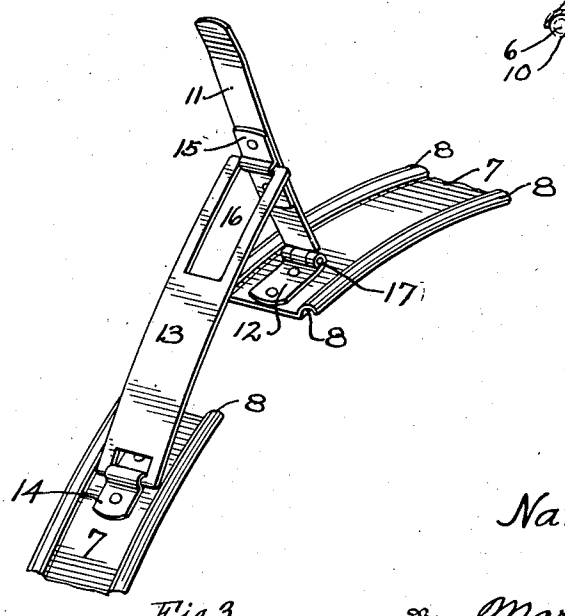


Fig. 3.

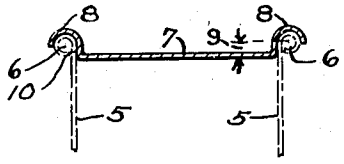


Fig. 4.

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SPACER FOR THE SIDES OF MOVING-PICTURE REELS

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2 Claims. (Cl. 206—52)

This invention relates to improvements in moving picture film reels and has reference more particularly to means for holding the sides in a fixed, spaced relation during the handling of the film.

Films for use by moving picture theaters must be shipped from place to place at frequent intervals and are usually wound on the ordinary reels used during exhibition, and are then enclosed in strong shipping cases. In most instances, two or more reels are enclosed in each case and, due to shocks received during handling, the sides of the reel are sometimes moved together with sufficient force to injure the edges of the film.

It is the object of this invention to produce a spacer device that can quickly be applied to and removed from a reel and which, when in place, will interconnect the peripherial edges of the sides in such a way that they are held from relative movement towards or away from each other.

The invention, briefly described, consists of a strip of metal of a length approximately equal to the circumference of the reel to which it is to be attached. The strip is provided with parallel grooves, spaced apart a distance equal to the distance between the sides of the reel. The strip is curved into approximately circular form, with the grooves on the inside and the ends are connected by some suitable means that holds the strip firmly against the peripherial edges of the reel, which are positioned in the grooves.

Having thus briefly described the invention, the same will now be described in greater detail, and for this purpose reference will be had to the accompanying drawing in which the invention has been illustrated and in which:

Figure 1 is a side elevation of a moving picture reel, showing the spacer in place thereon;

Figure 2 is an edge view and shows the latch device in operative position;

Figure 3 is a perspective view of the latch, showing the same in open position, and

Figure 4 is a section taken on line 4—4, Figure 2.

In the drawing reference numerals 5 designate the sides of an ordinary moving picture film reel and 6 the peripherial edges of the circular sides. The reel is, of course, provided with a hub on which the film is wound, but which has not been shown in the drawing.

The sides 5 are made from metal and are flexible so that when the reel is empty the sides may be moved towards each other by the application of a moderate force. When a reel is full of film it is quite heavy. In the winding the film layers are slightly offset and the edges of the film therefore do not present smooth even surfaces. When the sides of a reel are pressed together, the edges of the film are frequently crushed and broken so as to greatly injure the film.

It is evident that if a spacer is provided that prevents the sides of the film reel from moving towards each other, the ordinary forces to which the reel is subjected during handling will not be sufficient to bend the sides sufficiently to injure the film.

The device for spacing the sides, which forms the subject of this invention, consists of a metal strip or band 7 whose edges are provided with parallel grooves 8 spaced apart so as to receive the rolled peripherial edges 6 of the reel sides, in the manner shown in Fig. 4. It will be noted that the beads or grooves 8 have their centers outside of the outer surface of the band, a distance designated by numeral 9 in Fig. 4; this serves to give the band greater rigidity and to provide shoulders 10 that extend for an appreciable distance into the reel. The strip with its grooved edges is bent into substantially circular form with the grooves opening on the concave side.

In order to attach the spacer to a reel it is necessary to provide some suitable means for moving the ends of the band towards each other so as to tighten the band onto the reel and to latch or interlock the ends of the band so that it will remain in position during handling. In Figs. 2 and 3, a latching device has been illustrated in which a lever 11 has one end attached to one end of the band by a hinge comprising member 12. A link 13 has one end connected to the other end of the band by a pivotal connection comprising member 14 and its other end connected with lever 11 by a pivotal connection comprising member 15. The opening designated by numeral 16 is of sufficient length to receive the hinge 17 when the latch is closed, as shown in Fig. 2. It will be observed that lever 11 and link 13 are both curved longitudinally so as to fit the curved band when the latter is in place.

After the film has been wound on the reel and a band applied to keep it from unwinding, the spacer is applied. When the latch is moved to open position (Fig. 3) it separates the ends of band 71 and holds it open while it is put into position on the reel. When the band has been positioned on the reel, lever 11 is moved towards the position shown in Fig. 2, which movement contacts the band. The length of the band and the latching elements are so proportioned that when the parts are in the position shown in Fig.

2, the band will be under some tension and the band will therefore be secured tightly to the reel.

Lever 11 and link 13 form a toggle device of such design that it will remain latched, due to the fact that a line joining the pivots of hinges 14 and 15 will pass inside of the pivot of hinge 17, all as shown in Fig. 1.

The latching device illustrated may be replaced by some other suitable means, if desired, but has been found to be very satisfactory as it is easily operated and will retain the band under tension.

When the spacer is in place the reel forms a closed container for the film and when the reel sides are provided with strengthening ribs 18, they will withstand a large amount of pressure without bending to any appreciable extent.

Any number of reels of film can be shipped in a single case when the reels are provided with spacers as above described, as each reel becomes an independent container.

Although the specific construction illustrated on the drawing is believed to be the most suitable for the purpose, it is, of course, possible to get substantially the same results by specifically different means which operate in substantially the same way.

Having described the invention what is claimed is:

1. In combination with a moving picture film reel having a hub and spaced circular sides, means for closing the space between the edges of the sides and for holding the sides in predetermined spaced relation, comprising, a strip of material having spaced parallel grooves for the reception of the peripherial edges of the sides, and means for subjecting the strip to tension to urge it into operative engagement with the peripherial edges of the sides and for latching it in operative position, said means comprising a lever pivoted at one end to the strip, near an end of the latter, and a link pivoted to the other end of the strip and to the lever whereby a rocking of the lever about its pivot will vary the distance between the ends of the strip.

2. A device for use with moving picture reels having a hub and two concentric, spaced, circular sides, comprising a metal strip of a width slightly greater than the distance between the sides of the reel, the edges of the strip being formed into parallel grooves, spaced to receive the edges of the sides, the grooves being of sufficient depth to form stops for limiting the movement of the sides towards and away from each other, and means for interconnecting the ends of the strip and to subject the strip to tension whereby it will be urged into engagement with the peripherial edges of the circular sides, said means comprising a toggle device comprising, a lever pivoted at one end to the strip, near one end thereof, and a link having one end pivoted to the lever and the other pivotally connected with the other end of the strip, the toggle mechanism being arranged to move to overset position to effect a latching action.

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