W. FRANK.

MACHINE FOR TREATING CINEMATOGRAPH FILMS.

APPLICATION FILED JAN. 26, 1916.

1,211,429.

Patented Jan. 9, 1917.

2 SHEETS—SHEET 1.

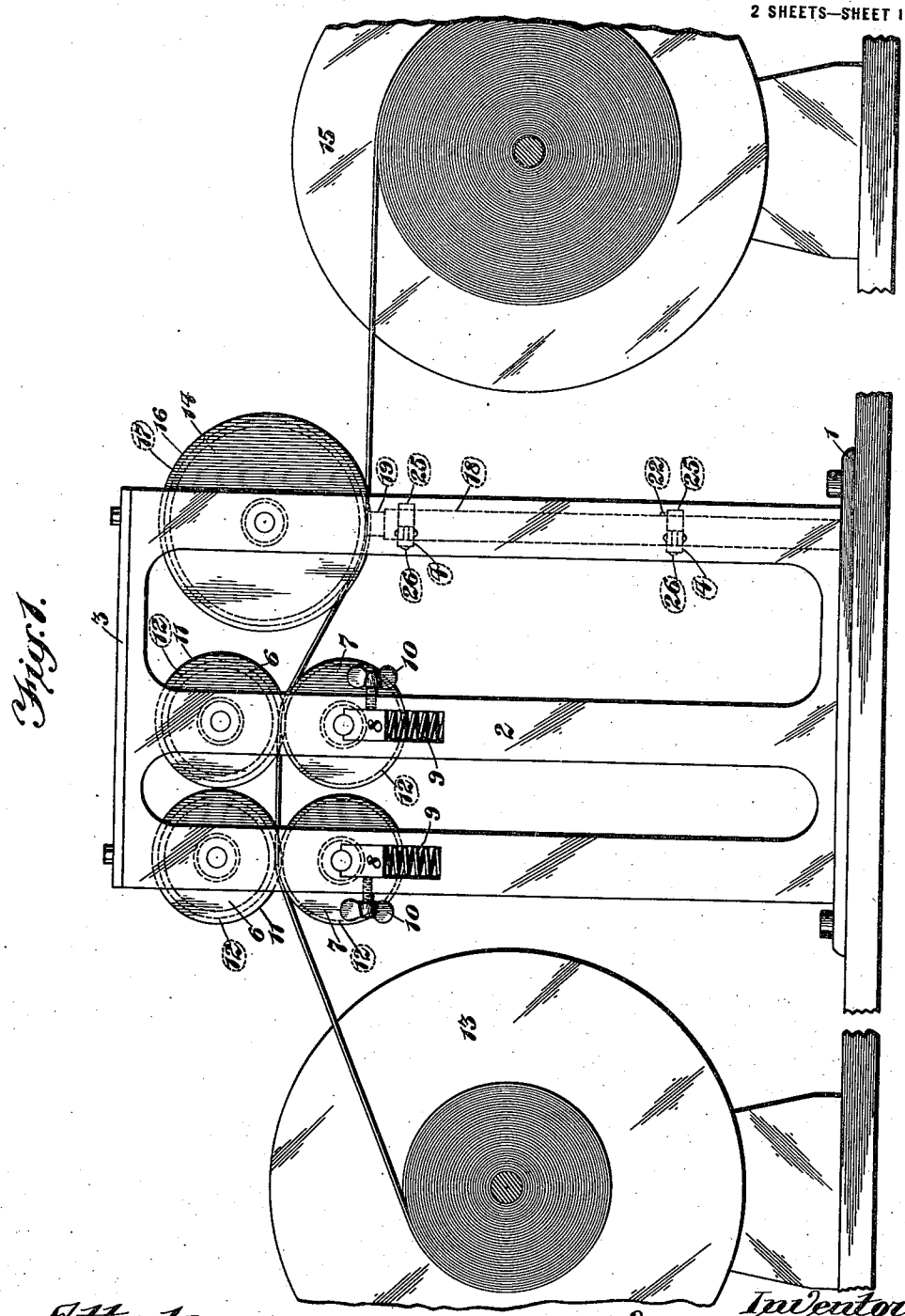


Fig. 1.

Attest:
Charles A. Becker.

Inventor.
William Frank
by Rippey & Kimpenel
His Attorneys.

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2 SHEETS—SHEET 2.

Fig. 2.

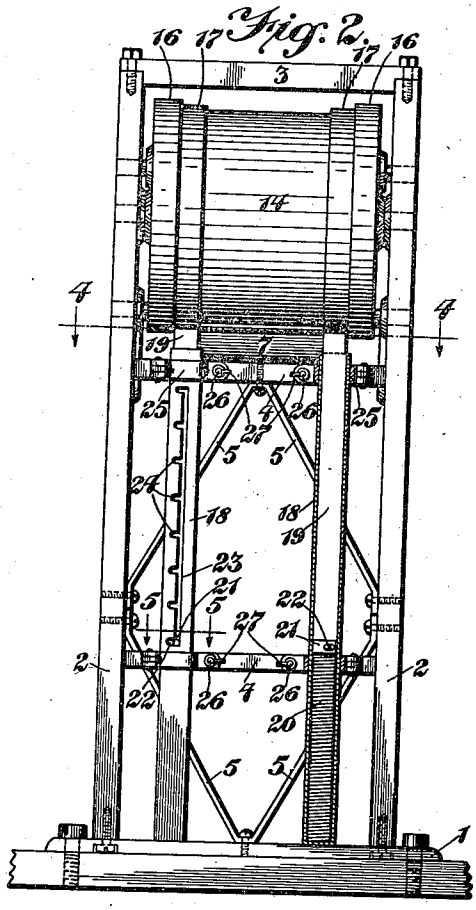


Fig. 3.

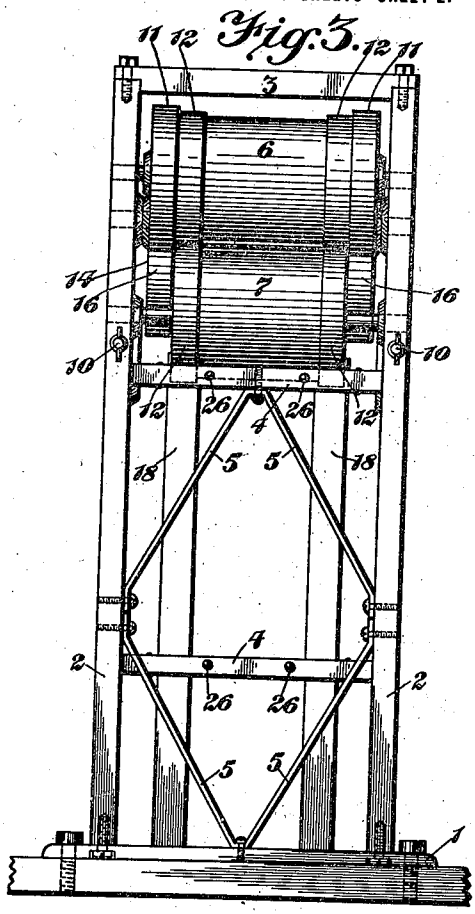


Fig. 4.

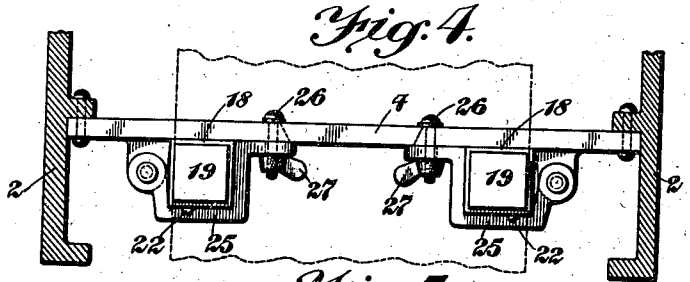


Fig. 5.



Attest:
Charles A. Becker

Inventor.
William Frank
by Pippey & Kingsland
His Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM FRANK, OF ST. LOUIS, MISSOURI.

MACHINE FOR TREATING CINEMATOGRAPH-FILMS.

1,211,429. Specification of Letters Patent. Patented Jan. 9, 1917.

Application filed January 26, 1916. Serial No. 74,509.

To all whom it may concern:

Be it known that I, WILLIAM FRANK, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a new and useful Machine for Treating Cinematograph-Films, of which the following is a specification.

This invention relates to a machine for treating cinematograph films, and consists in the novel design, arrangement and combination of parts hereinafter more fully disclosed.

The commercial form of film for cinematograph machines has been found to require a thin coating of paraffin or other similar plastic material at either edge of the film strips on the emulsion side. This coating is required to prevent the injury of the film due to the edges of the film strip becoming engaged with parts of the film feeding mechanism of the machine. Heretofore it has been quite generally the practice to coat the films by hand, which has been found to be unsatisfactory as it is an expensive method and also results, unless great care is taken, in overrunning the edges of the film too far causing a blurring of the part of the film carrying the picture.

It is the object of the present invention to produce a machine whereby strips of film may be coated at each edge with paraffin or like material, that is to say the object is the provision of a machine to accomplish the coating of the films mechanically for the purposes above pointed out.

Additional features and objects attainable from the present invention will be readily appreciated by those skilled in the art, without specific mention, from the following detailed description thereof taken in connection with the accompanying drawings in which—

Figure 1 is a side elevation of the machine of the present invention, showing also in conventional form the feeding reel and the receiving reel for the film strip. Fig. 2 is a front end elevation of the machine. Fig. 3 is a rear end elevation of the machine. Fig. 4 is an enlarged transverse section of a part of the machine taken substantially on the line 4—4 of Fig. 2. Fig. 5 is a transverse section on the line 5—5 of Fig. 2 to illustrate further details of construction.

As illustrated in the drawings the machine comprises a frame including a base 1, side members 2 and a top member 3. The frame obviously can be erected and held in adjustment in any preferred manner but as illustrated includes transverse tie members 4 and suitably positioned struts or braces 5. In this frame are mounted the transverse rolls for guiding the strips of film and for maintaining the edges thereof in contact with the suitably positioned cakes of paraffin. The guiding mechanism includes a duplicate set of presser rolls 6 and 7. The presser rolls are journaled in the frame of the machine transversely thereof, the upper rolls 6 being rigidly mounted in the frame and the lower rolls 7 being yieldingly mounted in the frame. The yielding support or mounting for each of the rolls 7 includes a vertically slidable bearing 8 supported upon an expansion spring 9 nested in the frame of the machine, as clearly illustrated in Fig. 1 of the drawing, it being understood that the rolls 7 are yieldingly mounted at both ends. The tendency of the springs 9 is to press the rolls 7 toward the rigidly supported rolls 6 so as to engage and grip the film. When the film has been fed into the machine between the rolls 6 and 7 and the springs have caused the adjustment of the rolls 7, so as to grip the film, the rolls 7 may be locked or set in the gripping position by binding devices comprising wing nuts 10 screwed through the frame in such a manner as to engage against the edge of the movable bearings 8.

The rolls 6 are provided on their periphery adjacent to the end with flanges 11, the space between the flanges being the width of the film strip, so that said flanges act as guides for the film strip. Within the flanges 11 are raised rings 12. The periphery of the rolls 7 have complementary rings 12 thereon which are in alinement with the rings on the rolls 6. The rolls 6 and 7 are arranged in parallel pairs so that when the film strip is brought to a position between the rings 12 it will be frictionally gripped and held in alinement in its forward movement by the flanges 11 on the upper rolls.

As will be observed from the drawings the film strip is fed from the feed reel 13, between the rolls 6 and 7, passing forward on to a platen roller 14 from which it passes over a receiving reel 15, it being understood that the reel 15 is wound manually or in the usual manner. The roller 14 is rigidly journaled in the front end of the frame and is of a diameter somewhat larger than that of

the rolls 6 and 7. The surface of the roll 14 includes outer annular flanges 16 and raised rings 17, the flanges 16 and rings 17 being spaced as are the flanges 11 and the rings 12 on the rolls 6 and 7.

Below the roller 14 are mounted in spaced relationship tubes 18 for containing cakes of paraffin 19. The tubes 18 are arranged below each of the rings 17 on the roller 14, so that as the cakes of paraffin are raised in the tubes by the action of expansion springs 20, which carry at their upper ends the disks 21, the top of the cakes 19 will be held yieldingly against the edges of the film strip. The elevation of the cakes 19 may be controlled by providing the disks 21 with pins 22 which project through vertical slots 23 formed in one wall of the tubes 18. At graduated intervals and extending transversely from the slots 23 are notches 24. By turning the pins 22 slightly they may be engaged in desired ones of the notches 24 so as to arrest the upward movement of the cakes 19, which is desirable when the film is being adjusted in the machine or when the machine is not in use.

In order that the tubes 18 may be readily removed for the purpose of replenishing the supply of paraffin, I provide adjustable supports for said tubes comprising hinged straps 25 mounted on the tie members 4. Any suitable form of keeper device may be provided for locking the straps in position to hold the tubes in adjustment, the form shown in the drawings comprising bolts 26 which pass through perforations in the ends of the straps and are adapted to receive adjustable wing nuts 27.

I am aware that numerous changes may be made in the design and arrangement of parts without departing from the spirit and scope of the invention. I do not limit myself therefore to exact details, but

What I claim and desire to secure by Letters Patent is:—

1. In a machine for treating cinematograph films, a platen mounted transversely in the main frame of the machine and having at each edge guiding flanges, narrow raised rings within the flanges adapted to engage the edge of a film strip, separate containers for plastic bars of lubricating material removably mounted in the frame below said platen and at either side thereof, so as to present the ends of separate plastic bars to the edge of the film strips below said rings on said platen, a movable support for the plastic bars in each container, a spring in each of said containers tending to press the movable support upwardly, thereby holding the ends of the bars of plastic material in yielding contact with the edges of of the film, and means for arresting the upward movement of said movable supports.

2. A machine for treating cinematograph films comprising a frame, tensioning mechanism including duplicate pairs of rollers, the upper rollers of each pair rigidly mounted in the frame and the lower rollers of each pair movably mounted in the frame, all of said rollers being provided with extending rings adapted to engage only the edges of the film strip, a platen roller mounted in the frame forward of said tensioning mechanism, raised rings on said platen roller adapted to engage the edge only of the film strip, containers for plastic bars mounted below the respective rings on said platen and adapted to present the upper end of the plastic bars at each side of the strip of film below the points where the film is engaged by said rings, separate means for yieldingly elevating the plastic bars in said containers to maintain them in contact with the longitudinal edges of the film strips, and means for independently controlling the upward movement of said plastic bars, substantially as specified.

3. In a machine for treating cinematograph films, tensioning means engaging the edges only of the film strip, a platen roll having raised rings disposed to engage the edges only of the film strip, and means for yieldingly maintaining separate bars of lubricating material below the edges of the film strip engaged by the engaging portion of the platen, substantially as specified.

In witness whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM FRANK.

Witnesses:
L. C. KINGSLAND,
N. G. BUTLER.