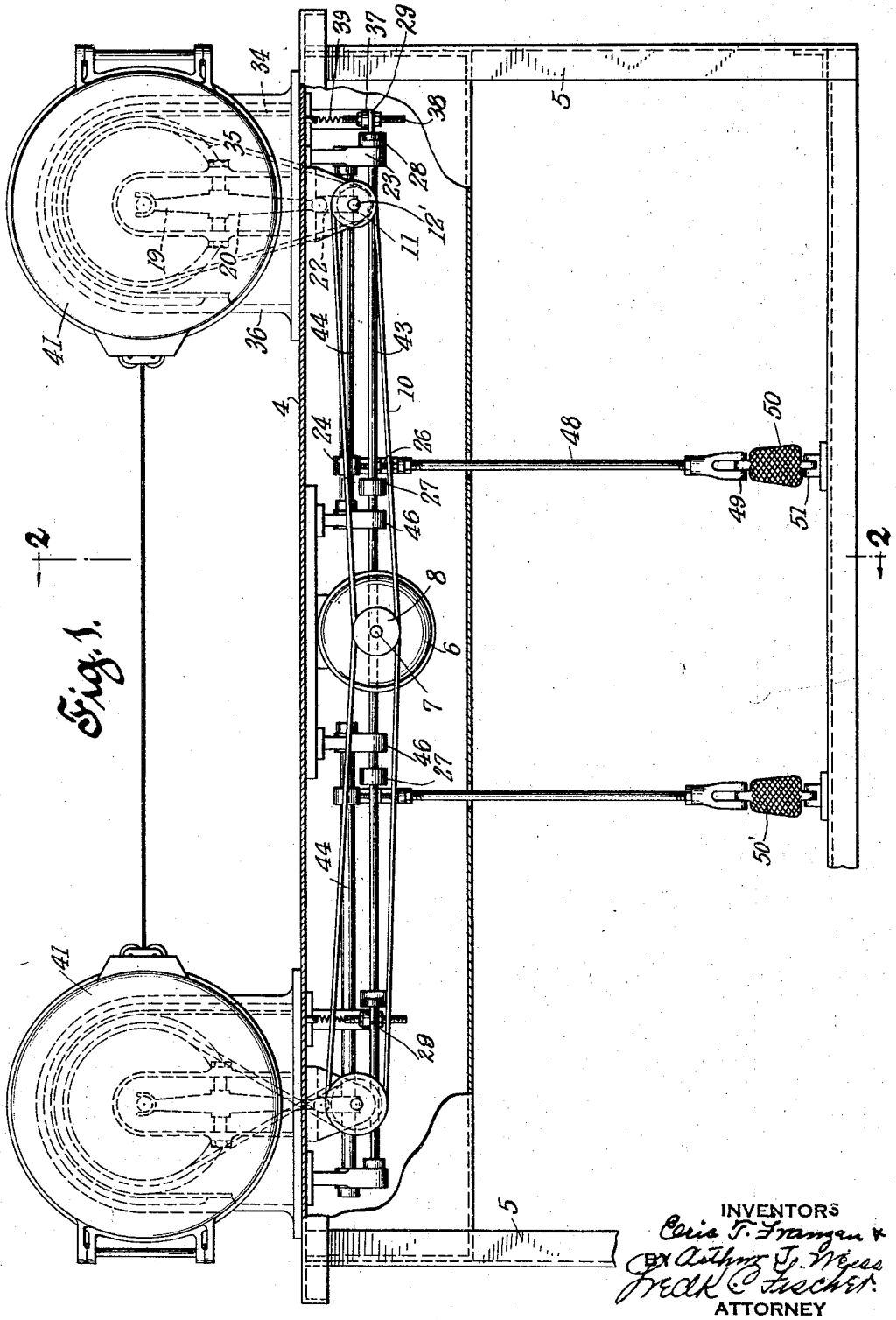
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REELING DEVICE FOR MOTION PICTURE FILMS

Filed Dec. 16, 1930 2 Sheets-Sheet 1



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Filed Dec. 16, 1930 2 Sheets-Sheet 2

Fig. 3.

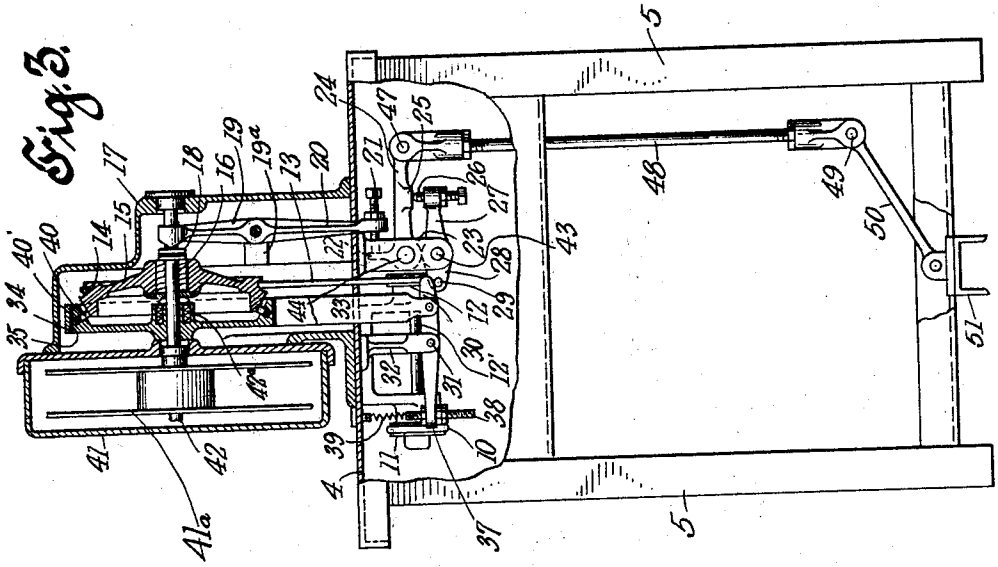
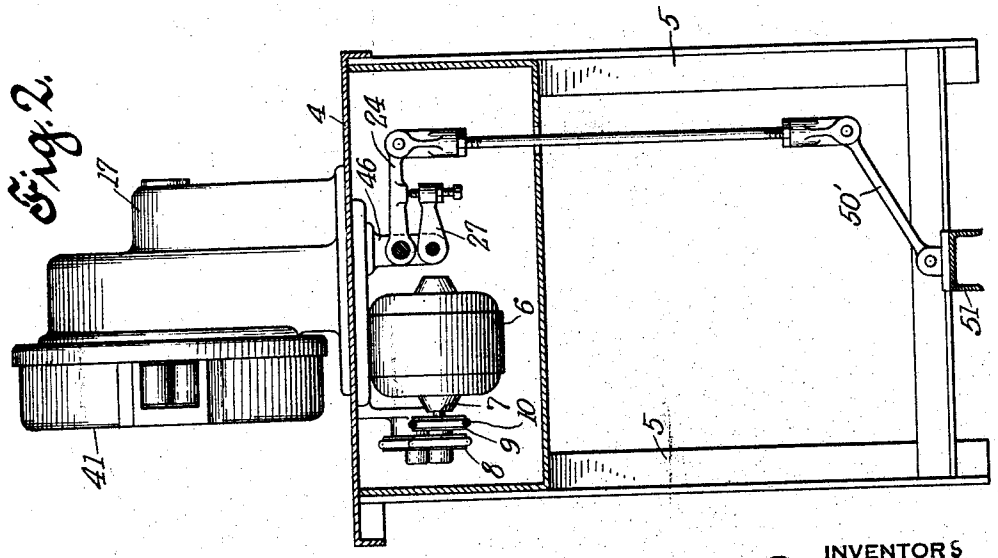


Fig. 2.



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UNITED STATES PATENT OFFICE

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REELING DEVICE FOR MOTION PICTURE FILMS

Application filed December 16, 1930. Serial No. 502,705.

This invention relates to reeling devices for motion picture films, and more particularly to means for controlling the speed of such devices.

It is necessary frequently, to unwind motion picture film from one reel and rewind it on another reel. Often, during the winding operation, the film is inspected for breaks, tears, etc., and it is desirable that means be provided to instantly stop the winding upon discovering a defect in the film. Films are usually inspected by automatic devices and by manual means.

Inspecting machines now in common use are operated at a constant speed, with the result that many times upon the detection of a tear or break, the portion of the film under consideration has been already wound upon a reel and it is necessary to unwind the film back to the break, which process obviously is tedious and time consuming, especially in view of the fact that many thousands of feet of film must be inspected daily.

It is therefore, an object of this invention to provide a reeling device having means by which the speed may be regulated.

A further object is the provision of novel clutching and breaking means by which the rotation of a reel may be instantly stopped, and the reel may be rotated in an opposite direction if so desired.

These and other advantageous objects, which will later appear, are accomplished by the simple and practical construction and arrangement of parts hereinafter described and exhibited in the accompanying drawings, forming part hereof, and in which:

Figure 1 represents an elevational view of the device.

Figure 2 represents a sectional view taken on the line 2—2 of Figure 1.

Figure 3 represents an end elevation, partially in section, viewed from the right of Figure 1.

Referring to the drawings, there is shown a table 4 on supports 5. Mounted on the underside of the table at the mid-section is a motor 6, having a shaft 7 to which is fixed pulleys 8 and 9, which serve, respectively, to drive the reels at each end of the table. Inasmuch as the reeling structure is the same at both ends of the table, the description is confined to the structure shown at the right end of the table as shown in Figure 1.

Pulley 9 is connected by means of a belt 10 to a pulley 11, fixed to a stub shaft 12′ to which is also fixed a pulley 12, over which passes a belt 13, the latter operating in a groove 14 in a male clutch member 15, rotatably mounted on shaft 16, the latter being journaled in the bearing on the walls of a casing 17, and having thereon, adjacent the clutch member 15, a thrust bearing 18 to receive the thrust of the arm 19 of a lever pivoted on a bracket 19*a* projecting from the casing.

The other arm 20 of the lever has threaded in its extremity a bolt 21, engaging the arm 22 of a bell crank rotatably mounted on shaft 44. The other arm 24 of the bell crank has an enlarged portion 25 engaging a vertically positioned bolt 26 threaded in the extremities of arm 27 of a rocker fixed to shaft 43, which also has fixed thereto another arm 28 having a laterally projecting pin 29 engageable with the underside of the arm 30 of a lever fulcrumed at 31, which is supported by bracket 32 fixed to the underside of the table.

Attached to arm 30 is a metal strap 33 connected to a brake band 34 passing over the outer surface of a female clutch member 35, and attached to a bracket 36 mounted on the upper side of the table.

The lever fulcrumed at 31 has another arm 37 in the extremity of which is threaded a bolt 38 attached to a tension spring 39, the latter being also attached to the underside of the table.

The clutch is of the cone type and the female member 35 is provided with a plurality of recesses in which are positioned friction plugs 40 normally urged outwardly by small compression springs 40′.

Attached to the casing 17 is a housing 41 for a reel 41*a*, which is keyed to a stub 42 forming a part of shaft 16, to which the female clutch member 35 is fixed. A spring 42*a* bears against the male and female clutch

members and tends to constantly urge them apart. The shafts 43 and 44 are journalled in brackets 46 depending from the underside of the table. Arm 24 is pivotally connected at 47 to a link 48, which in turn is pivotally connected at 49 to a foot pedal 50 pivoted on a base 51.

In operation, film is wound from the left reel, (see Figure 1), onto the right reel.

To wind in the direction indicated, the operator presses on foot pedal 50, which action moves brake band 34 upwardly against the action of spring 39 so that the female clutch member 35 is free to rotate, and then male clutch member 15 is moved into engagement with the female member 35 against the action of spring 42*a*.

The male member 15 is constantly rotated, and as soon as it engages the female member, the two rotate together to wind the film on the reel at the right of the table. It should be noted that the clutch members at the left of the table are disengaged and the reel associated therewith rotates freely. Should it be desired to reverse the direction of rotation, the pressure would be removed from pedal 50, and pedal 50′ would be depressed to engage the clutch members at the left of the table.

At times it is desirable to operate the reels at a slow speed, in which case a slight pressure on the pedal will instantly release the brakes, at the same time moving the male member 15 into engagement with the friction plugs 40.

It may be seen that such a clutch structure enables the speed to be adjusted to any degree by controlling the pressure on the pedals.

During the reeling operation, should a break in the film be indicated to the operator, pressure on the pedals is removed and the brakes instantly stop the rotation of the reels.

Now, by pressing slightly one or the other pedal, the film may be slowly moved backwards or forwards to place the film break in a convenient place for repairing.

The foregoing disclosure is to be regarded as descriptive and illustrative only, and not as restrictive or limitative of the invention, of which obviously an embodiment may be constructed including many modifications without departing from the general scope herein indicated and denoted in the appended claims.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. A device of the character described, a winding reel and an unwinding reel, each of said reels being connected with a female clutch member, normally disengaged constantly rotating male clutch members, brakes normally preventing rotation of the female members, and means to simultaneously release the brakes from both female clutch members and cause a male clutch member to engage a selected female clutch member.

2. In a device of the character described, a winding reel and an unwinding reel, brakes normally preventing rotation of the reels, and means to simultaneously release the brakes and independently drive either of said reels.

3. In a device of the character described, a winding reel and an unwinding reel, brakes normally preventing rotation of the reels, and means to simultaneously release the brakes and independently rotate either of said reels at varying speeds.

4. In a device of the character described a winding reel and unwinding reel, means for driving said reels, brakes normally preventing rotation of the reel, a common shaft associated with the brakes for each reel, independent shafts associated with driving means for each reel, and foot controlled means to simultaneously rotate the common brake shaft, and a selected independent shaft to release the brakes and independently drive either of said reels.

This specification signed this 18th day of July, 1931.

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