J. G. JONSON.

FILM CONTROLLED INDICATOR FOR MOVING PICTURE APPARATUS.

APPLICATION FILED DEC. 19, 1917.

1,272,671.

Patented July 16, 1918.

2 SHEETS—SHEET 1.

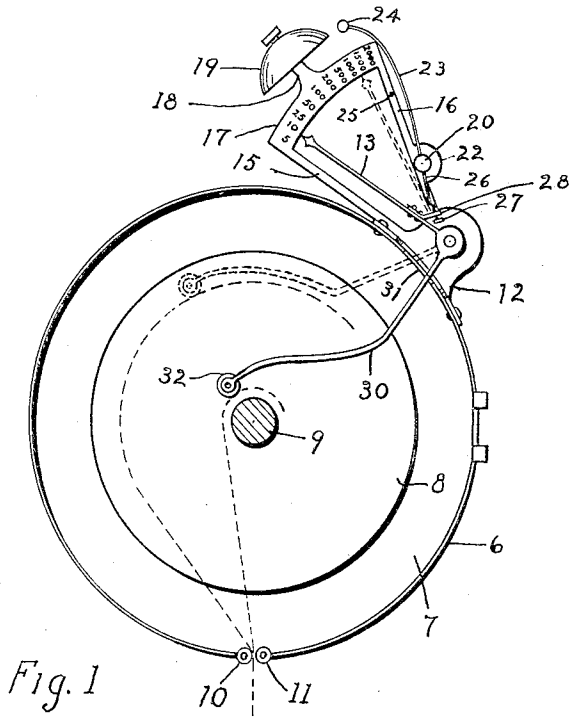


Fig. 1

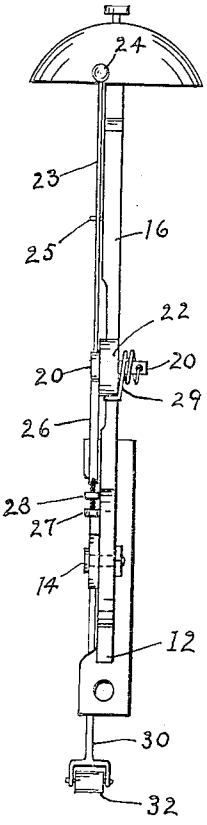


Fig. 2

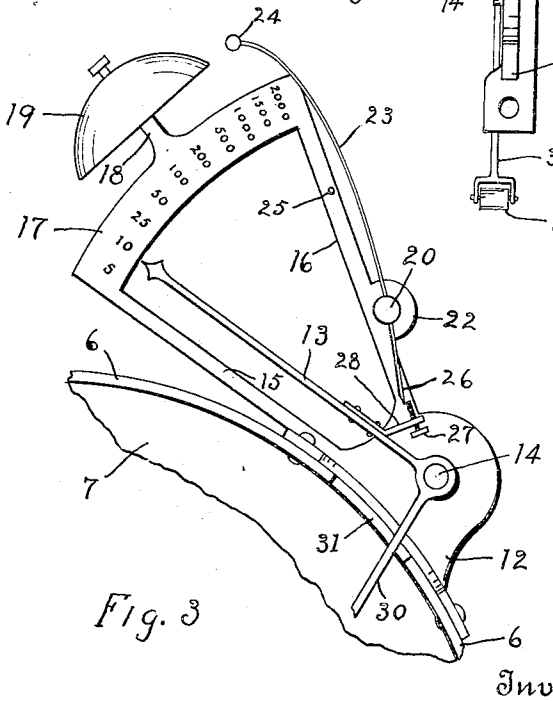


Fig. 3

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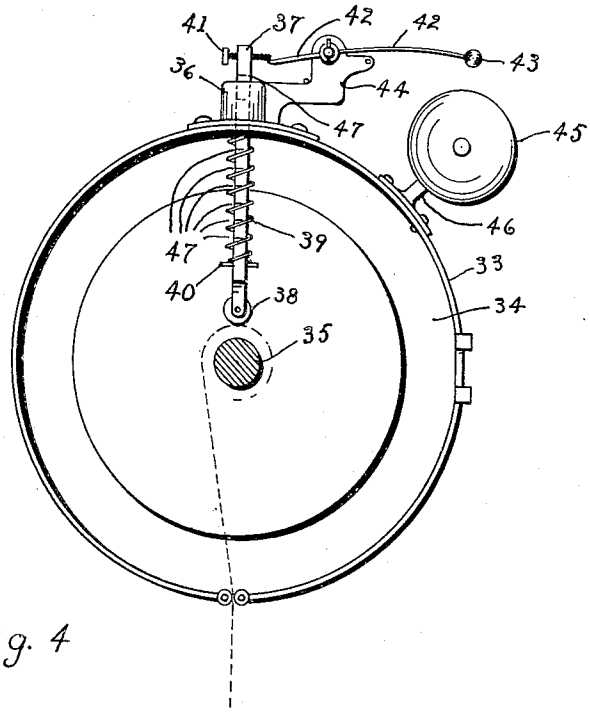


Fig. 4

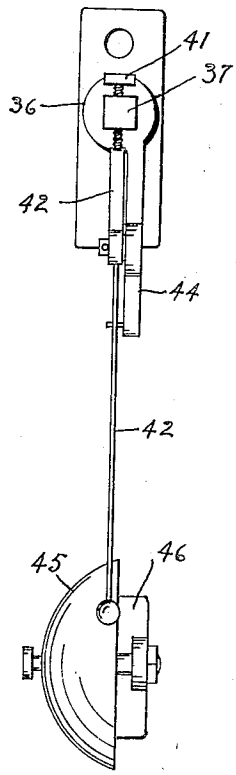


Fig. 5

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UNITED STATES PATENT OFFICE.

JOHN G. JONSON, OF SEATTLE, WASHINGTON.

FILM-CONTROLLED INDICATOR FOR MOVING-PICTURE APPARATUS.

1,272,671. Specification of Letters Patent. Patented July 16, 1918.

Application filed December 19, 1917. Serial No. 207,971.

To all whom it may concern:

Be it known that I, JOHN G. JONSON, citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Film-Controlled Indicators for Moving-Picture Apparatus, of which the following is a specification.

My invention relates to improvements in film controlled indicators for moving picture apparatus, and the object of my invention is to provide a combined indicator and signaling device which shall be adapted to be attached to the film magazine of moving picture apparatus there to operate to indicate the progress made in the unwinding of a film from the delivery reel contained in said magazine during the operation of said apparatus, and which shall embody adjustable means for producing an audible signal at the required instant of time to warn the operator that the unwinding of said film is about to be completed.

I accomplish this object by devices illustrated in the accompanying drawings, wherein,—

Figure 1 is a view in front elevation of a film reel disposed within a magazine of a moving picture apparatus whose door is removed and to which magazine is attached a combined indicator and signaling device embodying my invention;

Fig. 2 is a view in elevation of the right hand side of said indicator and signaling device when detached from said magazine;

Fig. 3 is an enlarged fragmentary view in front elevation of said magazine and said indicator and signaling device;

Fig. 4 is a view in front elevation of a film reel disposed within a magazine whose door is removed and to which magazine is attached a modified form of indicator and signaling device embodying my said invention; and

Fig. 5 is a plan view of said modified form of indicator and signaling device.

Referring to the drawings, throughout which like reference numerals indicate like parts, 6 designates the circular wall which is integral with the rearward wall 7 of a film magazine containing the delivery film reel of a moving picture apparatus of which reel only the rearward side plate 8 and a section of its hub 9 is shown.

As shown in Fig. 1, the lower portion of the circular wall 6 is provided with a transverse opening within which is disposed two rotatably mounted idler rollers 10 and 11 between which may travel a film to be guided thereby as said film is unwound from the hub 9 during the operation of the moving picture apparatus with which the magazine is associated.

Fastened to the outer side surface of the circular wall 6 is a bracket 12 on the front side of which is pivoted a pointer 13 by means of a pivot bolt 14.

Integral with the bracket 12 are two diverging arms 15 and 16 to whose outer ends are integrally attached a scale plate 17 of the form of a segment of an annular plate, which scale plate is disposed in a circle that is concentric with the pivot bolt 14.

Upon the face of the scale plate 17 is inscribed a scale of numbers as shown, which numbers may represent proportional lengths of a film in feet.

The outer edge portion of the scale plate 17 is provided with an integral stud 18 upon which is mounted a signal bell 19.

A pivot member 20 is provided with a shank of smaller diameter, which shank is disposed freely to project through and beyond a pivot bearing hole formed in a lug 22 that is integral with the arm 16, which pivot member 20 is thus rotatively movable.

Secured to the pivot member 20 is the shank 23 of a bell hammer 24, which shank 23 extends upwardly for such distance as will cause the bell hammer 24 to strike the bell 19 in response to a rotative movement of the pivot member 20.

A movement of the shank 23 toward the bell 19 is limited by a pin 25 against which the shank 23 may strike just before the bell hammer 24 reaches the bell 19, the elasticity of said shank 23 permitting the bell hammer 24, by its momentum, to continue its movement to strike the bell 19 and thereupon recede for a slight distance from the bell 19 in an obvious manner not to interfere with the vibrations of said bell 19.

Fastened to the pivot member 20 is an arm 26 which extends downwardly to a point where it may operatively engage with the end of a thumb screw 27 that is adjustably disposed in an angular bracket 28 that is fastened to the pointer 13, whereby a swinging movement of said pointer 13 will cause the end portion of the adjustable screw 27 to act on the arm 26 to move the shank 23 away from the limit pin 25 to

carry the bell hammer 24 away from the bell 19 (in opposition to the force of a coiled spring 29 that is associated with the pivoted member 20) until the end of said adjustable screw 27 disengages the end of the arm 26 in an obvious manner to permit the coiled spring 29 to cause the bell hammer 24 to strike the bell 19.

The screw 27 may be adjusted to disengage the end of the arm 26 at the instant the pointer 13 points to any desired one of the numbers on the scale plate 17.

Integral with the pointer 13 is an arm 30 that is disposed to extend into the magazine through a slotted opening 31 formed in the circular wall 6 at a point opposite the bracket 12, and the inner end of the arm 30 is provided with a roller 32 which is disposed to engage with the periphery of a roll of film, indicated by dotted lines in Fig. 1, that is disposed on the hub 9 of a reel, whereby the position of the pointer 13 will be governed by changes in the diameter of said roll of film as said film is unwound from its reel.

For instance, when the diameter of the roll of film is great as indicated by the larger circular dotted line in Fig. 1 then the arm 30 and pointer 13 will be disposed as indicated by dotted lines in Fig. 1 to show that there are about 1250 feet of film remaining unwound on the reel, but when the diameter of the roll of film is small as indicated by the smaller circular dotted line then the arm 30 and pointer 13 will be disposed as shown by full lines in Fig. 1 to indicate that there are only ten feet of film remaining unwound on the reel, at which positions the arm 26 may disengage the end of the screw 27 to permit the bell hammer 24 to strike the bell 19 to warn the operator that the film is almost unwound from the reel.

Obviously, the operator may ascertain the number of feet of film remaining unwound on the reel at any instant of time during the operation of the apparatus by observing the position of the pointer 13.

In Figs. 4 and 5 I have illustrated a modified form of my invention attached to the circular wall 33 that is integral with the rearward side wall 34 of a film magazine within which is rotatably disposed a film reel whose hub 35 is shown in cross-section.

Mounted on the outer side of the top portion of the circular wall 33 is a guiding bracket 36 which is provided with a hole of square cross-section that extends vertically downward therethrough and through said circular wall 33, within which hole is slidably disposed a scale rod 37 of square cross-section on whose lower end portion is mounted a rotatable roller 38 that engages with the outermost convolution of any roll of film that may be disposed on the hub 35 whereby said rod may move downwardly as said film is unwound from said hub 35.

In order to insure that the scale rod 37 shall move downwardly as the roll of film (represented by dotted lines in Fig. 4) decreases in diameter during the operation of the apparatus I have provided a helical compression spring 39 which is disposed to surround said scale rod 37 to extend between a pin 40 (which is driven through the lower portion of said scale rod 37) and the inner surface of the circular wall 33.

The upper end portion of the scale rod 37 projects higher than the top of the bracket 36 and through its upwardly projected portion extends an adjustable screw 41 which may be adjusted to cause its smaller end operatively to engage with one end of the shank 42 of a bell hammer 43, which shank 42 is pivotally mounted on a lug 44 that is integral with the bracket 36, as shown more clearly in Fig. 1, whereby a downward movement of the scale rod 37 will cause the screw 41 to engage with the top side of the adjacent end portion of the shank 42 to raise the bell hammer 43 until the said screw 41 slips off from said adjacent end of the shank 42 thus to permit the bell hammer 43 to strike a bell 45 that is fastened to a bracket 46 which is attached to the circular wall 33.

The scale rod 37 is inscribed with a scale of division marks 47 which may indicate the changing diameter of the roll of film on the hub 35 in an obvious manner.

The screw 41 may be adjusted to release the bell hammer 43 at the instant of time that the roll of film has descreased in diameter to any desired degree thus to warn the operator by an audible signal that only a certain length of film remains unwound on the hub 35 of the reel, and by observing the division marks 47 above the bracket 36, the operator may, at any time during the operation of the apparatus, determine the progress of the unwinding of the film from the hub 35 of the reel.

Obviously changes may be made in the forms, dimensions and arrangement of parts of my invention without departing from the spirit thereof.

What I claim is:

A film-controlled indicator of the class described, which embodies a film magazine within which is rotatably disposed a reel of film and which is provided with an opening through its surrounding wall; a bracket fastened to the outer surface of said surrounding wall in a position adjacent to said opening; a signal bell mounted on said magazine in a position distant from said opening; a bell hammer whose shank is pivotally attached to said bracket in a position to adapt said bell hammer to strike said bell in response to swinging movements of said shank; mechanism associated with said shank

of said bell hammer and with the outermost convolution of the film on said reel whereby said bell hammer may be actuated to strike said bell in response to a predetermined decrease in the diameter of the unwound portion of the film on said reel, there being a graduated indicator scale upon one of two relatively movable parts of said mechanism whereby may be indicated changes in the decreasing diameter of the roll of film on said reel during the process of unwinding said roll of film.

In witness whereof, I hereunto subscribe my name this 11th day of December A. D., 1917.

JOHN G. JONSON.