

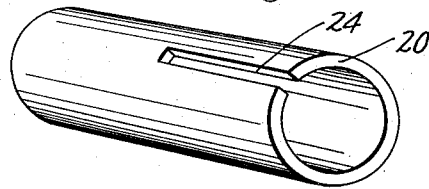
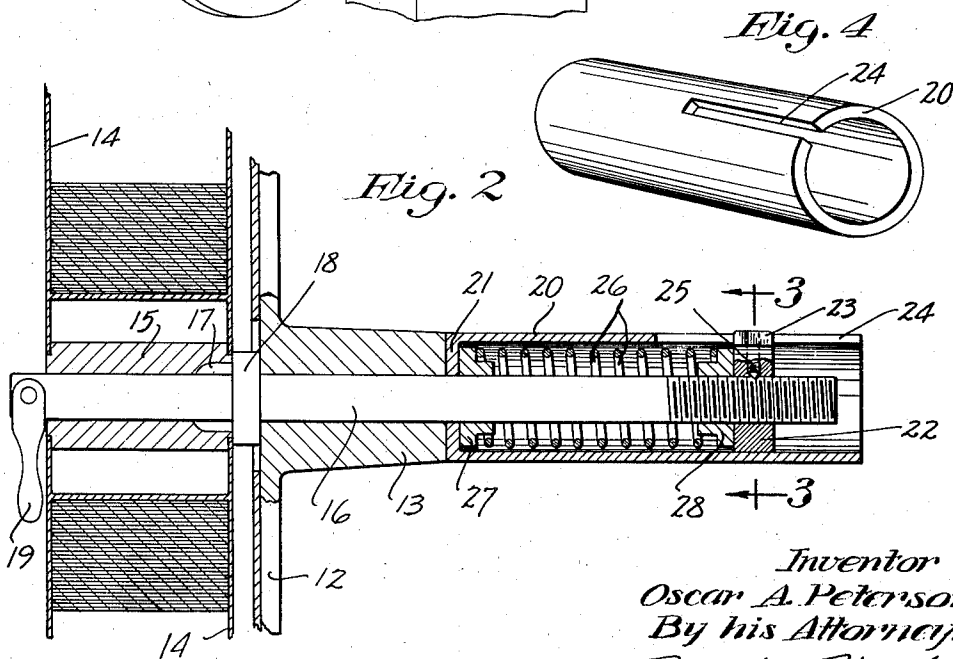
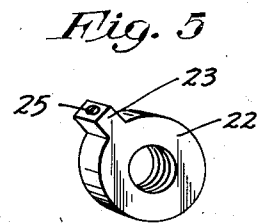
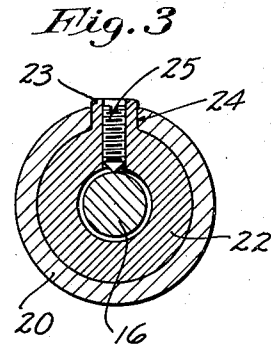
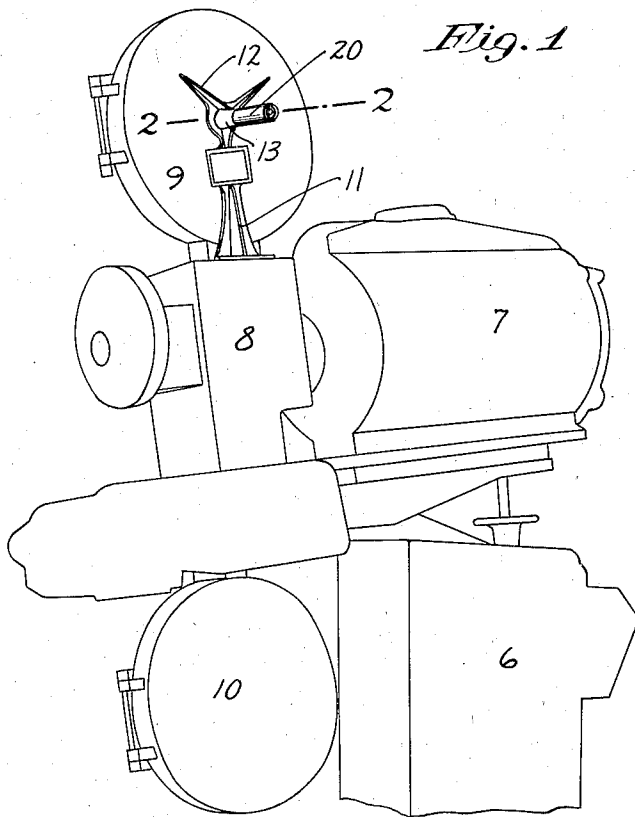
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FRICTIONAL RETARDING DEVICE FOR MOTION PICTURE REELS

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FRICTIONAL RETARDING DEVICE FOR
MOTION PICTURE REELS

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3 Claims. (Cl. 242-75)

My invention provides an extremely simple and highly improved frictional retarding device for motion picture reels and, generally stated, consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

Hitherto frictional retarding devices for reels of the above character have been provided; but in such arrangements there has been used a friction regulating tension device in the form of a spring connected to the reel in such a manner that the spring would be subjected to torque or twisting strains. In such hitherto used arrangements when there was a jerk or slack in the tension tending to unwind the film from its reel, there would be a backlash or reaction that was very frequently damaging to the film.

Frequently exchange reels will become bent or warped so that the film will unwind unevenly; and as to speed, will sometimes hesitate and then run out slack film followed by a jerk hard enough to tear the film. The chief objects of this invention are to remove the above defects in action and to accomplish this with extremely simple and reliable means.

In the accompanying drawing which illustrates the invention like characters indicate like parts throughout the several views.

Referring to the drawing:

Fig. 1 is a perspective outlining rather diagrammatically a motion picture projecting machine to which my invention is applied;

Fig. 2 is a section taken on the line 2-2 of Fig. 1, some parts being broken away and some parts removed;

Fig. 3 is a section taken on the line 3-3 of Fig. 2;

Fig. 4 is a view in perspective showing an important element of the improved frictional retarding device; and

Fig. 5 is a view in perspective showing a follower that works within and cooperates with the element of Fig. 4.

The particular projecting machine illustrated in the drawing may be assumed to be that known to the trade as the "Simplex," and which is manufactured by the International Projector Corporation of New York city. The construction and operation of this projector is well known and the parts thereof may be rather briefly noted as follows. The numeral 6 indicates the standard, the numeral 7 the lamp casing, the numeral 8 the projector box and the numerals 9 and 10 respectively the upper and lower reel-containing boxes or housings. For supporting the upper reel box 9, this machine is customarily provided with

a pedestal-like bracket 11 secured on the top of the projector box and formed with a head 12 and a hub 13. The head 12 in the usual manner is rigidly secured to the fixed plate or side of the upper reel box 9. These reel boxes, as are well known, are customarily provided with removable sides that are hingedly connected to the fixed side plates.

In operation the film will be unwound from the upper reel and wound on to the lower reel, under an operation that is well known. In the drawing, Fig. 2, only the upper reel is shown. This upper reel is shown as of the conventional type being formed with disc-like side plates 14 and a hub 15. As is customary, the hub of this reel is telescoped on to the end of the spindle 16 that is caused to rotate therewith by splines 17. The reel is held on the spindle for rotation therewith and against a collar 18 formed on the spindle. This collar 18, as will presently be noted, frictionally engages the inner end of the hub 13 and acts as a frictional brake shoe or element. The spindle is shown as provided with the customary reel-securing lever 19.

Mounted on an extended portion of the spindle 16 is a tubular member 20 which, at one end, has a disc-like head 21 that engages the outer end of hub 13 and acts as a frictional brake shoe or member. The extended end of the spindle 16 is threaded and has threaded engagement with a hub-like follower 22 that is adapted to slide or axially move within the tube. To prevent the follower 22 from rotating within the tube 20, it is shown as provided with a projecting key or lug 23 that slides freely in a longitudinal groove or slot 24 formed in said tube. By means of a set screw 25 follower 22 can be positively locked on the threaded end of the spindle 16.

Located within the tubular casing 20 and surrounding the spindle is a coiled spring 26 which, in this preferred arrangement, reacts against spring seats 27 and 28 seated respectively against the frictional shoe-acting disc 21 and the follower 22.

With this improved frictional retarding device the various objectional features and actions incident to the use of the older form of retarding device are eliminated. In my improved device the reel, the spindle, the frictional shoe-acting elements and the spring are connected for common rotation and no one of said elements is capable of rotary or oscillatory movement independently of the other. The spring is at no time subjected to any torque but can be adjusted to vary the tension of the frictional device so that

the reel will be put under just the right drag. The drag on the film unwound from the reel should be just sufficient to put a light pulling tension on the film. All tendency to backlash or rotary impulse which might set up slack are prevented. The film will not be overfed or underfed or subjected to breaking strains.

5 A preferred commercial form of the device has been illustrated in the drawing and described in detail, but it will, of course, be understood
10 that various alterations as to details of construction and arrangement of parts may be made all within the scope of the invention herein disclosed and claimed.

15 The improved frictional retarding device is adapted for quick application to machines of the "Simplex" type without any change in the original mechanism or machine, and by the addition of the slightly modified spindle can be
20 readily applied to any commercial projector.

What I claim is:

1. In a device of the kind described, a non-rotary bearing hub, a spindle extended through

and rotatively mounted in said hub, said spindle having a frictional shoe-acting collar engageable with the inner end of said hub, said spindle, beyond said collar, having means for holding a reel for rotation therewith, a tubular casing surrounding the other end of said spindle and having a frictional shoe-acting end engageable with the outer end of said hub, said casing having a longitudinal slot, a follower rigidly secured on said spindle and having a lug working in the slot of said sleeve and thereby held against rotation in respect to said spindle and casing, and a coiled spring in said casing compressed between said follower and outer shoe-acting element of said casing. 5 10 15

2. The structure defined in claim 1 in which said follower has threaded engagement with said spindle and is provided with means for locking the same against rotation on said spindle.

3. The structure defined in claim 1 in which said follower is capable of axial adjustments on said spindle to vary the tension of said spring. 20

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