

Jan. 11, 1938.

E. SAELENS ET AL

2,104,952

SWITCH FOR FIRE PREVENTION DEVICES FOR MOTION PICTURE MACHINES

Filed Jan. 23, 1935

Fig. 1

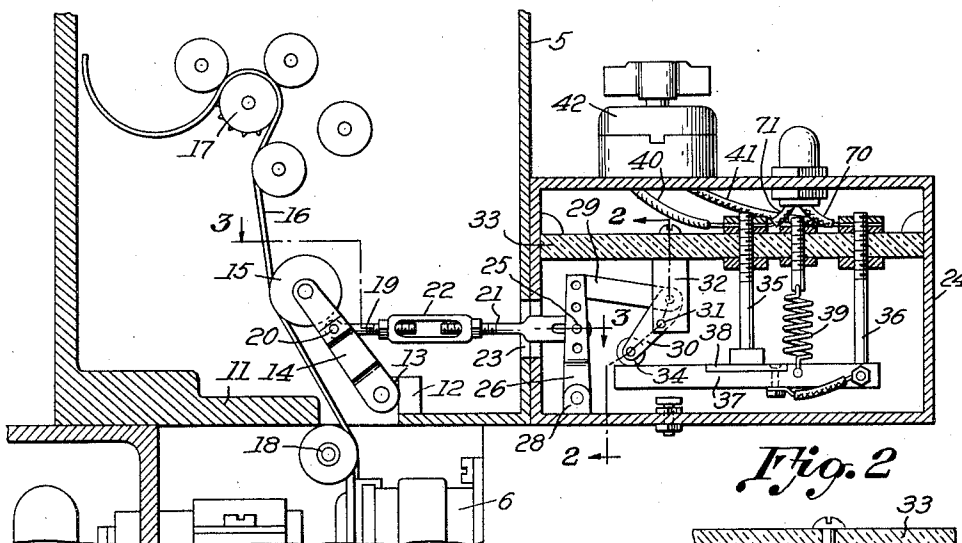


Fig. 2

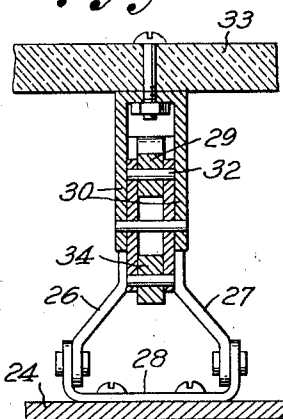


Fig. 3

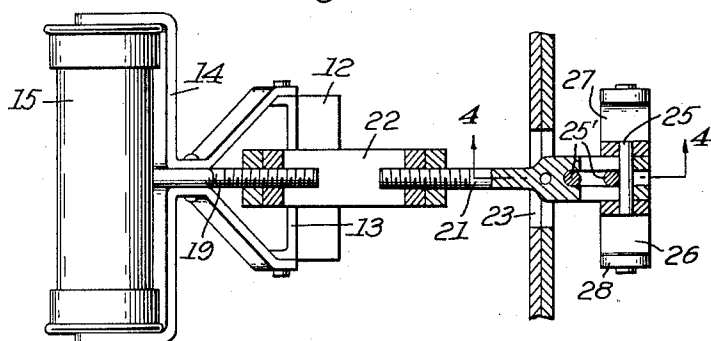


Fig. 4

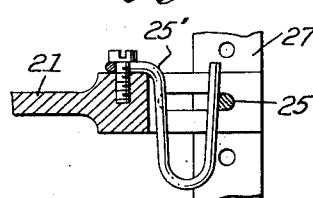
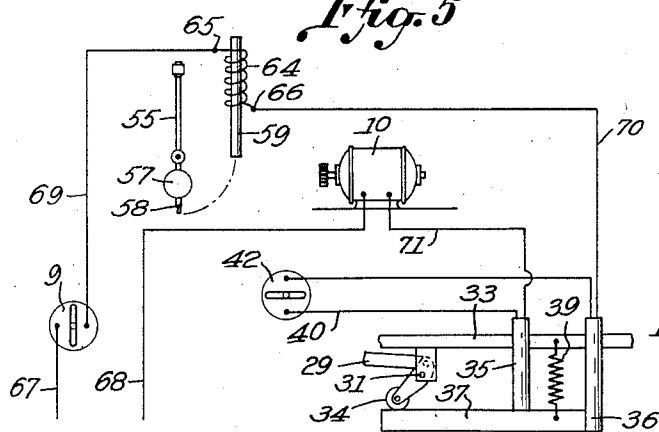


Fig. 5



Inventors.

EDMOND SAELENS
CELESTIN MOREAU

By *Myron B. Stevens*
Attorney.

UNITED STATES PATENT OFFICE

2,104,952

SWITCH FOR FIRE PREVENTION DEVICES
FOR MOTION PICTURE MACHINESEdmond Saelens, St. Boniface, and Celestin
Moreau, Notre Dame des Lourdes, Manitoba,
Canada

Application January 23, 1935, Serial No. 3,154

1 Claim. (Cl. 200—52)

In the operation of motion picture projection machines, it is a well known fact, that a moving film will safely pass across the strong rays from the projection lens without becoming ignited, but when a film break occurs in the head mechanism, and the loose end piles up under the rays, heat is quickly absorbed resulting in combustion. The object of the present invention is to provide attachments to the projecting machine which will interrupt the rays should the film break and simultaneously shut off the motor of the machine preventing jammed accumulation of the film in the head mechanism.

A further object of the invention is to construct the attachments in a simple, cheap and durable manner without altering any of the working parts of the projecting machine.

With the above important objects in view the invention essentially consists in the arrangement and construction of parts hereinafter more particularly described, reference being had to the accompanying drawing in which:

Fig. 1 is a vertical longitudinal sectional view showing the lower part of the head mechanism and the automatic switch mechanism associated therewith.

Fig. 2 is an enlarged cross sectional view taken at 2—2, Figure 1.

Fig. 3 is an enlarged horizontal section taken at 3—3, Figure 1.

Fig. 4 is an enlarged vertical sectional view taken at 4—4, Figure 3.

Fig. 5 is a diagrammatic view of the wiring circuit of the invention.

In the drawings, like characters of reference indicate corresponding parts in the several figures.

In the operation of the usual motion picture projection machine, the film in the upper magazine, enters a head mechanism 5, passes across the rays of the light beam from the condenser lens, and then passes to the lower magazine through a sound head 6.

Referring to Fig. 1, the base of the head mechanism 5 is provided with a transversely positioned block 12. A U-shaped bracket 13 is supported from the block and in turn pivotally supports the ends of an X-shaped framework 14. The opposite ends of this framework rotatably receive a flanged roller 15 which is in contact with, and rides the face of, a film 16 which is passing from the last sprocket 17 in the head mechanism to the first roller 18 in the sound head 6. A rod 19 is pivoted at 20 to the framework and the opposite end of this rod is connected to a further rod 21 through a turnbuckle 22. The rod 21 passes

through an opening 23 in the head mechanism and into a switch box 24 which is fastened thereto. The end of the rod is then forked and each fork slotted to receive a pivot pin 25 connecting a pair of cranks 26 and 27 which are pivotally mounted on a U-shaped bracket 28 located on the bottom of the switch box. A spring wire 25' is fastened to the rod 21 at the base of the forks, extends down therebetween, is then bent back on itself to come up and form a spring pressure against the pin 25. This construction is provided to permit the use of old or new film, there being a difference in the distance between the slots on the sides thereof.

The upper ends of the cranks 26 and 27 are pivotally connected to a link 29 and the opposite end of the link is pivotally connected to a pair of rocker bars 30 pivoted at 31 to a U-shaped bracket 32 supported from an insulating plate 33 which in turn is supported between the walls of the switch box. A roller 34 is rotatably mounted between the lower ends of the rocker bars 30. A pair of standards 35 and 36 project downward from the plate 33 and the lower end of the standard 36 pivotally supports one end of an insulating bar 37 which is provided with a plate 38 electrically connected with the standard 36. A coil spring 39 interposed between the bar 37 and the plate 33 holds the said plate in electrical contact with the lower end of the standard 35 and also, the end of the bar 37 in contact with the roller 34. The standards 35 and 36 are further electrically connected through the wires 40 and 41 with a snap switch 42.

From the above it will be apparent that if the film should break in the head mechanism the roller 15 will fall and in so doing cause the roller 34 to move the bar 37 down and disengage the plate 38 from the standard 35, stopping the motor. If it should be desired to run the motor while the plate and standard are disconnected the snap switch 42 may be turned on.

In making the electrical connections on the machine to include the present invention the wiring connections are altered to that shown in the diagram in Figure 5. The main lead wires to the machine are indicated at 67 and 68, that number 67 connecting to one terminal of the flush switch 9, and that 68 connecting to one terminal of the motor. The other terminal of the flush switch is connected by a lead wire 69 to the terminal 65 on the casing 62. The terminal 66 of the same casing is connected by a lead wire 70 to the standard 36, while the standard 35 is connected to a lead wire 71 which completes the circuit to

the motor. The snap switch 42 and lead wires 40 and 41 are also indicated in the diagram.

We will now describe the operation assuming the various parts are in the position shown in the drawing. The operator strikes the carbons in the lamp house and the flush switch 9 is pressed to start the motor and cause the film to move down into the lower magazine. The magnetized end of the core 59 will retain the dowser 55 in position out of the way. Accordingly the rays of light coming from the hood pass through the film and out to the projection screen. Should the film break the flanged roller 15 will drop, and the circuit will be broken between the plate 38 and the standard 35 shutting off the motor. As the current stops in the winding 64 the core 59 becomes de-energized and accordingly the dowser 55 will be released to swing into the vertical position and cause the disc 57 to blanket the light rays, to the film.

From the above arrangement it will be apparent that by automatically shutting off the light rays immediately after the film breaks, fire is positively prevented and by simultaneously shutting off the motor through the switch, much valuable film is prevented from damage plus the saving in the operator's time in clearing the machine.

What we claim as our invention is:

In a fire prevention device for moving picture

machines including means for stopping the motor and interrupting the light beam upon the breaking of the film; a film riding roller mounted in a swingable frame, said roller and frame being adapted to drop down upon the breaking of the film, a turnbuckle having one end attached to said frame, a yoke swingably mounted at its base to a support, the other end of said turnbuckle being pivotally connected to said yoke between the free end thereof and the base, a link having one end pivotally connected to the free end of said yoke, a rocker bar pivotally mounted between its ends to a support, one end of said rocker bar being pivotally connected to the other end of said link, an anti-friction roller freely mounted on the other end of said rocker bar, a substantially horizontally disposed movable contact bar pivotally connected at one end to a support, a stationary contact above said bar, spring means normally maintaining said bar in engagement with said stationary contact, said roller having an anti-friction connection with said movable contact whereby the dropping down of said film riding roller actuates said turnbuckle to swing said yoke whereby to actuate said link to swing said rocker bar about its pivot and cause said roller to depress said movable contact to open the circuit.

EDMOND SAELENS.
CELESTIN MOREAU.