A. F. HETHERINGTON.

FILM REVERSING DEVICE.

APPLICATION FILED OCT. 8, 1913.

1,174,499. Patented Mar. 7, 1916.

Fig. 1.

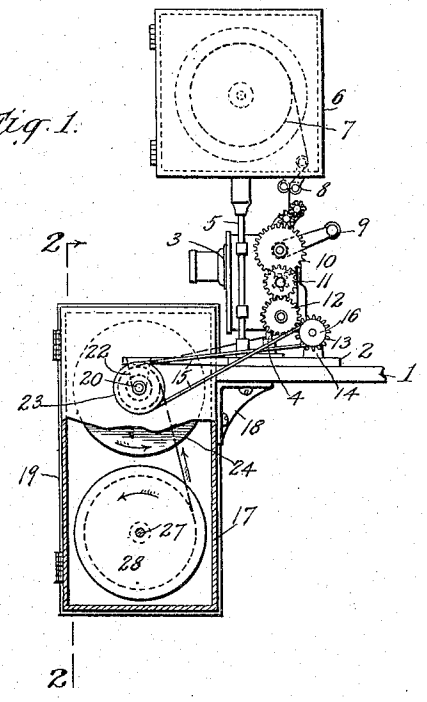
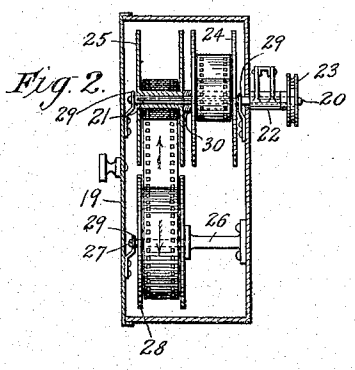


Fig. 2.



Witnesses:

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FILM-REVERSING DEVICE.

1,174,499. Specification of Letters Patent. Patented Mar. 7, 1916.

Application filed October 8, 1913. Serial No. 794,119.

To all whom it may concern:

Be it known that I, ARTHUR F. HETHERINGTON, a citizen of the United States, residing at Franklin township, county of Somerset, and State of New Jersey, have invented certain new and useful Improvements in Film-Reversing Devices, fully described and represented in the following specification and the accompanying drawing, forming a part of the same.

This invention relates to certain improvements in film reversing devices, and especially to film reversing devices for the films used in exhibiting motion or moving pictures.

In exhibiting the moving picture film, the film to be exhibited is drawn from one reel or spool through the machine and wound, as it comes through the machine, on a second reel or spool. To again exhibit this film it is necessary that the film be reversed, that is, unreeled or unwound from the spool onto another reel, so that it can be again fed through the machine.

It is the especial object of the present invention to provide a construction by the use of which an exhibited film may be reversed at the same time that another film is being exhibited, the construction being of such character that its use does not necessitate any changes or redesigning in the projecting apparatus employed, and so that the improvement may be readily added to machines already in use, as well as incorporated in new machines.

It is a further object of the invention to produce a device for the purpose contemplated which shall be simple, cheap to construct, durable, and which can be operated with a minimum of hand labor.

One embodiment of the invention is shown in the accompanying drawing, in which—

Figure 1 is a side view partly in section of so much of a projecting machine as is necessary for an understanding of the invention, and Fig. 2 is a vertical section on line 2—2 of Fig. 1.

Referring now to the drawings, the lens portion of a projection machine of usual type is shown, the lamp part being omitted as such part is not necessary for an understanding of the invention. As is usual in this class of apparatus, the machine is supported on a table 1 on which is a base 2, the lens portion 3 of the machine being supported on this base through suitable standards or legs 4, 5, or in any other convenient or desired manner. As is customary in this class of machines, there is provided a reel box 6 of suitable fireproof construction, in which is rotatably mounted the reel 7 which carries the film to be exhibited, this film box being mounted in any suitable manner, as on an extension of the support or leg 5. The film is drawn from this reel box in the usual manner between guide rollers 8 by and through the feeding and forwarding mechanism of the machine, this mechanism being operated in the construction shown by means of a hand crank 9 and a train of gears 10, 11 and 12. After leaving the machine, the film is directed to a receiving spool which is driven in any suitable manner from the film-forwarding devices, as by pinion 13 mounted on a bracket 14 supported on the base 2 and driven from gear 12. This pinion drives a receiving spool, hereinafter referred to, by means of a belt 15 running over a pulley 16 on the stud on which the gear 13 is mounted.

In accordance with the invention means will be provided whereby an exhibited film may be reversed at the same time that a film is being exhibited. These means, furthermore, will be of such character that they can be readily added to a machine in use without changing such machine, and which may be incorporated in a new machine when built without altering the design of the machine. These means preferably include a receiving box or casing having therein a receiving reel spindle which is of a sufficient length to support two reels arranged side by side, this spindle being a driven spindle, and a second spindle of sufficient dimensions to hold one reel or spool and rotatably supporting the spool, the driven spindle in the reel receiving box being driven by the same belt and pulley which is now employed in the type of machine referred to for driving the receiving reel.

In the particular construction selected to illustrate the invention there is provided a receiving casing or box 17 of a suitable fireproof construction which is or may be mounted on a bracket 18 secured to the underside of the table 1 before referred to, and

so as to be closely adjacent the film-forwarding means. This box is provided with a hinged door 19 of any suitable construction to provide access to the interior of the box. In this box there is located, in accordance with the invention, a reel-receiving spindle 20 provided with a key or feather 21, this spindle being mounted at one end in a hub 22 on the outside of the box and carrying at its end outside the box a pulley 23. This receiving spindle is of sufficient dimensions lengthwise to provide accommodation for two reels marked 24, 25, one of these reels, as 24, receiving the film strip as it comes from the machine after being exhibited. Suitably mounted in a bracket 26 is an idle spindle 27 capacitated to receive a reel or spool 28. The reels are held in position and the outer ends of the spindles supported by spring catches or clamps 29, and there is or may be provided a spacer 30 between the two reels on the long spindle 20.

The operation of the improved reversing attachment or device is as follows: Assuming a film roll to have been exhibited, the film is wound on the spool occupying the position of spool 24 in the box. The box is then opened and the spool with the exhibited film thereon is removed and a new empty spool is put in the position first occupied by spool marked 24, and the new film which is to be exhibited is secured to this spool so as to be received thereby when the machine is again started up. Empty spool 25 is then placed on the spindle 20, the spacer 30 being first interposed between it and spool 24, if desired, and the spindles locked in position with spring clamps 29. The filled spool which is to be reversed is then turned around and placed on the idle spindle 27, and its free end secured to spool 25. The machine then being started, the film on spool 28 is rewound on spool 25 in reversed position so as to be again ready for exhibiting, at the same time spool 24 is receiving the film being exhibited.

It will be seen that a very simple, and at the same time effective, device for reversing film has been provided, one which takes up but little additional space in the machine, and one which can be attached to an old machine or readily built into a new machine without in any way altering the design or construction thereof.

It will be understood that minor changes and variations may be made in the particular construction of the box and the particular position of the receiving spindles therein, and that such changes may be made without departing from the invention.

What I claim is:—

1. In a film reversing device, the combination with film-forwarding means, of a single stationary compartment located adjacent the feeding means to which the film is forwarded, a receiving reel therein operated from the film-forwarding means, a second reel co-axial with said first reel in the compartment operated from the same source, and means for supporting an exhibited film in the compartment so that it may be wound in a reversed position on the second reel while a film is being wound on the receiving reel.

2. In a film reversing device, the combination with film-forwarding means, of a single stationary casing to which the film is forwarded, a spindle in the casing capacitated to hold two film spools positioned side by side and driven from the forwarding means, and a second spindle supported in the casing and adapted to rotatably hold a film spool.

3. In a film reversing device, the combination of a support, film forwarding devices mounted on the support, a casing mounted on the support closely adjacent the forwarding devices to which film is forwarded, a spindle in the casing driven from the forwarding devices, a second idle spindle on the casing adapted to hold a reel of exhibited film, a film receiving reel on the driven spindle, and a second reel thereon for receiving film from the reel on the idle spindle.

4. In a film reversing device, the combination with film forwarding means, of a casing located adjacent the film forwarding means, a rotatable spindle extending across the interior of the casing and passing through one wall thereof, means upon the spindle exterior of the casing for operating the same from the film forwarding means, a reel upon the spindle for receiving the forwarded film, and a wind-up reel upon said spindle, a second spindle secured to the wall of the casing adapted to hold a reel of exhibited film in line with the wind-up reel upon the rotatable spindle.

In testimony whereof, I have hereunto set my hand in the presence of two subscribing witnesses.

ARTHUR F. HETHERINGTON.

Witnesses:

EDWARD L. RYAN,

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."