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SIGNAL OR ALARM DEVICE FOR PROJECTING MACHINES

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Fig. 1.

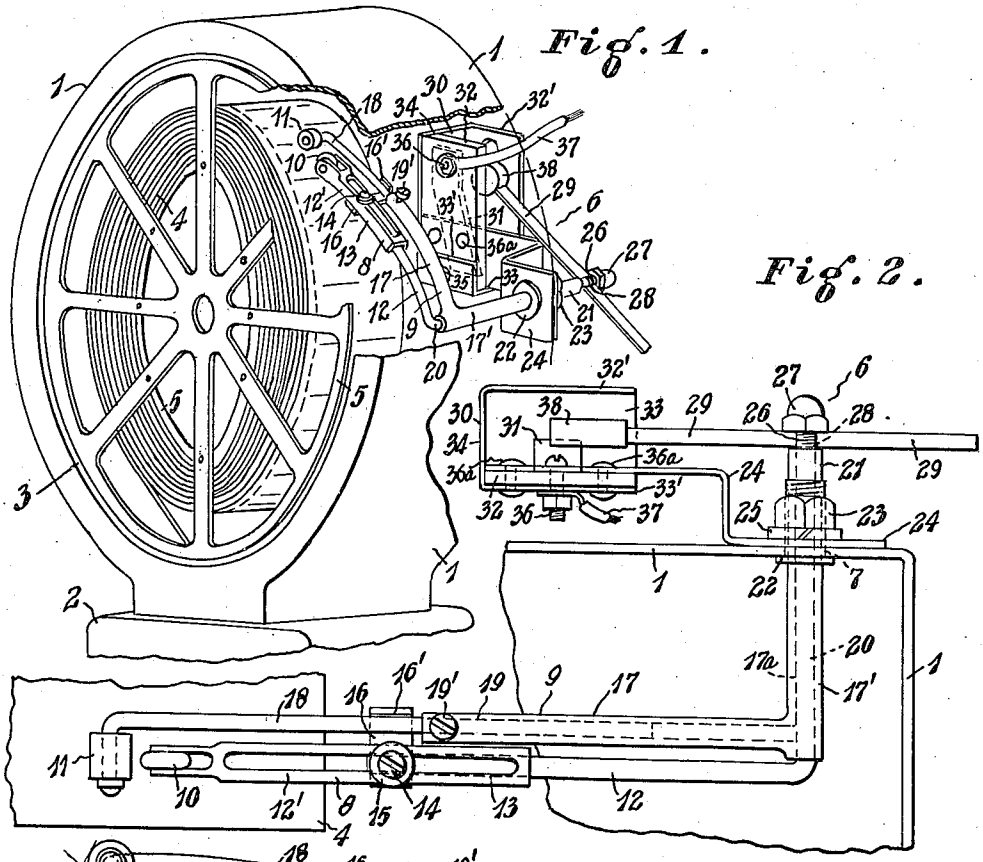
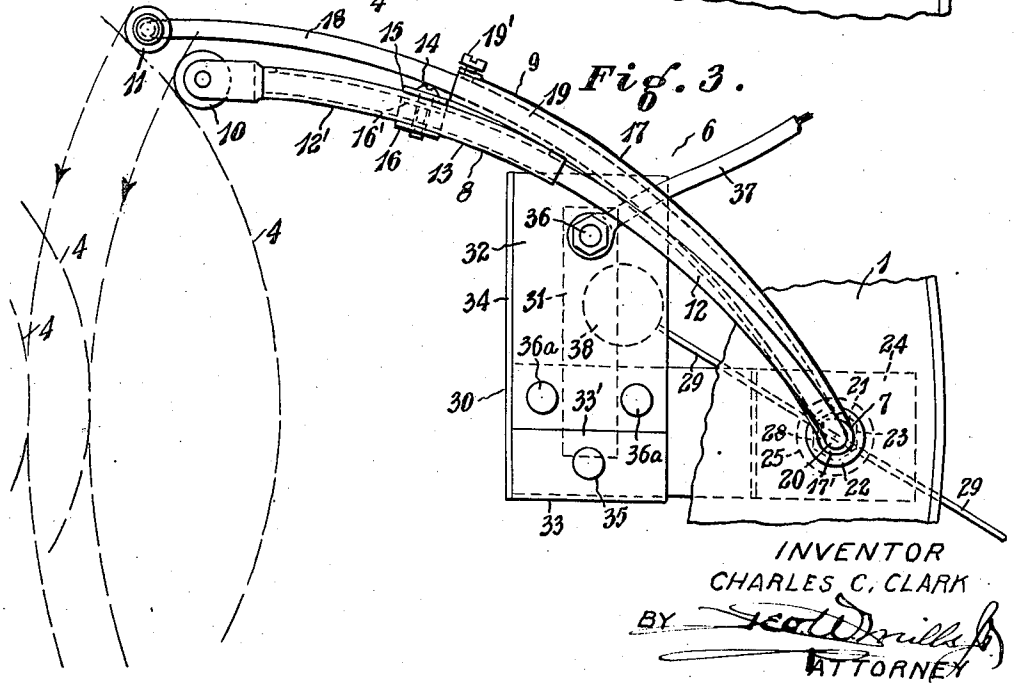


Fig. 2.

Fig. 3.



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SIGNAL OR ALARM DEVICE FOR PROJECTING MACHINES

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5 Claims. (Cl. 177—311)

This invention relates to a signal or alarm device for ready attachment to a picture projecting machine for indicating to the operator when the film is nearly unwound and also when it is about completely unwound from the film reel so that there may be no oversight and interruption in the continuity of the subject matter being shown when there is a change of films.

A projection booth is ordinarily equipped with two projectors to be run alternately in order to avoid interruptions for change of films. A film contains the "start motor" and "change over" cues printed thereon, the former being about twelve feet and the other being about two feet from the end of the film. Signals or alarms are desirous to avoid having the cues pass by unnoticed or not being timely observed by the operator.

Heretofore the practice has been to provide a signal or alarm device attached to the magazine and cooperating with the reel for giving a signal to the operator when a film is nearly unwound or is nearing completion. However, the alarm is merely a temporary one, such as ringing a bell; and, thus, if the operator is not near the projector he may fail to hear the alarm. Moreover, an alarm or signal which makes a loud noise is objectionable inasmuch as it can be heard by those watching the showing of the picture, thereby distracting attention.

The aim of the present invention is to provide an alarm or signal which is given for a substantial period of time and is inaudible, or substantially so, and one which also gives a warning alarm or signal at a predetermined time interval before a final signal or alarm is given. The preliminary or warning alarm preferably continues at least until the final alarm is given so that the operator may be alert to a change over the other projector. More specifically, there is provided a combination signal consisting of an electric light which when turned on is accompanied by a slight clicking sound that is given at a predetermined time of one minute or more before the end of the film, and another alarm device which gives a final clicking sound five to eight seconds before the actual change over from one projection machine to another. The electric light continues on through the change over until the last used projection machine has been retreaded with another film and made ready for the continuation of the feature subject.

Generally described, the invention comprises a device readily suitable for attachment to a magazine and provided with a plurality of relatively movable arms cooperating with the periphery of the face of the film roll to be independently released by the film at progressively timed intervals as the film is unwound to certain degrees nearing the end of the roll. The arm first to be released by the film roll gives a temporary or warning signal to put the operator on the alert for a final alarm or signal which is given when the other arm is at a predetermined later interval released by the film roll.

For a better understanding of the invention, reference may be made to the accompanying drawing, in which

Fig. 1 is a perspective view of a film magazine, with a reel therein, of a conventional picture projection machine with an alarm or signal device embodying the invention attached thereto;

Fig. 2 is an enlarged top plan view of the device with parts of the magazine and film roll broken away; and

Fig. 3 is a view in side elevation of the device looking in the direction of the arrow in Fig. 2.

Referring specifically to the drawing, in which like numerals are used to designate like parts, numeral 1 is a magazine of a conventional picture projecting machine 2 provided on one side with an opening 3 through which a film roll 4 on the reel 5 may be readily inserted and removed. The opening is covered by a lid or door (not shown) fitting therein.

At a convenient point on the magazine the alarm or signal device, generally described as 6, may be attached by drilling a hole 7 through the closed wall of the magazine, whereby the device may be secured in position with the ends of arms 8 and 9 disposed to ride upon the upper portion of the periphery of the film roll. To avoid scratching of the film surface, the ends of arms 8 and 9 are provided with respective rolls 10 and 11 mounted thereon for rolling contact with the film. Arm 8 is made in sections 12 and 12' telescoping together at joint 13. A screw 14 projects through the end of section 12 and engages washers 15 and 16 disposed on opposite sides of the section 12' to be clamped against the section 12' by tightening the screw. A portion 16' is projected from the washer 16 beneath arm 9, thereby permitting the arm 8 to be released independently of arm 9 but both to be returned as a unit to operative position upon the film roll.

Arm 9 is composed of sections 17 and 18 telescoped together at joint 19. A screw 19' is fitted in the wall of section 17 adjacent the telescoping socket therein to impinge against the end of section 18 which is inserted within the socket. The

adjustable sections of arms 8 and 9 readily permit lengthening and shortening said arms to determine their release by the film rolls and also to regulate and determine the time intervals between the release of the different arms.

The extremity 20 of section 12 may conveniently be bent at right angles to provide support for a clamp for attaching the device to the magazine. The clamp comprises a hollow tube 21 journaled on 20 having a collar 22 on one end provided with screw threaded portions from the collar 22 nearly to the opposite end. A nut 23 cooperates with the screw threaded portion to clamp the arm of a bracket 24 against the wall of the magazine, said magazine wall being between the bracket arm 24 and the collar 22. A lock washer 25 may advantageously be provided between the nut 23 and the bracket arm 24. The end of extremity 20 is screw threaded at 26 to receive a cap nut 27. A slot 28 is also provided in the end of extremity 20 to receive arm 29 and cause it to be tightly secured in place between the cap nut 27 and the bottom of slot 28.

Section 17 is advantageously provided with an extremity 17' disposed at right angle and hollowed to provide a bore 17*a* whereby same may be pivotally connected to the extremity 20 of the other arm.

Bracket arm 24 is extended to support a holder device 30 for an electrical contact member 31. One wall 32, the one on which the contact member 31 is mounted, is of insulating material, such as fiberboard or the like. The rest of the support may be of metal such as sheet metal stamped in suitable form to cooperate with the wall 32 for enclosing the contact member. There is a wall 32' opposite to 32, an end wall 33, and a back wall 34. A portion 33' of the end wall 33 is bent to provide means for attaching wall 32 in place by screws or bolts 35. Bolt 36 holds the electrical clip in place on wall 32 and is extending therethrough for reception of the end of a conducting wire 37 leading to an electric light (not shown) which may be stationed at any desired place. Bolts 36*a* project through wall 32 and bracket arm 24.

Arm 29 is provided with a head 38 on the end opposite to that which is attached to extremity 20 and is positioned to come into engagement with the contact member 31, when arm 8 is dropped or released by the film roll, and completes the electrical circuit to light the lamp or actuate any suitable electrical signalling device.

The arm 8 is first released by the film roll to light the signal lamp just before the film roll is completed. When the film roll is completed or is about to be completed, arm 9 will then be released and drop upon the supporting portion 16', this causing a slight clicking sound which will warn the operator that the film roll has been completely shown and is to be replaced.

The device is attached to the magazine as above described with the ends of arms 8 and 9 riding upon the roll of film as same is being unwound from the reel. Arm 8 is of shorter length than arm 9, and will first be released when the film roll is unrolled sufficiently to be beyond its reach. It will drop and in turn cause the arm 29 to drop also and bring the part 38 in contact with the electrical contact for lighting the signal lamp or other electrical device. Dropping of the arm which turns on the light is accompanied by a slight clicking sound resulting from members striking together when coming in contact, and this gives an audible alarm to the operator. Dropping of the longer arm 9 at a later interval to strike against a member of the device also makes a slight clicking sound audible to the operator following the first warning alarm. The length of the arm is set in relation to film to drop at a desired time previous to the completion of the unrolling of the film roll. At a desired later time interval arm 9 will be released and will cause a slight click when dropped upon support 16'. Both arms may lift as a unit to operative position before a new film roll is inserted.

While the device has been shown in detail for the purpose of illustrating the invention, it will be understood that there may be various changes in construction without departing from the spirit of the invention.

I claim:

1. An alarm or signal device for film rolls comprising a plurality of extensible arms pivoted to a supporting means, means attached to one of the arms and projecting beneath and adapted to be struck by the other arm, an electrical contact member, and circuit making and breaking member carried by one of the arms to cooperate with the contact member.

2. In combination with the magazine of a picture projector, a film roll and a signal device comprising a plurality of arms associated with the face of the film roll for being independently and automatically released from association with the film roll to provide alarms at predetermined intervals near the completion of unwinding the film roll, the arm first released having an electrical contact portion serving as a switch for a lighting signal and the arm next released adapted to strike against a member to cause an audible signal.

3. A signal device comprising a plurality of arms of unequal lengths pivotally attached together by means on one arm having a hollow tube portion to journal an extension on the other arm to provide a pivotal connection, means for clamping the tube portion to support, and a signal device attached to each of the arms, said arms being provided with rollers disposed to contact the periphery of a supply roll and being independently and automatically released near the completion of unwinding the supply roll to give alarms at predetermined intervals.

4. A signal device comprising a plurality of arms of unequal lengths pivotally mounted upon a common axis and disposed to have free ends, each arm carrying a roller for providing rolling contact with the periphery of a supply roll at circumferentially spaced apart points, whereby said arms are automatically and independently released from contact with the roll at predetermined intervals near the completion of unwinding the roll, and means whereby said arms produce separate signals when so released from contact with the roll.

5. In combination with the magazine of a picture projector, a roll film and a signal device comprising a plurality of arms of unequal lengths in rolling contact with the face of the film roll, a common pivot for the arms, two alarm means, means whereby the arm of shorter length operates one alarm and the arm of longer length operates the other alarm when the roll is unwound to near completion.

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