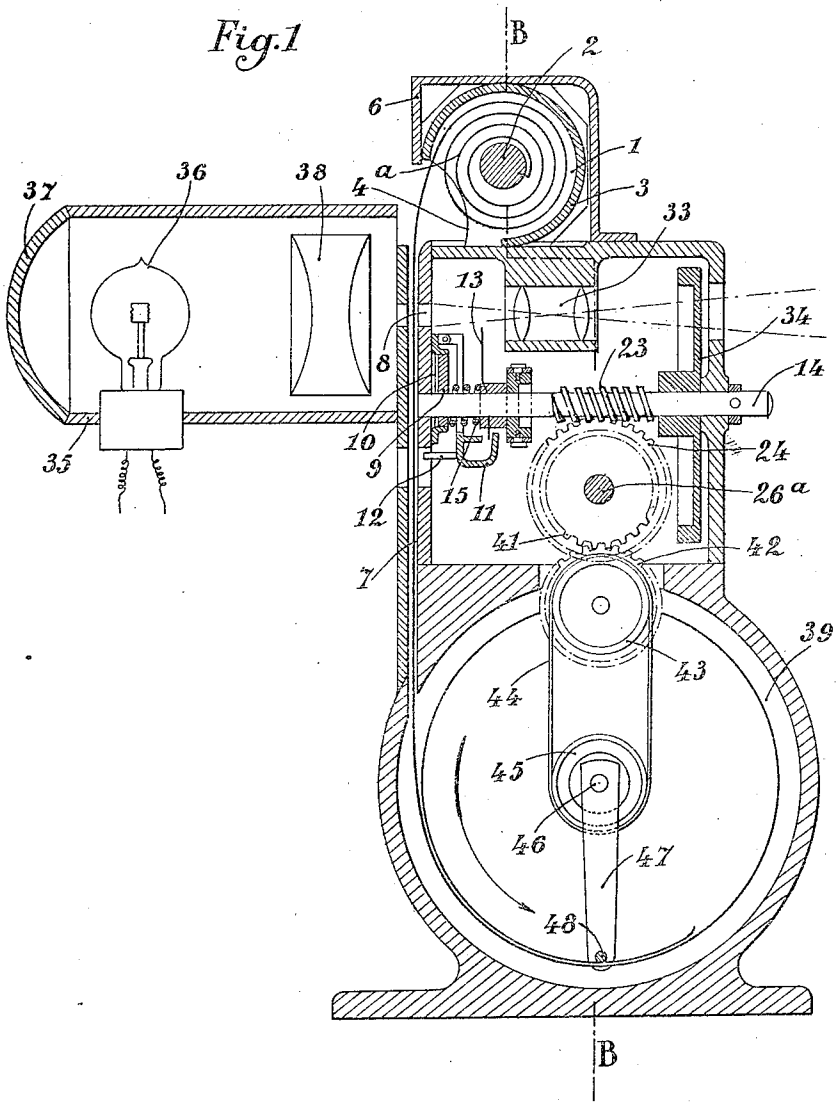
Sept. 8, 1925. 1,552,552

P. S. GAURIAT

MOTION PICTURE PROJECTION APPARATUS

Filed Nov. 5, 1923 2 Sheets-Sheet 1

Fig. 1



Pierre Sylvain Gauriat
INVENTOR.

By [signature]
his Attorney

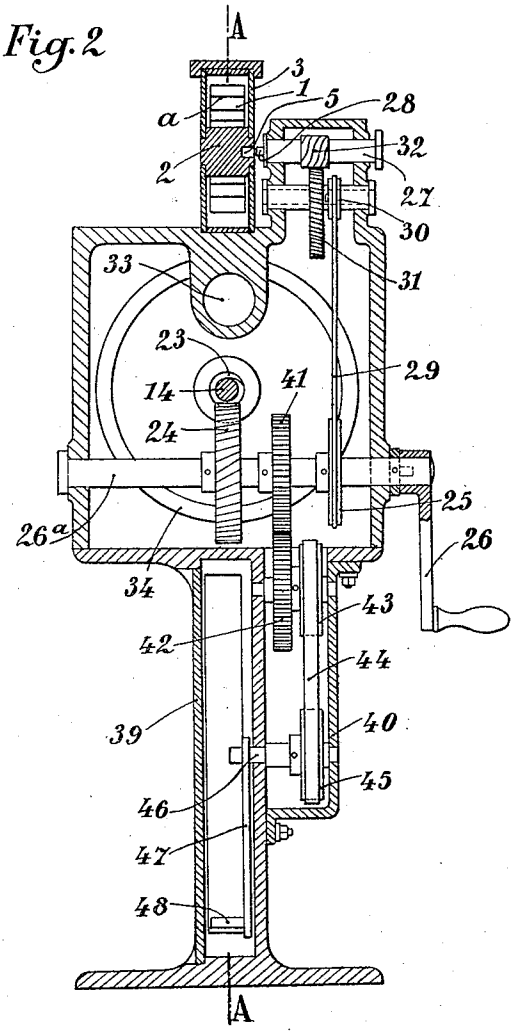
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P. S. GAURIAT

MOTION PICTURE PROJECTION APPARATUS

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Fig. 2



Pierre Sylvain Gauriat
INVENTOR;
By
his Attorney

Patented Sept. 8, 1925. 1,552,552

UNITED STATES PATENT OFFICE.

PIERRE SYLVAIN GAURIAT, OF PARIS, FRANCE, ASSIGNOR TO PATHE CINEMA, ANCIENS ETABLISSEMENTS PATHE FRERES, OF PARIS, SEINE, FRANCE, A FRENCH COMPANY.

MOTION-PICTURE-PROJECTION APPARATUS.

Application filed November 5, 1923. Serial No. 672,740.

To all whom it may concern:

Be it known that I, PIERRE SYLVAIN GAURIAT, citizen of the French Republic, residing at Paris, Seine, in the French Republic, have invented new and useful Improvements in Motion-Picture-Projection Apparatus, of which the following is a specification.

The present invention relates to improvements in motion picture projection apparatus, especially to such apparatus adapted for use by amateurs and in which the end of the film is permanently secured to the revoluble core of a storage reel located above the feeding mechanism, said film being wound upon itself during projection within a flat circular box constituting the base of the apparatus in which the film is adapted to enter in a substantially tangential manner.

According to the invention a radial arm is adapted to rotate within said circular box, said arm carrying at its outer end a transverse pin adapted to engage the innermost spiral turn of the film, thereby facilitating the formation of spiral turns and ensuring the regular winding up of the film.

Another feature of my invention resides in that a worm is adapted to move axially within its bearings so as to be alternately coupled and uncoupled with the revoluble core of the storage reel, said worm meshing with a worm wheel operatively connected to the control member of the apparatus.

In the acompanying drawings showing by way of example an embodiment of the invention:

Fig. 1 is a vertical section along A—A (Fig. 2) of the projection apparatus.

Fig. 2 is a vertical section along B—B (Fig. 1).

1 is the storage reel with the revoluble core 2 having permanently secured thereto one end of the film *a* to be projected, the said core being provided at one end with a diametral groove 5 for actuating the same by mechanical means; 3 are the side walls of the storage reel and 4 the aperture formed in the walls thereof; 6 is the support or bracket for securing the storage reel to the projection apparatus. 7 is a guideway for the film and 8 the film gate of the apparatus. The film may be moved by any suitable film feeding device controlled from the driving shaft 26^a to which is secured a hand crank 26, suitable means being provided for rendering said feeding device inoperative at the end of the projection in order not to cause deteriorations to the film, since the latter is retained in the core 2.

39 is a flat circular casing constituting the base of the apparatus and into which the guideway 7 opens in a direction substantially tangential to the peripherical wall of the casing 39. The driving shaft 26^a has mounted thereon a gear wheel 41 engaging a gear wheel 42 mounted in a casing 40 which is secured to the casing 39. The gear wheel 42 has secured thereto the pulley 43 which is connected by a belt 44 with a second pulley 45 whose shaft 46 extends within the casing 39 at the centre of the same. To the shaft 46 is secured a radial arm 47 having at the end thereof a small pin 48 disposed parallel to the shaft 46.

In operation the pin 48 acts by friction in the direction of the winding onto the film entering the casing, thereby facilitating the formation of the spiral turns.

The said casing 39 which may be provided with suitable means for preventing friction between the film and the inner surface, such for instance as rollers disposed around the periphery and ribs disposed upon the side walls and the periphery.

By the use of the above described device, a considerably greater length of film can be stored in the casing 39 than if the said device were not employed.

The mechanism for re-winding the film is constituted by the shaft 27 having disposed at the end thereof the screwdriver member 28 adapted to engage the groove 5 of the core 2 forming part of the storage reel 1. The said shaft is actuated from the driving shaft 26^a through the medium of the pulley 25, the belt 29, the pulley 30, the worm wheel 31 and the worm 32.

The shaft 27 is adapted to slide axially in its bearings and the teeth of the worm 32 and of the worm wheel 31 are so inclined that, when the crank is rotated in the direction corresponding to the projection, the reaction of the worm and of the worm wheel upon each other causes the shaft 27 to slide towards the right (Fig. 2), i. e., removes

said shaft from the core 2; but on the contrary, when the crank is rotated in the reverse direction, the shaft 27 is caused to slide towards the left, the part 28 engages the groove 5 of the core 2 and the latter is rotated so as to rewind the film within the storage reel.

Constructional modification may obviously be brought to the arrangements herein described and illustrated without departing from the invention.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a motion picture apparatus a flat circular box situated below the feeding mechanism of the apparatus and constituting the base of the apparatus, a passage affording communication between the film gate and said box, the film being adapted to enter said box in a substantially tangential direction after leaving the feeding mechanism and to be wound automatically upon itself within said box during the projection, a radial arm adapted to rotate within said box, a transverse pin on the outer end of said arm coming into contact with the innermost turn of film and means for operatively connecting said arm to the control member of the apparatus.

2. In a motion picture apparatus, a storage reel for the film, a revoluble core in said storage reel whereon the inner end of the film is permanently attached, a flat circular box situated below the feeding mechanism of the apparatus and constituting the base of the apparatus, a passage affording communication between the film gate and said box, the film being adapted to enter said box in a substantially tangential direction after leaving the feeding mechanism and to be wound automatically upon itself within said box during the projection, means for imparting a circular motion within said box to the turns of film gradually formed, a worm adapted to be displaced axially and to engage said revoluble core of the storage reel, a worm wheel engaging with said worm and means for operatively connecting said worm wheel to the control member of the apparatus.

In testimony whereof I have signed my name to this specification.

PIERRE SYLVAIN GAURIAT.