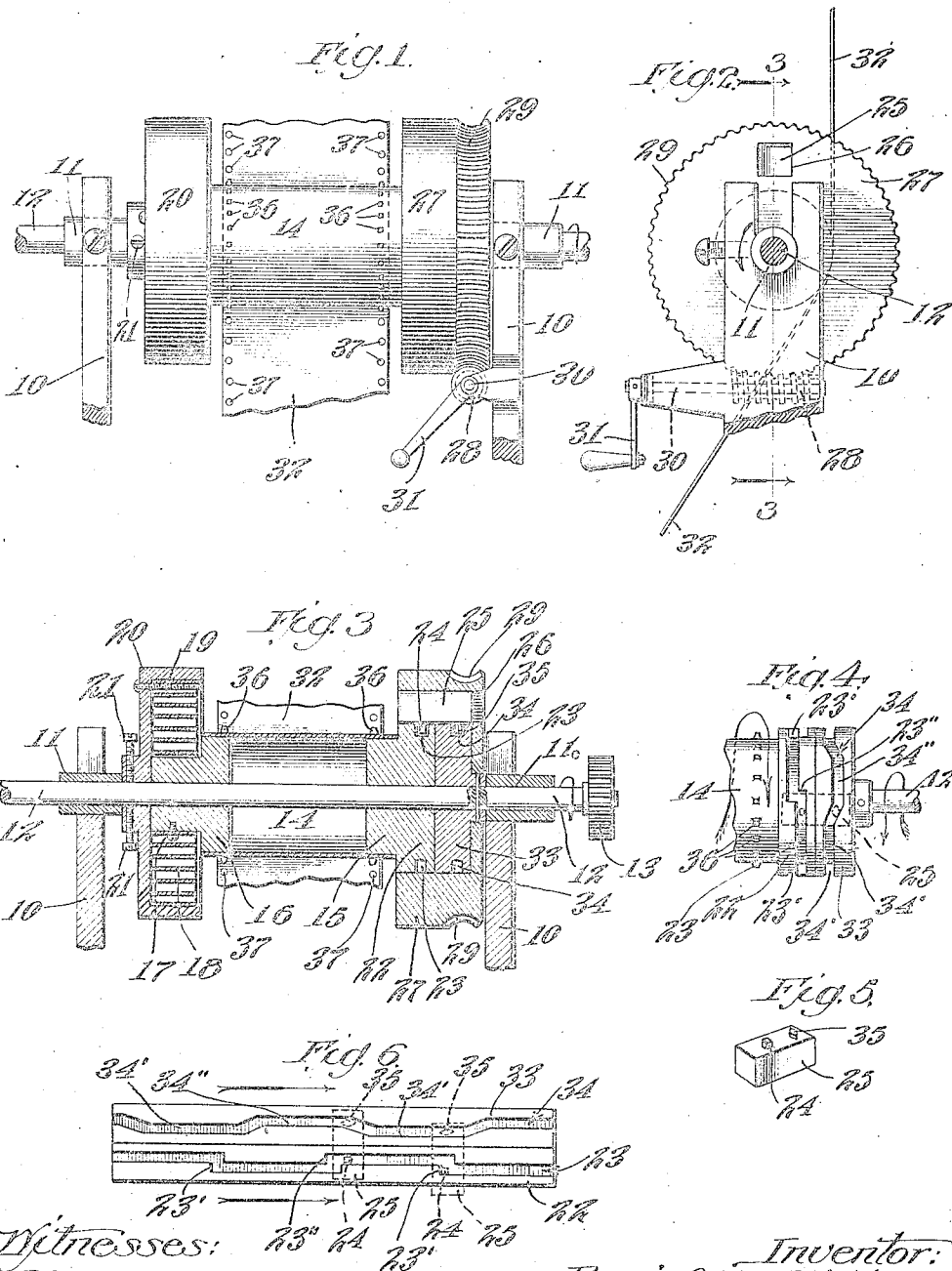


R. A. LA POINTE.
POWER TRANSMITTING APPARATUS.
APPLICATION FILED OCT. 4, 1907.

941,154.

Patented Nov. 23, 1909.



Witnesses:

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REMI A. LA POINTE, OF RIVERSIDE, CALIFORNIA.

POWER-TRANSMITTING APPARATUS.

941,154.

Specification of Letters Patent.

Patented Nov. 23, 1909.

Application filed October 4, 1907. Serial No. 395,814.

To all whom it may concern:

Be it known that I, REMI A. LA POINTE, a citizen of the United States, residing at Riverside, in the county of Riverside, State of California, have invented new and useful Improvements in Power-Transmitting Apparatus, of which the following is a specification.

My invention relates to an apparatus for actuating the film of a moving picture machine and the prime object thereof is to provide such an apparatus which will move the film instantly from its position to show one picture to its position in which the subsequent picture is exhibited, leaving each picture exhibited for the maximum of time and consuming a minimum of time in removing a picture and substituting the subsequent one.

A further object is to provide such an apparatus in a simple and efficient form free from liability to becoming disordered and which may be easily adjusted to place the film in its correct position.

I accomplish these objects by means of the device described herein and illustrated in the accompanying drawings, in which:—

Figure 1,—is a side elevation of my improved apparatus. Fig. 2,—is an end elevation of the same. Fig. 3,—is a longitudinal section taken on line 3—3 of Fig. 2. Fig. 4,—is a detail view of the cam and stop disks by means of which the action of the device is controlled. Fig. 5,—is a perspective detail of the cam follower. Fig. 6,—is a developed view of the peripheries of the cam and stop disks.

Referring to the drawings 10 designates a frame in which my device is mounted and which may constitute the frame of a moving picture machine or a sub-frame mounted thereon. Mounted in bearings 11 in frame 10 is a shaft 12 adapted to be rotated through the medium of gear 13 by any convenient source of power (not shown). A drum 14 is mounted on sleeves 15 and 16 which are loosely mounted on shaft 12, sleeve 16 being secured as at 17 to the inner end of a spiral spring 18 whose outer end is secured as at 19 to the inside of a drum 20 rigidly mounted by means of set screws 21 upon shaft 12. Thus it is manifest that upon the rotation of shaft 12 drum 14 will be rotated in the same direction through the medium of spring 18, in the absence of any intervening influences

Sleeve 15 carries a stop disk 22 which is provided with an irregular groove 23 in its periphery in which a lug 24 on cam follower 25 is adapted to operate. Cam follower 25 slides in guide way 26 cut in a drum 27 which is loosely mounted over disk 22 and is held from rotation by means of a worm gear 28 engaging with a worm wheel 29 on the periphery of the drum. Worm gear 28 is mounted on a shaft 30 which is provided with a crank handle 31 so that drum 27 may be rotatably adjusted in its position for the purpose of adjusting the position of film 32 as hereinafter described. Rigidly mounted on shaft 12 adjacent disk 22 is a cam disk 33 having an irregular cam groove 34 in its periphery. A diamond shaped lug 35 on cam follower 25 is adapted to operate in this groove.

In the operation of my device shaft 12 is rotated at a uniform speed through the medium of gear 13 and in the direction indicated by the arrows in the various figures. I will take an initial relative position of the stop disk 22, the cam disk 33 and cam follower 25 as shown in the right hand dotted position in Fig. 6. Assuming this initial position the cam disk will then be rotated in the direction indicated by the arrows, diamond shaped lug 35 passing through portion 34' of groove 34. As long as lug 35 is in portion 34' of groove 34 it will be manifest that disk 22 and drum 14 cannot be rotated in the direction indicated by the arrows, as lug 24 is in engagement with shoulder 23' in groove 23 of that disk. As soon as disk 33 has moved in the direction indicated a sufficient distance so that portion 34'' has moved lugs 35 and 24 upwardly in Fig. 6, or to the right in Figs. 3 and 4, lug 24 disengages from shoulder 23' and disk 22 is rotated by spiral spring 18, which has been forced out of equilibrium by the rotation of shaft 12 and the non-rotation of sleeve 16 during the period just described. This rotation of disk 22 will continue until shoulder 23'' strikes lug 24 and the further rotation of the disk is thereby stopped. In the meantime however, disk 33 has been rotating and in due course of time a second portion 34' of groove 34 is brought to bear upon lug 35, and, lug 24 being again forced out of engagement with shoulder 23'', disk 22 is allowed to rotate under the influence of spring 18 until a second shoulder 23' strikes lug 24.

The above described operation will be continued as long as a rotary motion is imparted to shaft 12. The velocity with which disk 22 passes from one position to the subsequent position is determined by the tension in spiral spring 18. This spring may be wound up to provide an initial tension which will enable the disk and drum 14 to move almost instantaneously from one position to the subsequent one. This instantaneous motion is transmitted to film 32 through sprocket teeth 36 on the periphery of drum 14 which teeth engage with perforations 37 in the edges of film 32. Film 32 is supplied in a roll (not shown) and passes by drum 14 as shown in Fig. 2 and thence to the projection apparatus by means of which its enlarged image is projected upon a screen or curtain. It will thus be manifest that the position in which the individual pictures on the film stop and the position in which the pictures are projected onto the screen will depend on the positions at which drum 14 stops. This latter will be seen to depend entirely upon the position of stop 24, which position may be adjusted by turning crank handle 31 and thus rotating drum 27.

From the foregoing description it will be observed that I have provided an apparatus which enables the almost instantaneous movement of a moving picture film from one position to the subsequent one and that the mechanism by which this is accomplished is simple in construction and uniform in operation so that it is not liable to become disordered.

It will further be noted that I have provided an apparatus which imparts the quick motion necessary to the film through the sprocket teeth with which the film engages and that therefore the film is not liable to become torn along its edges on account of the sudden acceleration being applied at a point.

Having described my invention what I claim as new and desire to secure by Letters Patent is:—

1. In a device of the class described, a

frame; a revoluble shaft mounted in said frame; a revoluble drum; resilient connecting means between said shaft and said drum; and means operated by said shaft to hold said drum from rotation during intermittent periods in the rotation of said shaft.

2. In a device of the class described, a frame; a shaft rotatably mounted in said frame; a sprocket drum loosely mounted on said shaft; spring connecting means between said shaft and said drum; and means operated by said shaft to hold said drum from rotation during intermittent periods in the rotation of said shaft.

3. In a device of the class described, a frame; a shaft journaled in said frame; a drum loosely mounted on said shaft; a spiral spring having one end secured to said shaft and the other end secured to said drum; stops on said drum; a lug slidably mounted in said frame and adapted to engage with said stops and thereby to prevent the rotation of said drum; and a cam on said shaft adapted to alternately move said lug into and out of engagement with said stops.

4. A device of the class described comprising a revoluble shaft; a rotating member; resilient connecting means between said shaft and said member; and cam actuated means operated by said shaft to intermittently stop said member from rotation.

5. A device of the class described comprising a frame; a shaft journaled in said frame; a drum loosely mounted on said shaft; a spring having one end secured to said shaft and the other end secured to said drum; stops on said drum; a lug movably mounted on said frame; and means operated by said shaft to move said lug into and out of engagement with said stops.

In witness that I claim the foregoing I have hereunto subscribed my name this 27th day of September, 1907.

REMI A. LA POINTE.

Witnesses:

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