April 28, 1931. M. FINKEL 1,803,241

FILM CHANGE-OVER SIGNALING BELL

Filed Oct. 8, 1930 2 Sheets-Sheet 1

Fig. 1.

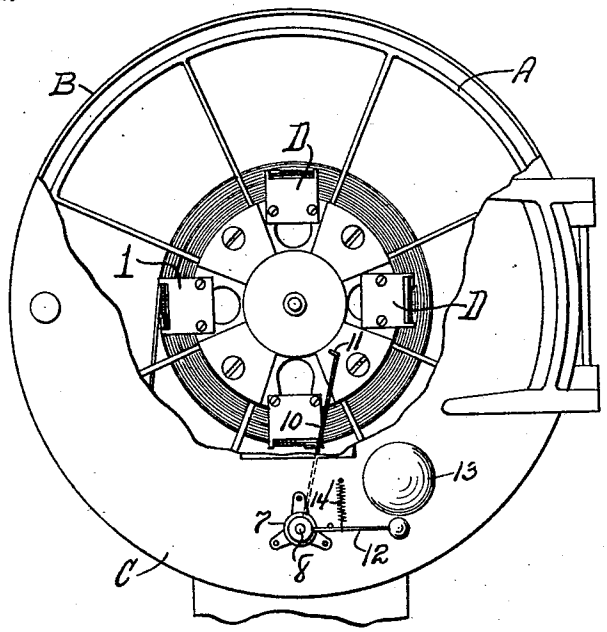
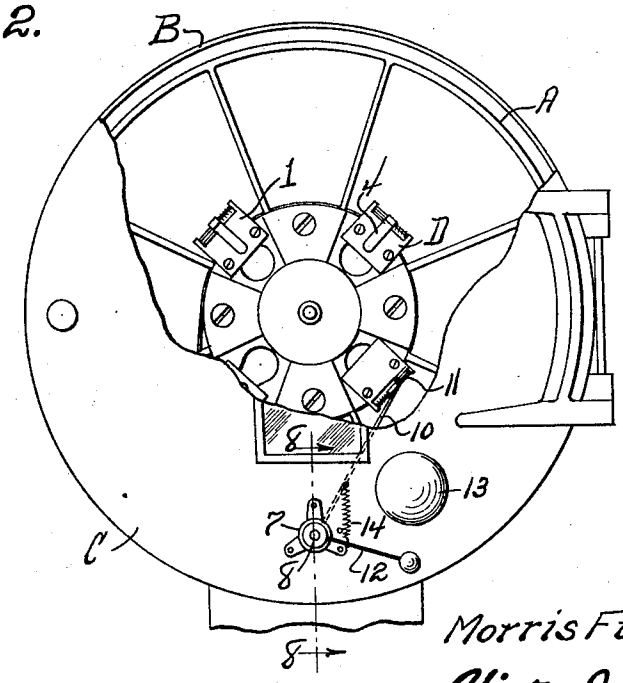


Fig. 2.



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Filed Oct. 8, 1930 2 Sheets-Sheet 2

Fig. 3.

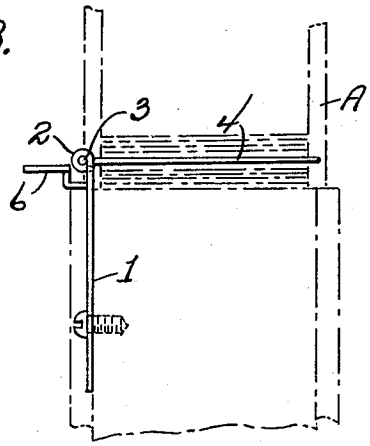


Fig. 4.

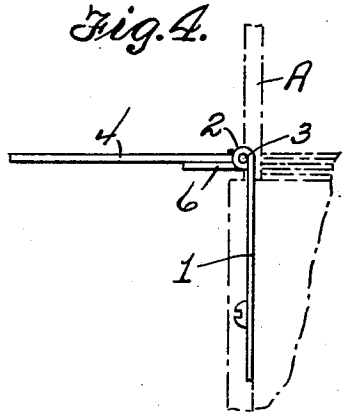


Fig. 5.

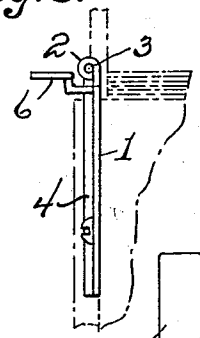


Fig. 6.

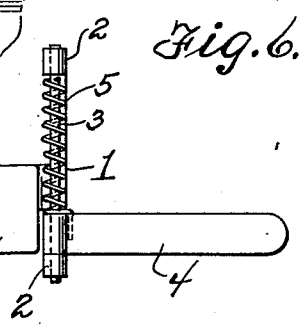


Fig. 7.

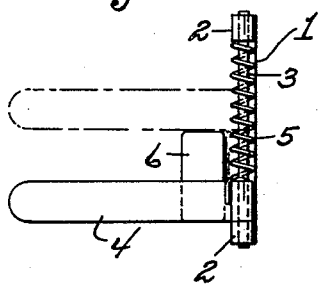
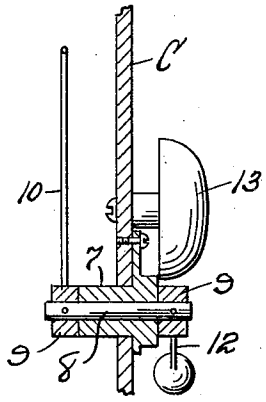


Fig. 8.



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1,803,241

UNITED STATES PATENT OFFICE

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FILM-CHANGE-OVER SIGNALING BELL

Application filed October 8, 1930. Serial No. 487,344.

This invention relates to a film change-over alarm, the general object of the invention being to provide means for automatically giving an alarm before the film is entirely unwound from a reel, so that the operator will be notified that the change-over soon must be made.

A further object of the invention is to provide a number of the devices for giving a number of alarms so that the operator will know about how much time he has before the change-over must be made.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is an elevation, with parts broken away, showing a reel provided with four of the devices.

Figure 2 is a view similar to Figure 1, but showing the parts in a different position.

Figure 3 is a view looking toward the reel and showing how the tongue or finger of the device is placed under the windings of the film.

Figure 4 is a view similar to Figure 3, but showing the tongue after it has been released by the film winding and in a position to operate the alarm means.

Figure 5 is a view similar to Figure 4, but showing the tongue in its inoperative position.

Figure 6 is a top plan view of the device which is fastened to the reel, with the tongue in a position to be covered by the film windings.

Figure 7 is a view similar to Figure 6, but showing the tongue in full lines in alarm operating position and in dotted lines after it has been moved by the lever which forms a part of the alarm operating mechanism.

Figure 8 is a section on line 8—8 of Figure 2.

In these drawings, the letter A indicates the film reel and the letter B the reel housing, the lid of which is shown at C. A plurality of alarm operating members D is fastened to the hub of the reel, each member consisting of a plate-like bracket 1 fastened to the hub and having eyes 2 formed at its outer end for receiving a rod 3 to which is rotatably and slidably connected a tongue 4. A spring 5 is placed on the rod and has one end connected with the rod and the other end engages the tongue so that this spring tends to hold the tongue against one of the eyes and in a position where it will rest against the member 1, as shown in Figure 5. A stop member 6 extends outwardly from the outer end of the member 1 adjacent that side of the member against which the spring holds the tongue.

A bushing 7 extends through a hole formed in the cover C and a shaft 8 is rotatably arranged in the bushing. A collar 9 is fastened to each end of the shaft. A rod 10 is connected with the inner collar and has its free end bent to form a hook 11 and a hammer 12 is carried by the outer collar, this hammer being adapted to strike the bell 13 which is fastened to the outer face of the cover. A spring 14, fastened to a hammer and a part of the cover, tends to hold the hammer against the bell.

Thus it will be seen that by placing the tongue 4 across the film which has been wound on the reel and then winding the balance of the film over the tongue, said tongue will be held in the position it occupies in Figure 3 until it is free of the windings placed thereover, when the spring 3 will swing the tongue to a point where it will rest upon the stop member 6, as shown in Figure 4. Thus during the rotary movement of the reel, the tongue will engage the rod 10 and cause said rod to partly rotate the shaft 8, which in turn will swing the hammer away from the bell. Then upon further movement of the reel, the hook 11 on the rod 10 will engage the tongue and cause it to pass off the stop 6 so that the spring 5 will cause the tongue to swing against the member 1, as shown in Figure 5 and when this takes place, the spring 14 will

cause the hammer to strike the bell and return the rod 10 to a position where it will be engaged by the tongue of the next device when said tongue of this device has been released by the further unwinding of the film. It will, of course, be understood that the tongues are placed under different portions of the wound film so that they will be released at different times during the unwinding action of the film.

As shown in Figures 1 and 2, I provide four of the devices so that the alarm will be sounded four times, but it will, of course, be understood that as many devices can be used as desired, and by not placing the tongues under the film windings, the devices will be as shown in Figure 5, and thus will not operate the alarm.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. A film change-over alarm comprising a signal device, an arm associated therewith for operating the same when the arm is moved, a support carried by the film reel, a tongue pivotally and movably connected with the support, a spring for normally holding the tongue out of the path of the arm, said tongue being adapted to be placed under a part of the film wound on the reel so that the spring will swing the tongue into the path of the arm when the tongue is free of the film, a stop member for holding the tongue in the path of the arm, said arm moving the tongue off the stop member after it has been swung to a certain position by the tongue.

2. In combination with a reel of a motion picture apparatus and its magazine, a supporting plate attached to one side of the reel, a tongue slidably and rotatably supported by the plate, a spring tending to hold the tongue against sliding movement and against the plate, the tongue being adapted to be placed between some of the convolutions of the film on the reel, a stop member on the plate, the spring swinging the tongue against the stop member when the tongue is released by the film, signal means and operating means therefor carried by the magazine and including a part engaged by the tongue when the same rests on the stop member for actuating the signal means, said part causing the tongue to move off the stop member after the signal means have been operated so that the spring will move the tongue into inoperative position against the plate.

3. In combination with a reel of a motion picture apparatus and its magazine, a supporting plate attached to one end of the hub of the reel, a tongue slidably and rotatably supported from the plate, a spring resisting the sliding movement of the tongue and acting to hold the tongue against the outer side of the plate, said tongue being adapted to be placed between some of the convolutions of the film on the reel, a stop member on the plate against which the spring swings the tongue when the tongue is released by the film, an alarm on the magazine, a shaft rotatably supported in a part of the magazine, a hammer on the outer end of the shaft for engaging the alarm, an arm connected with the inner end of the shaft and engaged by the tongue when the same rests on the stop member, said arm having a bent end for moving the tongue off the stop member after the alarm has been actuated so that the spring can move the tongue into inoperative position against the side of the plate.

In testimony whereof I affix my signature.

MORRIS FINKEL.