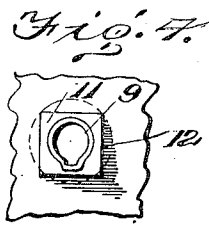
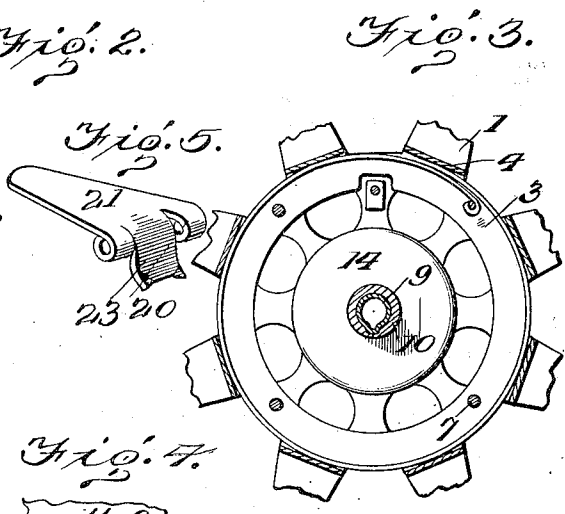
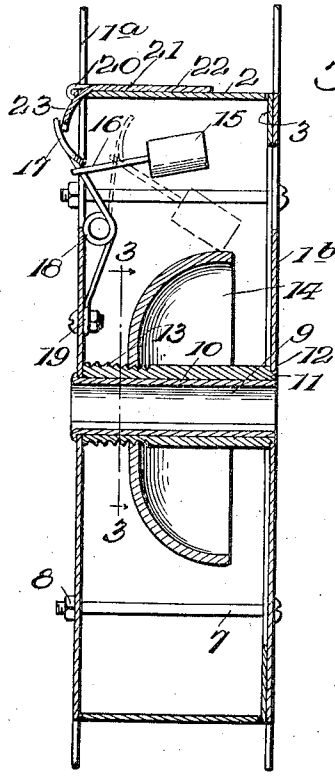
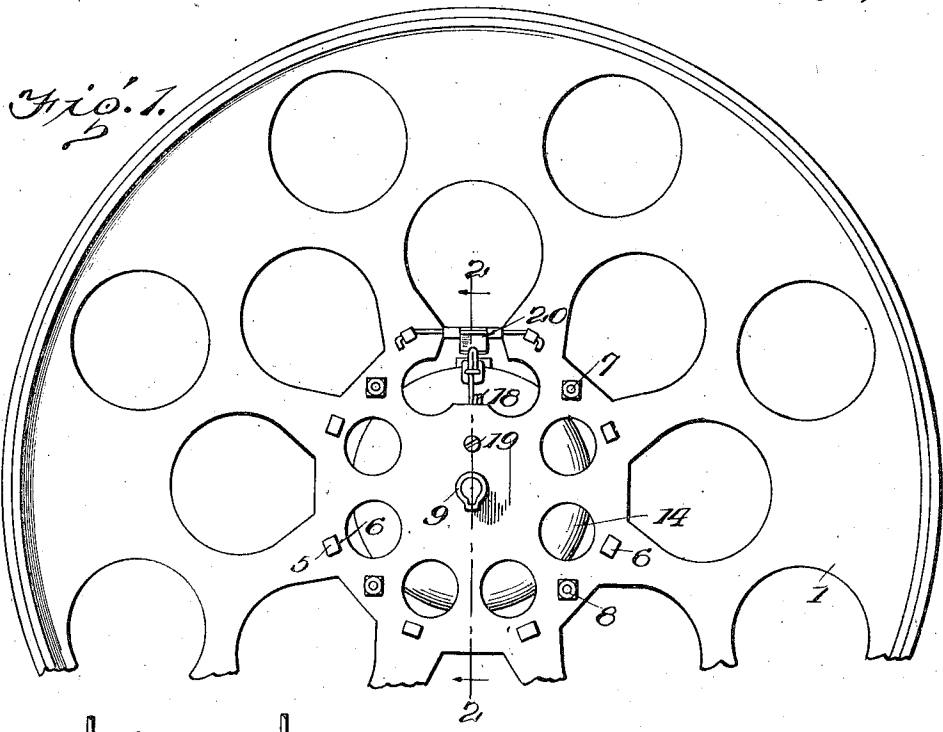


M. F. WALKER.
 ALARM FOR MOTION PICTURE FILM REELS,
 APPLICATION FILED SEPT. 25, 1918.

1,348,609.

Patented Aug. 3, 1920.



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ALARM FOR MOTION-PICTURE-FILM REELS.

1,348,609.

Specification of Letters Patent.

Patented Aug. 3, 1920.

Original application filed March 14, 1918, Serial No. 222,436. Divided and this application filed September 25, 1918. Serial No. 255,718.

To all whom it may concern:

Be it known that I, MOSES F. WALKER, a citizen of the United States, residing at Cadiz, in the county of Harrison and State of Ohio, have invented certain new and useful Improvements in Alarms for Motion-Picture-Film Reels, of which the following is a specification.

This invention relates to motion picture film reels.

In the exhibition of motion pictures it is customary to employ two projecting machines so that one machine being in operation to project the motion pictures, and the end of the film passing therethrough having been reached, the operator may immediately commence the operation of the second machine so as to avoid interruption or delay in the exhibition of the pictures and in this manner the two machines may be alternately operated so as to reproduce, for example, an entire play without interruption which would otherwise be necessary in order to permit of removal of the magazine reel and the placing in position of the new reel and the threading of the film through the machine. In order that two machines may be successfully employed in this manner, however, it is, of course, essential that the operator know when the end of the film being exhibited has been substantially reached. Although the practice is discouraged, and in some cases prohibited, an operator will ordinarily open the door of the fire-proof magazine, from time to time in order to ascertain the length of film remaining on the magazine or supply reel. Not only is this practice exceedingly dangerous, as the heat from the arc of the projecting machine is liable to set fire to the film, but furthermore, the operator's attention is, to a greater or less extent, detracted from the operation of the machine and he is liable to operate the same either too rapidly or too slowly. It is therefore, one aim of the present invention to provide, in connection with a film reel of the class described, means which will give audible signal when all but a predetermined length of the film has been unwound from the reel, so that with a little practice the operator, in the use of the device, may determine almost exactly the number of turns to give the operating crank of the projecting apparatus after hearing the signal and before beginning to turn the crank of the

second machine. Therefore not only does the invention discourage the dangerous practice of opening the door of the magazine, but it also presents obvious advantages over certain devices which have been proposed for use and which embody visible indicating means whereby the length of film upon the supply reel may be determined, for in the use of such devices the operator must pay more or less close attention to the indicator.

Another aim of the invention is to provide an audible alarm for the purpose above described which will be so constructed that the operator of the machine may set the same to give signal when all but any desired length of the film has been unwound from the reel. In other words, the invention may be made use of by an operator who desires to be warned when there is, for example, only a foot of film left upon the magazine or supply reel, as equally as well as it may be employed by an operator who desires to be warned when there are three or four feet, for example, of film remaining upon the reel.

In order that a device of this class may be most certain and accurate in its functioning, it is, of course, essential that its actuation be controlled by the unwinding of the film and the present invention, therefore, aims to so construct the device that although it possesses this advantage, it will not be in any manner likely to injure the film or place any undue tension thereon.

This application constitutes a division of my application filed March 14, 1918, Serial No. 222,436.

In the accompanying drawings:

Figure 1 is a view in side elevation of the film reel embodying the present invention;

Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view taken substantially on the line 3—3 of Fig. 2 looking in the direction indicated by the arrow;

Fig. 4 is a detail view in elevation looking at the central portion of one head of the reel;

Fig. 5 is a perspective view of an element of the alarm device.

In the drawings the heads of the reel are indicated in general by the numeral 1 and the hub is indicated in general by the numeral 2. The said hub is preferably formed

from a sheet metal blank and comprises an annular body 3 which forms a head of the hub, the said body being provided at its outer periphery with integral portions 4 which extend at right angles to the plane of the body 3 and at their outer ends are provided with tongues 5 which are fitted through slots 6 formed in one head of the reel and struck down, as shown in Fig. 1 of the drawings. The other head of the reel is removably secured in place by means of bolts 7 which are fitted through registering openings formed in the said head of the reel and the said head 3 of the hub, the bolts passing also through openings in the other head of the reel and having applied thereto nuts 8 which bear against the outer face of the last-mentioned head of the reel. The last mentioned head of the reel is indicated specifically by the numeral 1^a and the other head by the numeral 1^b.

The spindle bearing for the reel comprises a sleeve 9 which at one end is fitted through an opening formed in the head 1^a and is riveted down, as clearly shown in Fig. 2 of the drawings. The other end of the sleeve 9, however, is not riveted, and slidably fitted onto the sleeve is a second sleeve 10 which at one end is reduced and squared as indicated by the numeral 11 so as to fit within a correspondingly shaped opening 12 formed axially in the head 1^b of the reel. Exteriorly the sleeve 10 is threaded at its opposite end, as indicated by the numeral 13, and fitted onto this end of the sleeve is a bell 14. For coaction with the bell 14 there is provided a striker comprising a head 15 which is fixed at one end of a resilient wire shank 16, which shank near the said end is bent to provide a finger 17 and beyond the finger the said wire is coiled as at 18 to give the increased resiliency. The other end of the wire shank is secured as at 19 to the head 1^a of the reel and the resiliency of the shank is such that when the finger 17 is pulled or moved in the direction of the head 1^a and released, the striker head 15 will be caused to strike the bell 14. Pivotally mounted as at 20 upon the head 1^a is a detent member indicated in general by the numeral 21 and including a film engaging arm 22 and a lip 23, the arm and lip lying at opposite sides of the pivot 20 and the arm being designed to extend across the film and consequently across the hub of the reel. The lip 23, however, extends in the path of movement of the finger 17 so as to be engaged by the said finger when the signal device is set for actuation in a manner which will now be explained.

In setting the device, a predetermined length of film is first wound upon the reel and the arm 22 is then placed over the film and the winding of the film is completed. Finally the finger 17 is grasped and placed in engagement with the lip 23 and the reel

is then ready to be placed in the magazine. As the film is unwound from the reel and as that portion in the length thereof which extends over the arm 22 leaves the hub, the arm 22 will be released and the detent member as a whole will be swung under the influence of the resilient shank 16 thereby permitting the finger 17 to disengage from the lip 23 and the striker head 15 to strike the bell 14 and give audible signal to the operator of the projection apparatus for the purpose hereinbefore stated. Inasmuch as the arm 22 exerts pressure or strain in an outward direction against the portion of the film which extends over it, it is desirable that the said arm be given the tapered shape shown in Fig. 5 of the drawings so as to minimize the chances of scratching or otherwise injuring the film.

The device embodying the present invention is, of course, adapted for adjustment to warn the operator when there is one film or any predetermined number of films remaining upon the reel to be unwound and in fact, if desired, two of the devices may be placed upon the same reel so that one device will serve to warn the operator to close the electric circuit through the arc lamp of the second machine to permit of the formation of the crater and therefore provide against interruption of the projection of the light rays. This particular alarm would, of course, sound some time before sounding of the other alarm for the purpose stated.

Having thus described the invention, what is claimed as new is:

1. In a film reel, a bell carried by said reel, a striker element for coaction therewith, and means for actuating the striker element, the striker element being arranged to be actuated automatically when all but a predetermined length of the film has been unwound from the reel.

2. The combination with a film reel, of a sounding element carried thereby, a striking element normally tending to coact with the sounding element, and a film released detent for the striking element actuated when all but a predetermined length of film has been unwound.

3. The combination with a film reel, of a sounding element carried thereby, a striking element normally tending to coact with the sounding element, and a detent for the striking element including a portion to be engaged by the film wound upon the reel until such time as all but a predetermined length of film has been unwound.

4. The combination in a film reel, of a bell carried thereby, and a striker normally urged toward the bell, and a film released detent extending between the convolutions of the film to be released when all but a predetermined length of film is unwound to permit actuation of said striker.

5. The combination in a film reel, of a bell

carried on the hub thereof, a striker normally urged toward the bell, and a film released detent extending between the convolutions of the film to be released when all but a predetermined length of film is unwound to permit actuation of said striker. 10

5 a predetermined length of film is unwound to permit actuation of said striker.

6. The combination in a film reel having heads, a bell mounted intermediate the heads,

a striker, and a film released detent extending between the convolutions of the film to be released when all but a predetermined length of film is unwound to permit actuation of said striker.

In testimony whereof I affix my signature.

MOSES F. WALKER. [L. s.]