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FILM CONTROLLED SAFETY STOP FOR MOTION PICTURE PROJECTORS

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FIG. 1

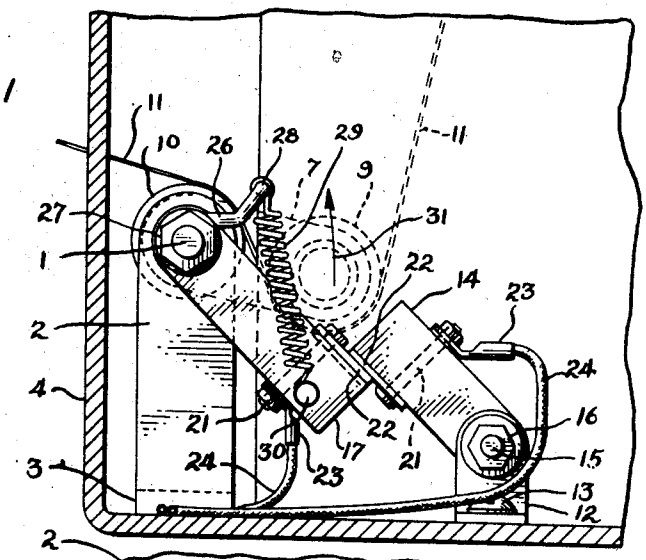
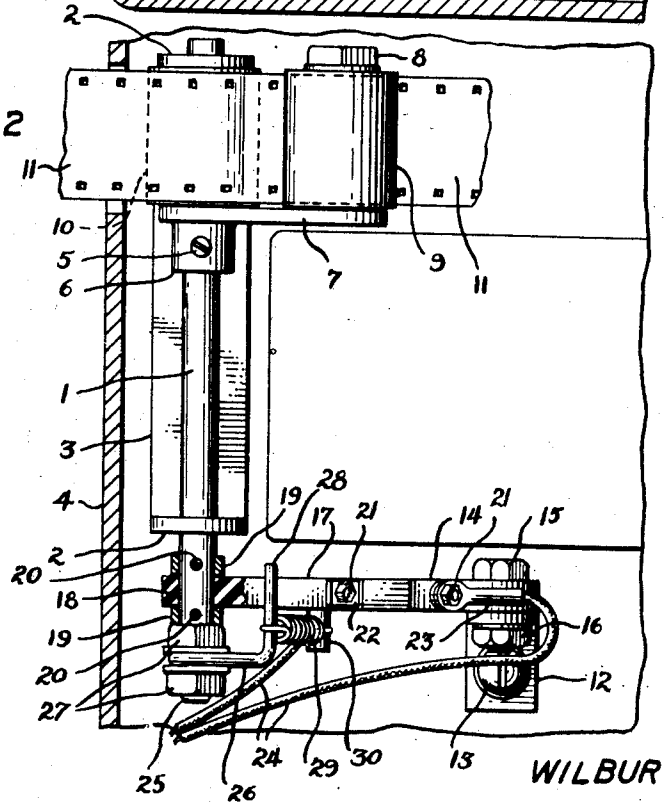


FIG. 2



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FILM CONTROLLED SAFETY STOP FOR MOTION-PICTURE PROJECTORS

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3 Claims. (Cl. 200—52)

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This invention relates to new and useful improvements and structural refinements in safety stops for motion picture projectors, and the principal object of the invention is to provide a device of the character herein described in which the rupture of the film automatically and immediately shuts off the source of current to the driving motor and the lamp of the projector, so as to prevent the extreme danger which is frequently experienced when a portion of the ruptured film comes to stop before the lens of the lamp and is ignited by the intense heat of the light rays.

A further object of the invention is to provide a safety stop which will respond not only to the rupture of the film which most frequently occurs in the intermittent feed mechanism of the projector, but which will be actuated by excessive slackening of the film, whatever may be the cause therefor.

Another object of the invention is to provide a safety stop which is of simple construction and dependable in operation.

An additional object of the invention is to provide a safety stop which may be universally applied to any style and design of motion picture projectors.

With the above more important objects in view, and such other objects as may become apparent as this specification proceeds, the invention consists essentially of the arrangement and construction of parts as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the invention, showing the same in situ on a projector,

Figure 2 is a plan view of the subject illustrated in Figure 1.

Like characters of reference are used to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the invention consists of a rotatable shaft 1, journalled in the arms 2 of a U-shaped bracket 3, which is suitably secured to the framework of the projector 4.

Secured to the shaft 1 by means of the set screw 5 is a boss 6, formed integrally at one end of an arm 7. The remaining end of said arm is provided with a stud 8, positioned on which is a freely rotatable jockey roller 9.

An idle roller 10 is freely rotatable on the shaft 1 in alignment with the roller 9 and the film 11 is threaded between the two rollers, that is, under the roller 9 and over the roller 10, as will be clearly apparent from the accompanying drawings.

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An angle bracket 12 is secured to the framework of the projector 4 by means of a suitable bolt 13 and a stationary contact block 14, formed of insulating material, is rigidly secured to the bracket 12 by means of a bolt 15 and the nut 16.

A coacting contact block 17 is provided in one end thereof with an aperture 18, whereby it may be pivotally positioned upon the shaft 1 between a pair of collars 19. The latter may be secured to the shaft in any desired manner, such as by transversely extending pin 20, as illustrated in the accompanying Figure 2.

The blocks 14 and 17 are each provided with a transversely extending aperture adapted to receive a bolt 21 which is used to secure a contact plate 22 and a terminal lug 23 to the opposite sides of each block.

The terminals 23 are in turn, connected to a pair of conductors 24, the latter being in circuit with the driving motor and the lamp of the projector 4.

The shaft 1 is provided with a screw-threaded end 25, on which a crank 26 is locked in position between a pair of nuts 27. The free end of the crank 26 is angulated to provide a portion 28 parallel to the shaft 1, and one end of a tension spring 29 is anchored on this angulated portion, as will be clearly apparent from the accompanying drawings. The remaining end of the spring is anchored on a pin 30 which projects from the side of the contact block 17.

When the invention is placed in operation, the tension of the film 11 will normally urge the jockey roller 9 upwardly in the direction of the arrow 31, this action being transmitted through the shaft 1 and the associated crank 26 to the spring 29. Resultingly, the plates 22 will be kept in contact and current will flow through the conductors 24 to the driving motor and the lamp of the projector. It will be noted in this connection that minor fluctuations in the tension of the film will be absorbed by the resiliency of the spring 29 and the passage of current through the contacts 22 will not be interrupted.

In the event that the film becomes ruptured, or that it is otherwise excessively slackened such as by breakage of cables which drive the take-up magazine, the arm 7 and the associated jockey roller 9 will fall downwardly under their own weight, resulting in a corresponding movement of the crank 26. The spring 29 will in turn, no longer support the contact block 17 and the contact of the plates 22 will be broken. The interruption in the flow of current will stop the operation of the lamp and the driving motor of

the projector and the advantages of the invention as outlined in the objects of this specification become readily apparent.

While in the foregoing there has been shown and described the preferred embodiment of this invention it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

What I claim as my invention is:

1. Film controlled safety stop for motion picture projectors, comprising, in combination, a rotatable shaft, an arm secured at one end thereof to said shaft, a jockey roller at the remaining end of said arm, said roller engaging said film, a stationary contact, a coacting contact pivoted on said shaft, said contacts being in circuit with the driving motor and the lamp of said projector, a crank secured to said shaft, and a tension spring between said crank and said pivoted contact, said spring normally urging said contacts together.

2. Film controlled safety stop for motion picture projectors, comprising, in combination, a rotatable shaft journalled in the framework of said projector, an arm secured at one end thereof

to said shaft, a jockey roller at the remaining end of said arm, an idle roller rotatable on said shaft and parallel to said jockey roller, said film being threaded between and engaging said rollers, a stationary contact on said framework, a coacting contact pivoted on said shaft, said contacts being in circuit with the driving motor of said projector, a crank secured to said shaft, and a tension spring connecting said crank to said pivoted contact, said spring normally urging said contacts together.

3. The device as defined in claim 2 in which said contacts are also in circuit with the projector lamp.

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