M. W. PAULEY.

AUTOMATIC STOP FOR MOVING PICTURE MACHINES.

APPLICATION FILED MAR. 14, 1921.

1,406,889. Patented Feb. 14, 1922.

FIG. 1.

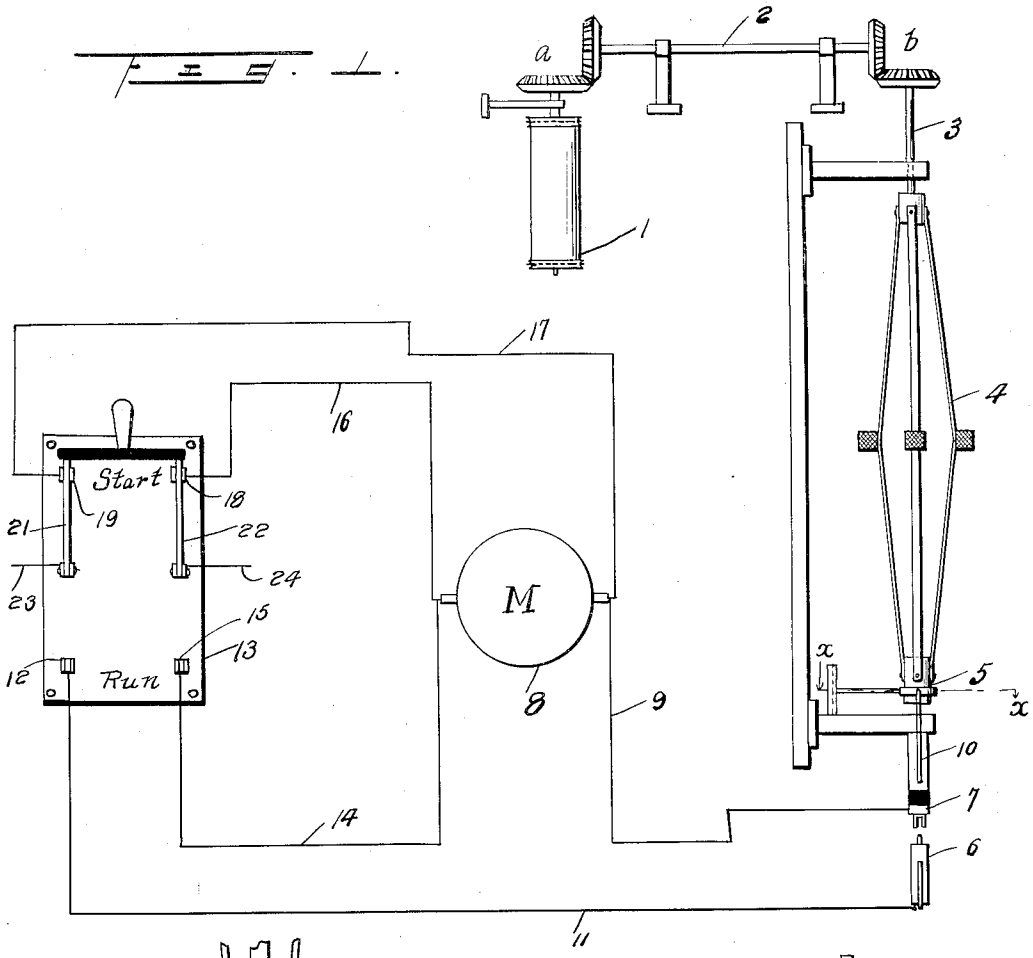


FIG. 2.

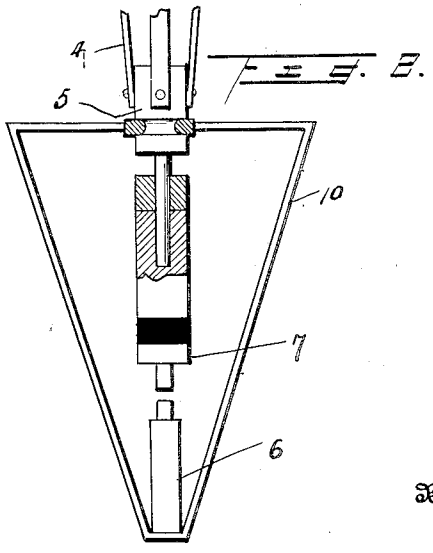
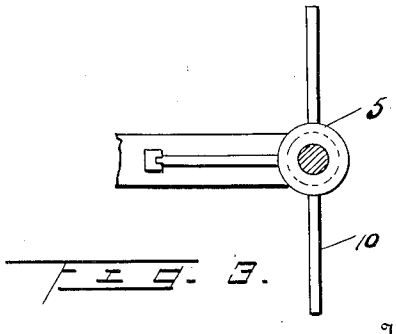


FIG. 3.



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AUTOMATIC STOP FOR MOVING-PICTURE MACHINES.

1,406,889. Specification of Letters Patent. Patented Feb. 14, 1922.

Application filed March 14, 1921. Serial No. 452,066.

To all whom it may concern:

Be it known that I, MAX W. PAULEY, a citizen of the United States, residing at Rogers, in the county of Presque Isle and State of Michigan, have invented certain new and useful Improvements in Automatic Stops for Moving-Picture Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In the operation of motion picture projectors the film frequently breaks from one cause or another. It is important that the driving mechanism should stop the instant the film breaks to prevent the film from feeding.

The present invention provides means actuated by the film under normal conditions but which means are rendered inactive in case the film should become broken, thereby bringing the driving mechanism to a standstill.

The invention consists of a governor mechanism, actuating means therefor driven by the film, and a switch or like motor control actuated by the governor mechanism.

For a full understanding of the invention and the merits thereof reference is to be had to the following description and the drawing hereto attached, in which,

Figure 1 is a diagrammatic view of an automatic stop for motion picture machines embodying the invention,

Figure 2 is a detail view of a portion of the governor and the circuit closer operated thereby, showing the parts on a larger scale, and

Figure 3 is a horizontal section on the line *x*—*x* of Figure 1.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

The numeral 1 designates the usual film sprocket adapted to be actuated by the film in a manner well understood in the art. A shaft 2 is connected at one end by bevel gearing *a* with the shaft of the film sprocket 1 and is connected at its opposite end by bevel gearing *b* with the shaft 3 of a suitable governor mechanism 4. The governor mechanism includes an axially movable collar 5 with which a frame 10 has swivel connection. A contact 6 is carried by the frame 10 and moves therewith. A relatively fixed contact 7 cooperates with the movable contact 6 to close the running circuit under normal conditions. The running circuit includes the lead wires 9 and 11 which are in electrical connection with the respective contacts 7 and 6. The lead wire 11 connects with a contact 12 of a double-throw switch 13. The lead wire 9 connects with one terminal of the electric motor 8, and a lead wire 14 connects the other terminal of the motor with a contact 15 of the switch 13. A starting circuit is provided and likewise includes the motor 8. This starting circuit includes feed wires 16 and 17 which are in electrical connection with the terminals of the motor 8 and connect with contacts 18 and 19, respectively, of the switch 13. The switch 13 includes two blades 21 and 22 which are connected for simultaneous operation. Lead wires 23 and 24 connect with the respective blades 21 and 22 and supply current thereto from a suitable source.

Figure 1 shows the starting circuit closed and the running circuit open. The running circuit is open at the switch 13 and at the governor mechanism by separation of the contacts 6 and 7, as indicated in Figures 1 and 2. When it is required to operate the machine, it is first necessary to close the starting circuit, as indicated in Figure 1. This closes the circuit through the motor and drives the operating mechanism in a manner well understood including the film sprocket 1. The governor mechanism 4 is thus set in motion and the weighted arms flying outwardly effect movement of the frame 10 and closes the circuit by bringing the contacts 6 and 7 into engagement. When this takes place the starting circuit is broken and the running circuit closed by throwing the switch to bring the blades 21 and 22 into engagement with the respective contacts 12 and 15. Should the film break, the sprocket 1 will cease to run and the governor mechanism 4, coming to rest, breaks the running circuit by disengaging the contacts 6 and 7, as will be readily understood. This action is wholly automatic and prevents feeding of the film when the latter breaks.

What I claim is:

An automatic stop mechanism for motion

picture machines comprising a film sprocket, an electric motor, starting and running circuits including said motor, a double throw switch common to both circuits, a governor mechanism deriving motion from the film sprocket, and a circuit closer in the running circuit and controlled by the governor mechanism, whereby to break the running circuit when the film sprocket ceases to rotate from any cause.

In testimnoy whereof I affix my signature in presence of two witnesses.

MAX W. PAULEY.

Witnesses:

FRANK J. ADAMS,

HERBERT HEIN.