C. M. GOTTSCHAU.

APPARATUS FOR UNWINDING MOTION PICTURE FILMS.

APPLICATION FILED DEC 4, 1920. RENEWED MAY 24, 1922.

1,426,290.

Patented Aug. 15, 1922.

3 SHEETS—SHEET 1.

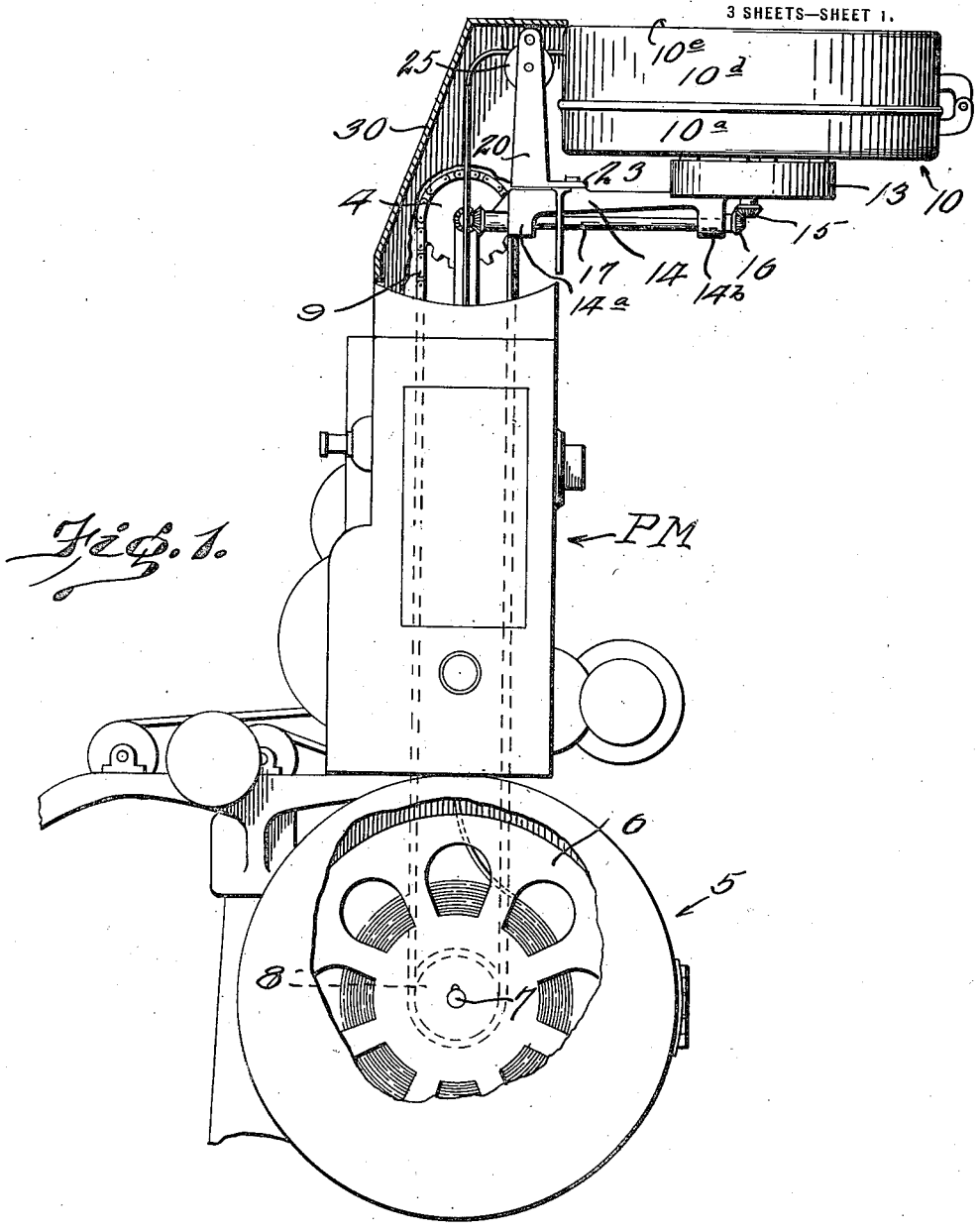


Fig. 1.

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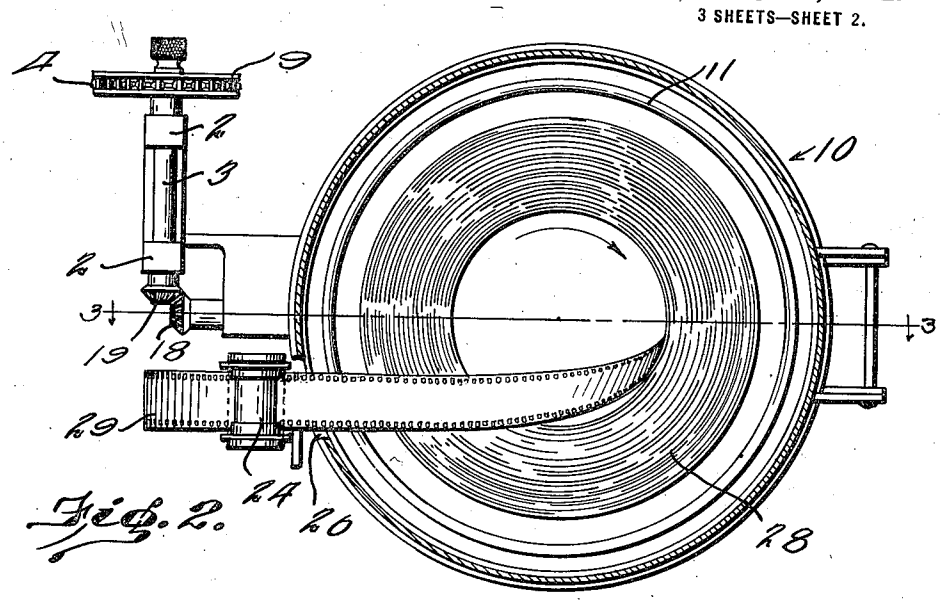


Fig. 2.

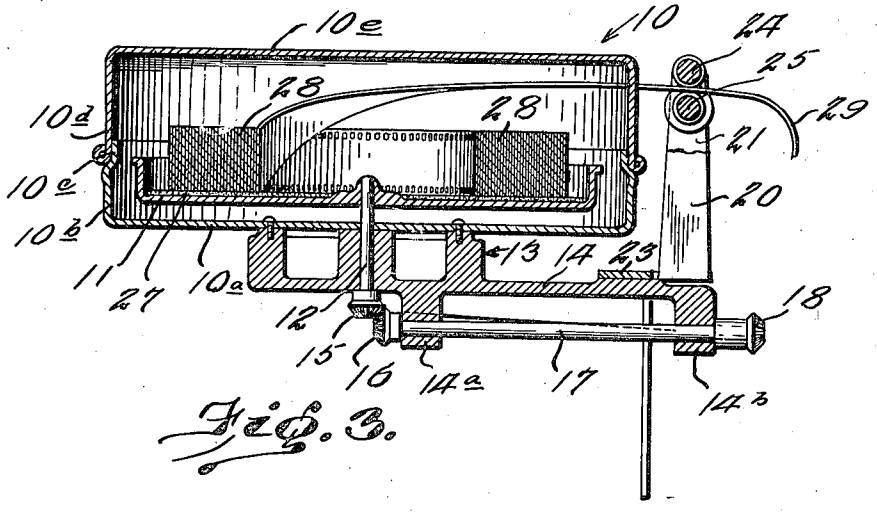


Fig. 3.

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3 SHEETS—SHEET 3.

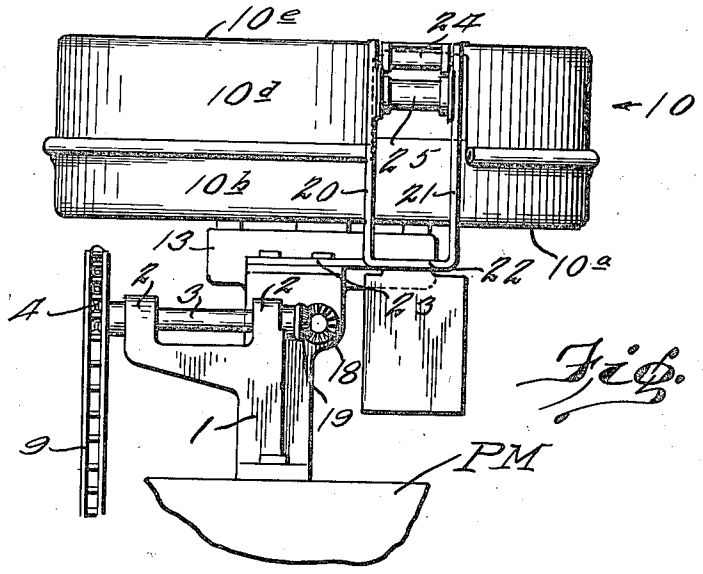


Fig. 4.

Fig. 5

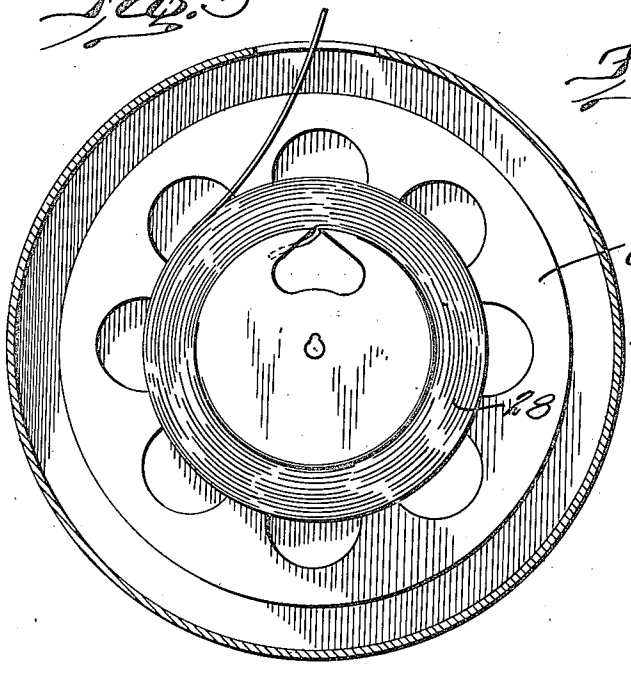
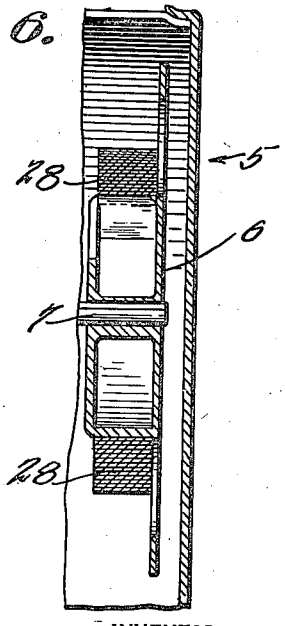


Fig. 6.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR UNWINDING MOTION-PICTURE FILMS.

1,426,290. Specification of Letters Patent. Patented Aug. 15, 1922.

Application filed December 4, 1920, Serial No. 428,251. Renewed May 24, 1922. Serial No. 563,367.

To all whom it may concern:

Be it known that I, CHRISTIAN M. GOTTSCHAU, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in an Apparatus for Unwinding Motion-Picture Films, of which the following is a specification.

This invention relates to motion picture machines and more particularly to film feeding devices therefor.

The object of the invention is to provide a simple and efficient device whereby the usual film can be reexhibited in the machine without first rewinding the same.

The invention contemplates among other features, the provision of an attachment of this character for use in connection with motion picture projection machines known as "The Simplex," and which may be applied to such machine without in any way changing the machine.

Another object is to provide such an attachment, the use of which provides for the removal of a film roll from the receiving reel after it has been exhibted and by placing it in this feeding device, provide for its being reexhibited without first being rewound, a transfer or change of position only of the roll being necessary prior to its advancement through the machine in the usual manner.

With these and other objects in view the invention consists in certain novel features of construction as hereinafter shown and described and specifically pointed out in the claim.

In the accompanying drawings:

Figure 1 represents a side elevation of a portion of a Simplex moving picture machine having this improved attachment applied and shown in side elevation, a part of the cover thereof being in section.

Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1.

Fig. 3 is a transverse vertical section taken on the line 3—3 of Fig. 2.

Fig. 4 is a front elevation of the attachment shown in operative position.

Fig. 5 is a horizontal section through the receiving reel holder and,

Fig. 6 is a detail sectional view thereof.

In the embodiment illustrated the device constituting this invention is mounted on a moving picture projecting machine PM of the Simplex type without any change to the latter, said device being supported on a bracket 1 secured to the top of the casing of said machine (see Fig. 4).

Two roll carriers 10 and 5 are mounted respectively above and below the projecting machine PM, the carrier 5 being in the form of a casing containing the film receiving reel 6 and is of usual construction in machines of this character, one side of the reel being open as shown in Fig. 6 to permit the film roll to be readily removed therefrom after it has been wound upon the reel.

The carrier 10 which constitutes a part of the invention is designed to hold and feed out the film to the projecting machine in a manner to be described. Each of the roll carriers includes a protective casing of fireproof material, preferably metal, in which the roll holders are located, the receiving roll carrier 5 being in the form of a rotatable reel 6 mounted in the protective casing, while the feeding roll holder is in the form of a rotatably mounted pan 11.

In order that both roll holders shall move in unison, positive transmission gearing is arranged between them and driven from a suitable source of power, preferably an electric motor (not shown).

The power transmission mechanism shown in the drawings comprises a power driven shaft 7 which extends through the casing of the holder 5 and on which the reel 6 is designed to be removably secured to turn therewith. This shaft 7 carries a sprocket gear 8 which is connected by a sprocket chain 9 with a sprocket gear 4 fixed to a shaft 3 for imparting rotary movement to the holder 11 through mechanism to be described. The shaft 3 is rotatably mounted in bearings 2 carried by the upper end of the bracket 1 and on the end of said shaft opposite that which carries the sprocket gear 4 is a small bevel gear or cog 19.

A spindle 12 is fixed to and depends from the center of the bottom of pan 11, said pan being spaced from its protective casing to

permit it to turn freely therein without friction. This spindle extends through the center of the stationary lower casing member 10^a and through a casting 13 carried by a laterally extending arm 14 of bracket 1. A bevel gear or cog 15 fixed to the lower end of the spindle 12 meshes with a similar gear 16 carried by one end of a horizontally disposed shaft 17, said shaft being mounted to rotate in bearings 14^a and 14^b depending from arm 14 (see Fig. 3). This shaft 17 has a bevel gear 18 at its other end which meshes with the cooperating cog 19 on shaft 3. It will thus be seen that motion is imparted from the power driven shaft 7 to the reel 6 mounted thereon and also through the sprockets 8 and 4 and chain 9 to the gearing above described whereby the film roll carrying pan 11 will be rotated at the same speed as reel 6 which is necessary owing to the fact that the film is taken from the inside of the roll in pan 11 and fed through the projecting machine and wound up on the reel 6, the opening or center circumference of the film roll 28 in the feeding pan 11 increases in size as the film is ejected from the pan and the roll on reel 6, being the receiving reel, increases in diameter correspondingly in size to the increase in size of the opening or center circumference of the film in the feeding pan.

Rising from the inner end of arm 14 are a pair of laterally spaced standards 20 and 21 shown connected at their lower end by an integral cross bar 22 which has a foot 23 extending rearwardly therefrom and bolted to arm 14. A pair of rollers 24 and 25 are mounted in the upper ends of the standards 20 and 21, the space between said rollers being opposite and adjacent a film outlet opening 26 in the flange 10^d of the casing top 10^e of the film carrier 10. The casing 10^a of the carrier 10 has an upstanding flange 10^b on its fixed lower member, the edge of said flange being inwardly offset as shown at 10^c to receive the beaded edge of the flange 10^b of the cover 10^e of said casing. This cover which may be of glass, is preferably hinged to the bottom of the casing as shown in Figs. 1 and 2 to prevent its accidental displacement, it being of course understood that opening of the casing is necessary to permit the insertion of a roll to be exhibited.

The film holder or pan 11 has a mat 27 of felt, rubber or other suitable material in the bottom thereof to support the film roll 28, the edges at one end of which rest thereon, said mat preventing the slipping of the roll relatively to the pan and the consequent injury to the edge of the film.

In the use of this apparatus the roll or film 28 which has been fed through the projecting machine PM is removed from the receiving reel 6 and inserted edgewise in the pan 11 as shown in Figs. 2 and 3. The inner end 29 of the film is then threaded through the opening 26 in the casing top 10^e and said top closed as shown in Fig. 3. This film end is then passed between the rollers 4 and 25 and down through the projecting machine PM and attached to the spindle of reel 6 which is placed on the shaft 7 in the casing of holder 5 and the machine is ready for use. When the roll 28 has all been exhibited it may be again removed from the carrier 5 and inserted in holder 10 and the exhibition repeated.

This attachment which is supported on the top of the projecting machine is preferably housed in a casing 30 to prevent the film, which is highly inflammable, from catching on fire, and also to protect it from dust and to prevent the operator being injured thereby.

This applies to all coverings surrounding film contemplated in invention and these coverings may be changed at anytime to conform to fire ordinances and underwriters' specifications. This machine also eliminates static electricity which often ignites highly inflammable film.

From the above description it will be obvious that this attachment while extremely simple and cheap to manufacture may be readily attached to the top of the moving picture projecting machine without in any way altering the latter and may be connected for operation by simply applying a sprocket gear 8 to the spindle of reel 6 which is also the power driven shaft and that the use of this attachment avoids the necessity of a film roll being rewound after it has been exhibited and before it can again be passed through the projecting machine.

The preferred embodiment of the invention is disclosed in the drawings and set forth in the specification, but it will be understood that any modifications within the scope of the claimed invention may be made in the construction without departing from the principal of the invention or sacrificing any of its advantages.

What is claimed is:

A film feeding attachment for Simplex motion picture machines comprising a bracket for mounting on the casing of the machine and having longitudinally spaced bearings, a shaft mounted in said bearings and projecting at opposite ends beyond said bearings and having a sprocket wheel on one end and a bevelled cog on the other, an arm extending laterally from said bracket and having depending longitudinally spaced bearings arranged in a plane at right angles to said first mentioned bearings, a shaft mounted in said bearings with bevelled cogs at its ends, one meshing with that of the first mentioned shaft, a feeding film casing carried by said bracket arm, a spindle extend-

ing through and rotating in the bottom of said casing and having a cog on its lower end meshing with one of the cogs on said second mentioned shaft, a roll holder carried by the inner end of said spindle within said casing, a film receiving roll holder, and a connection between said holder and said sprocket wheel to cause said holders to move in unison, and actuating means for said holders.

In testimony whereof, I affix my signature hereto.

CHRISTIAN M. GOTTSCHAU.