J. F. RENEY.

ATTACHMENT FOR MOVING PICTURE MACHINES.

APPLICATION FILED JUNE 25, 1913.

1,299,612.

Patented Apr. 8, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

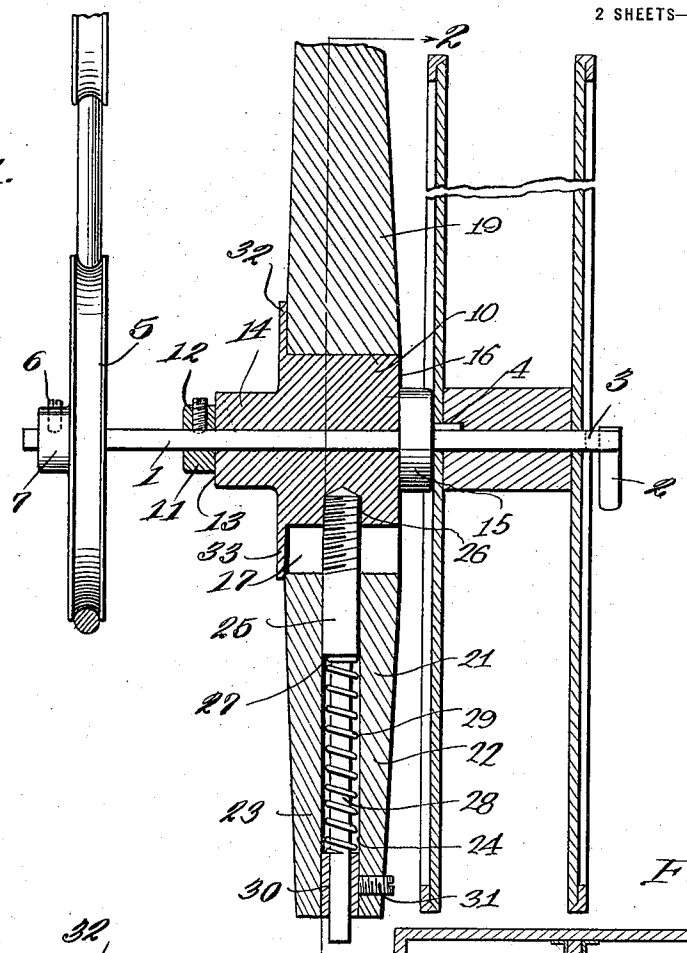


Fig. 5.

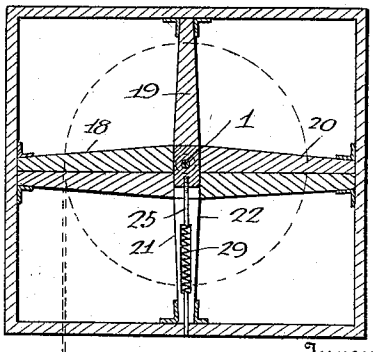
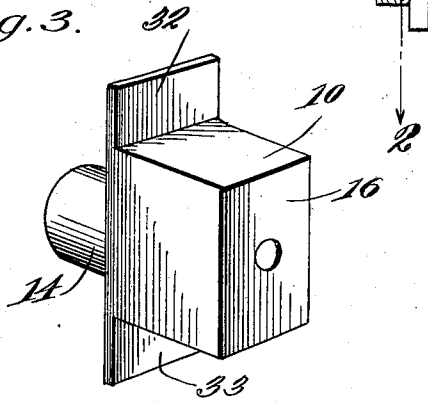


Fig. 3.



Witnesses

Wm. H. Mulligan.

Rose Meyer.

Inventor

Jules F. Reney,

By Richard Dewey

his Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

J. F. RENEY.

ATTACHMENT FOR MOVING PICTURE MACHINES.

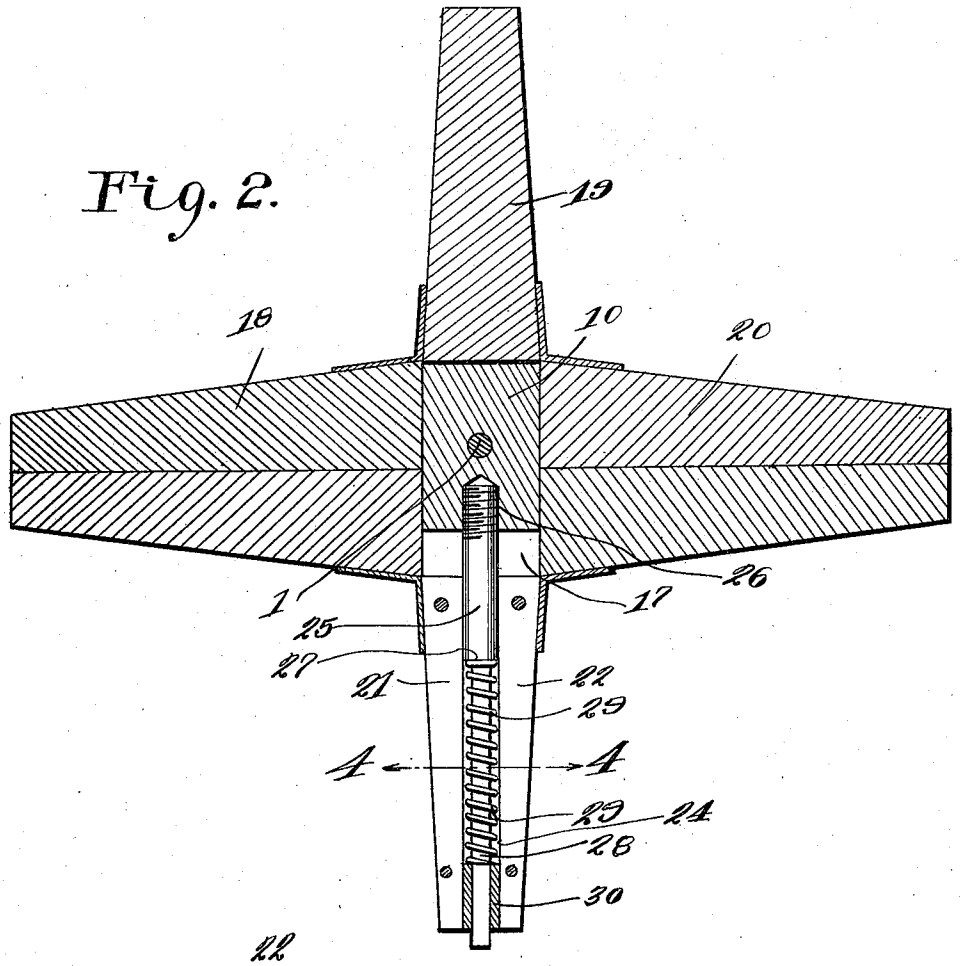
APPLICATION FILED JUNE 25, 1913.

1,299,612.

Patented Apr. 8, 1919.

2 SHEETS—SHEET 2.

Fig. 2.



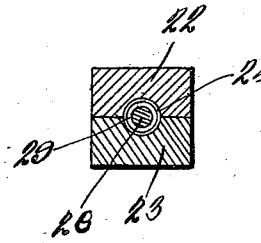


Fig. 4.

Inventor

Jules F. Reney,

Witnesses

Wm. H. Mulligan.

Robt Mayer.

By Richard Dewey

his Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JULES F. RENEY, OF BRANDON, MANITOBA, CANADA, ASSIGNOR TO BAIRD MOTION PICTURE MACHINE CO., OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

ATTACHMENT FOR MOVING-PICTURE MACHINES.

1,299,612. Specification of Letters Patent. Patented Apr. 8, 1919.

Application filed June 25, 1913. Serial No. 775,776.

To all whom it may concern:

Be it known that I, JULES F. RENEY, a citizen of the Republic of France, residing at Brandon, in the Province of Manitoba and Dominion of Canada, have invented certain new and useful Improvements in Attachments for Moving-Picture Machines, of which the following is a specification.

This invention relates to moving-picture machines and more particularly to improvements in the mechanism for rewinding the films upon the drums or reels.

The primary object of this invention resides in the provision of an attachment for moving-picture machines which automatically regulates the tension of the belt used, in propelling the drum, for rewinding a film upon the drum or reel.

It is an object of this invention to provide a means for relieving this excessive tension and which will cause the film to be tightly wound upon the drum or reel but without the tearing or destroying of the sprocket perforations in the film.

With the foregoing and other objects in view, this invention consists in such novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings, wherein like characters of reference designate like or corresponding parts throughout the several views, and in which,

Figure 1 is a sectional view through the bearing which supports the shaft upon which the drum or reel is mounted and shows the pulley over which the belt passes, in elevation;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a detail perspective view of a part of the tension relieving mechanism; and,

Fig. 4 is a cross-sectional view on the line 4—4 of Fig. 2.

Fig. 5 is a reduced sectional view of the spindle taken on the line 2—2 of Fig. 1 showing the spindle supported within a housing.

Referring more particularly to the drawings the numeral 1 designates the shaft which carries the drum or reel upon which a film is to be wound. The shaft 1 has an articulated dog 2 pivotally connected to the end 3 of the same. The dog 2 forms means for holding the drum upon the shaft 1 in that after the drum has been mounted upon the shaft, the dog is bent downward in a position which is shown in Fig. 1 of the drawings, preventing the drum from sliding off the shaft. The drum is caused to rotate with the shaft 1 by a key 4 which is formed upon the shaft as is clearly shown in Fig. 1 and engages a key seat (not shown) in the drum.

A pulley 5 is removably mounted upon the end of the shaft opposite to the end 3, by means of a set screw 6 which is inserted through a screw-threaded opening in the shoulder or hub 7 of the pulley 5 and engages the shaft. The pulley 5 has a concave outer bearing surface because round belts are used with most moving-picture machines, but it is to be understood that any type of pulley may be used.

The shaft 1 is rotatably journaled in a block 10 and has a collar 11 mounted thereupon and held in place by a set screw 12. The inner side of the collar 11 abuts the end 13 of the bearing member 14 which is formed integral with the block 10 and prevents lateral movement of the shaft. The collar 15 is mounted upon the shaft 1 and engages the side 16 of the block 10, forming a means for preventing the drum or reel from contacting with the side of the block.

The block 10 is slidably mounted in a rectangular opening 17 which is located at the intersection of the arms 18, 19, 20 and 21 of the supporting structure. The arms 18, 19 and 20 of the supporting structure may be shaped so as to be used in connection with any of the many types of moving-picture machines now in use.

The arm 21 of the supporting frame is composed of sections 22 and 23, each of

which is provided with a semicircular recess extending longitudinally therethrough. When the two sections 22 and 23 are properly placed together the two semicircular recesses fit together forming a circular opening 24 which is centrally located in the arm 21. The circular opening 24 has a pin 25 slidably mounted therein. The upper end of the pin 25 is provided with external screw-threads which engage internal screw-threads formed upon a recess 26 which is formed in the lower side of the block 10.

The pin 25 has a shoulder formed thereupon and the portion 28 of the pin 25 which extends downwardly from the shoulder 27 is smaller in diameter than the upper end of the pin 25 and has a coil spring 29 wound thereabout. The upper end of the coil spring 29 abuts the shoulder 27 while the lower end of the same abuts the upper end of a sleeve 30 which is slidably mounted within the circular opening 24 and held in place by a set screw 31. The tension of the spring 29 may be regulated by the sliding or moving of the sleeve 30 within the circular opening 24.

The block 10 is slidably mounted within the rectangular opening 17 and has flanges 32 and 33 formed integral with one side thereof. The inner surfaces of the flanges 32 and 33 engage the sides of the arms 19 and 21 and form a guiding means for the sliding movement of the block 10 as well as forming a closure for the part of the opening 17 which is not filled by the body portion of the block 10.

When a drum or reel is mounted upon the end 3 of the shaft 1 for the rewinding of a film thereupon, the weight of the same being much less than when the film is wound upon the drum will not have any material effect upon the position of the block 10 within the opening 17 and consequently the belt which passes about the pulley 5 and will not cause an excessive strain upon the first part of the film which is being wound upon the drum as is the case in moving-picture machines now in use. As the film is wound upon the drum the combined weight of the drum and the film gradually forces the block 10 downwardly in the opening 17 against the tension of the spring 28 and tightens the belt, causing the same to apply a greater force to the pulley 5 and consequently the shaft 1 and the drum which is necessary for the efficient winding of the latter part of an especially long film.

When a drum which has had a film rewound therefrom is removed from the end 3 of the shaft 1, the coil spring 28 will immediately force the block 10 upwardly in the opening 17, whereby it will be in a position for the receiving of another drum.

In practical fields, certain minor features of construction, combination and arrangement of parts may necessitate alterations to which the patentee is entitled, provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:—

1. In a moving-picture machine; the combination with a shaft, a pulley removably mounted thereon, a drum mounted on said shaft, and a belt used for rewinding films upon said drum, of a resiliently and slidably mounted block controlled by the weight of the drum and the film being wound thereupon for automatically regulating the tension of the belt.

2. In a moving-picture machine; the combination with a shaft, a pulley removably mounted thereon, a drum mounted on said shaft, and a belt used for rewinding films upon said drum, of a slidably and resiliently mounted block having the shaft journaled therethrough and supported thereby and controlled by the weight of the drum and film being wound thereupon for automatically regulating the tension of the belt.

3. In a moving-picture machine; the combination with a shaft, a pulley removably mounted thereon, a drum mounted on the shaft, and a belt used for rewinding films upon said drum, of a slidably and resiliently mounted block having the shaft journaled therethrough and supported thereby and controlled by the weight of the drum and film being wound thereupon for automatically regulating the tension of the belt, and means for preventing lateral movement of said shaft within said block.

4. In a moving picture machine; the combination with, a shaft, a pulley and a belt used for rewinding films upon a drum, of a supporting structure, a block slidably mounted within an opening in said supporting structure, said shaft journaled through said block and supported thereby, the downward movement of said block controlled by the weight of the drum and film which is being wound thereupon, means for causing said block to assume its normal position after having been pressed downwardly by the weight of a drum the downward movement of said block automatically regulating the tension of said belt.

5. In a moving picture machine; the combination with, a shaft, a pulley and a belt used for rewinding films upon a drum, of a supporting structure, a block slidably mounted within an opening in said supporting structure, said shaft journaled through said block and supported thereby, the downward movement of said block controlled by the weight of the drum and film which is being wound thereupon, the downward movement of said block automatically regulating the tension of said belt.

6. In a moving picture machine; the combination with, a shaft, a pulley and a belt used for rewinding films upon a drum, of a supporting structure a block slidably mounted within an opening in said supporting structure said shaft journaled through said block and supported thereby, the downward movement of said block controlled by the weight of the drum and film which is being wound thereupon, and means for causing said block to assume its normal position after having been pressed downwardly by the weight of a drum, the downward movement of said block automatically regulating the tension of said belt.

7. In a moving picture machine; the combination with, a shaft, a pulley and a belt used for rewinding films upon a drum, of a supporting structure, a block slidably mounted within an opening in said supporting structure, said shaft journaled through said block and supported thereby, the downward movement of said block controlled by the weight of the drum and film which is being wound thereupon, a pin removably connected to the lower side of said block, said pin slidably mounted within an opening in said supporting structure, the lower portion of said pin being of smaller diameter than the upper portion of the same, a coil spring mounted about said lower end for causing said block to assume its normal position when a drum is removed from the shaft the downward movement of said block automatically regulating the tension of said belt.

8. In a moving picture machine; the combination with, a shaft, a pulley and a belt used for rewinding films upon a drum, of a supporting structure, a block slidably mounted within an opening in said supporting structure, said shaft journaled through said block and supported thereby, the downward movement of said block controlled by the weight of the drum and film which is being wound thereupon, a pin removably connected to the lower side of said block, said pin slidably mounted within an opening in said supporting structure, the lower portion of said pin being of smaller diameter than the upper portion of the same, a coil spring mounted about the said lower end for causing said block to assume its normal position when a drum is removed from the shaft, and means for regulating the tension of said spring, the downward movement of said block automatically regulating the tension of the belt.

9. In a moving picture machine; the combination with, a shaft, a pulley and a belt used for rewinding films upon a drum of, a supporting structure, a block slidably mounted within an opening in said supporting structure, said shaft journaled through said block and supported thereby, the downward movement of said block controlled by the weight of the drum and film which is being wound thereupon, means for causing said block to assume its normal position after having been pressed downwardly by the weight of a drum, and means for regulating the tension of said spring, the downward movement of said block automatically regulating the tension of said belt.

10. In a moving picture machine; the combination with, a shaft, a pulley and a belt used for rewinding films upon a drum, of a supporting structure, a block slidably mounted within an opening in said supporting structure, said shaft journaled through said block and supported thereby, the downward movement of said block controlled by the weight of the drum and film which is being wound thereupon, a pin removably connected to the lower side of said block, said pin slidably mounted within an opening in said supporting structure, the lower portion of said pin being of smaller diameter then the upper portion of the same, a coil spring mounted about said lower end for causing said block to assume its normal position when a drum is removed from the shaft, means for regulating the tension of said spring, and means for preventing lateral movement of said shaft within said block, the downward movement of said block automatically regulating the tension of said belt.

11. In a moving picture machine; the combination with a shaft, a pulley mounted thereon, a drum mounted on the shaft, and a belt used for rewinding films upon said drum, of a slidably mounted block having the shaft journaled therein and supported thereby and controlled by the weight of the drum and film being wound thereupon for regulating the tension of the belt, resilient means arranged beneath the block for causing the block to assume its normal position after having been pressed downwardly by the weight of the drum, and means for regulating the tension of the resilient means.

12. In a moving picture machine; the combination with a shaft, a pulley mounted thereon, a drum mounted on the shaft, and a belt used for rewinding films upon said drum, of a supporting structure, a block slidably mounted within an opening in said supporting structure and having the shaft journaled therethrough and supported thereby, the downward movement of said block being controlled by the weight of said drum and film being wound thereupon to automatically regulate the tension of said belt, a pin removably connected to the under surface of the block and slidably mounted within an opening in the supporting structure, the lower end of the pin being reduced, a sleeve mounted in the supporting structure

for slidably receiving and guiding the reduced end of the pin, a coil spring arranged about the reduced end of the pin and bearing against the sleeve and the enlarged end of the pin for causing the block to assume its normal position when the drum is removed from the shaft, a set screw mounted in the structure for adjustably holding the sleeve in frictional engagement with the supporting structure to consequently regulate the tension of the spring, and means for preventing lateral movement of said shaft within said block.

In testimony whereof I affix my signature in presence of two witnesses.

JULES F. RENEY.

Witnesses:
S. GRIPHATON,
E. J. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."