No. 879,691. PATENTED FEB. 18, 1908.

S. M. TANNEHILL.

MOVING PICTURE APPARATUS.

APPLICATION FILED SEPT. 20, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

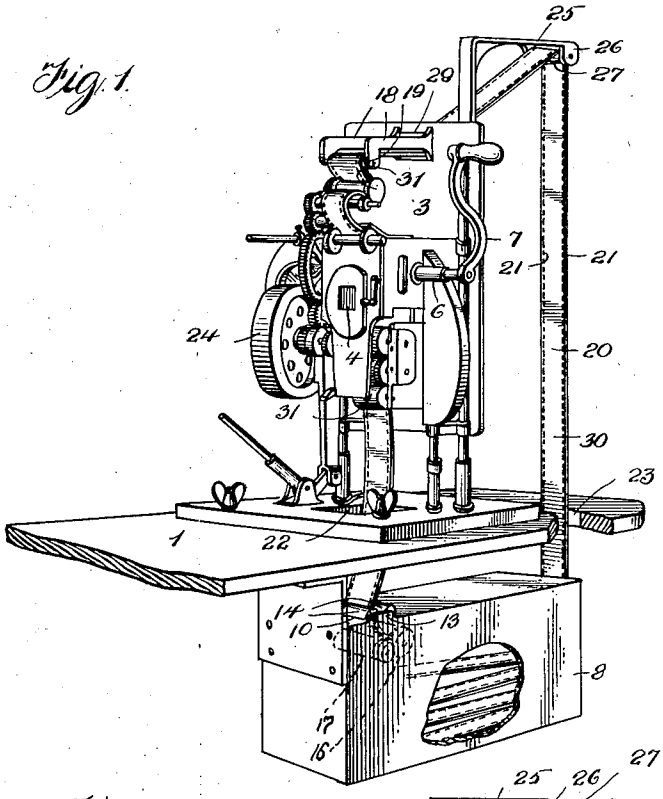


Fig. 2.

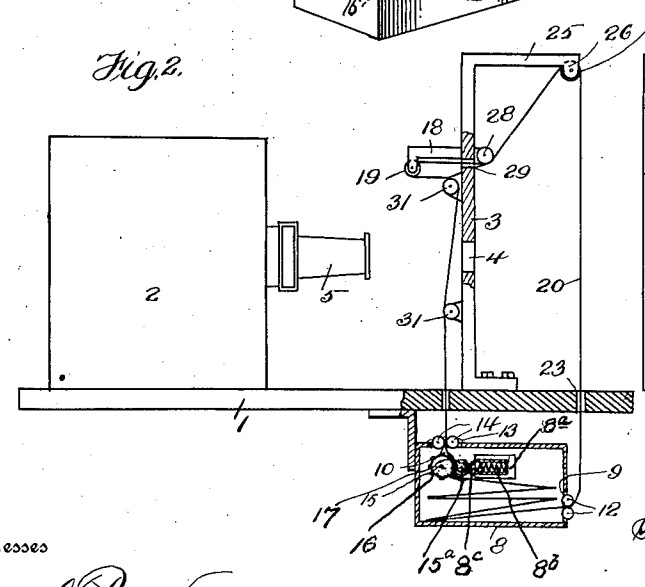
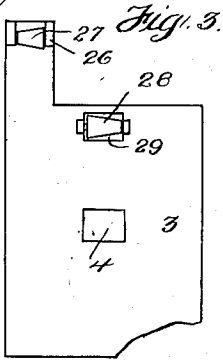


Fig. 3.



Witnesses

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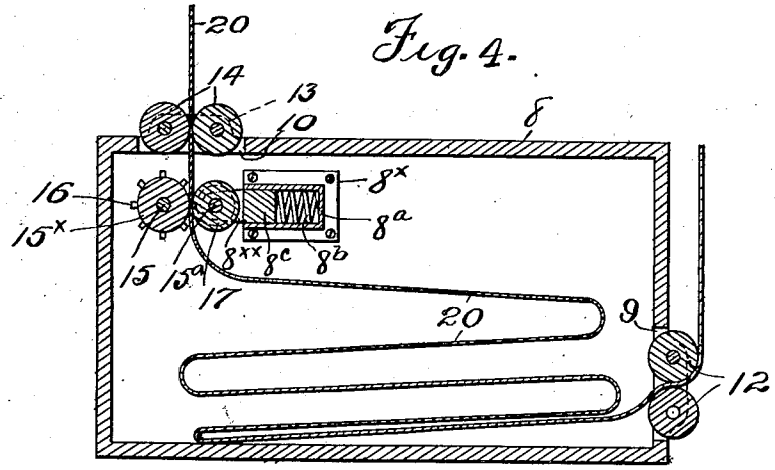
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2 SHEETS—SHEET 2.

Fig. 4.



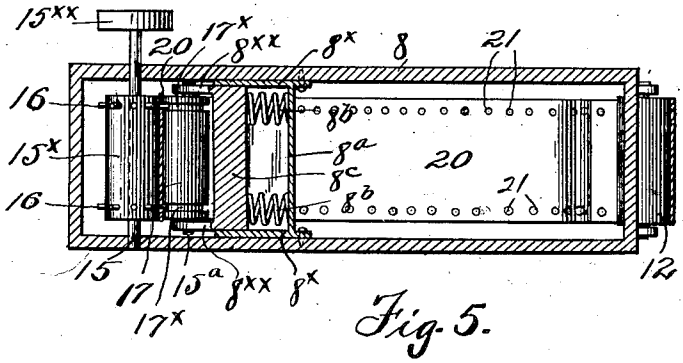


Fig. 5.

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MOVING-PICTURE APPARATUS.

No. 879,691. Specification of Letters Patent. Patented Feb. 18, 1908.

Application filed September 20, 1907. Serial No. 393,772.

To all whom it may concern:

Be it known that I, SHERMAN M. TANNEHILL, a citizen of the United States of America, residing at Connellsville, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Moving-Picture Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to moving picture apparatus, and its primary object is to avoid the unwinding and rewinding of the film strip employed in mechanisms of this class.

A further object of the invention is, to provide rollers or pulleys of novel construction, and relative arrangement, for guiding the film strip in its travel.

The invention consists in the combination with a moving picture machine, of a film strip having its ends connected to form an endless band; and in an endless film strip formed adjacent to its edges with perforations to receive the teeth of sprocket wheels for driving the endless strip.

The invention further consists of means for supporting the endless film-strip in such a manner as to direct the front portion of said strip away from the sight opening of the apparatus, so that the projection of the pictures upon the strip by means of the usual stereopticon will not be obstructed.

The construction of the improvement will be fully described hereinafter in connection with the accompanying drawing which forms part of the specification, and its novel features will be defined in the appended claims.

In the drawing: Figure 1 is a view in perspective, partly broken away of a moving picture machine embodying the invention, Fig. 2 is a diagrammatic view partly in side elevation and partly in elevation of the same, and Fig. 3 is a detail front elevation showing the oppositely disposed conical rollers over which the film strip passes. Fig. 4 is a central longitudinal sectional view of the film box that is supported beneath the machine, and Fig. 5 is a horizontal sectional view of the same.

The reference numeral 1 designates a table upon which is supported a stereopticon 2, and a frame 3 supporting the film mechanism, said frame provided with a sight opening 4 alining with the lens 5 of the stereopticon. The revoluble shaft 6 of the film feeding mechanism is provided with a crank 7.

Below the table 1 is suspended a box 8, formed at its rear end with a slot 9 and at its top with a slot 10. Parallel rollers 12 are journaled in the walls of the slot 9 or in suitable brackets provided therefor, and parallel brackets 13 project from the opposite walls of the slot 10 forming bearings for a pair of rollers 14. Below these rollers 14 within the box 8 are supported two shafts 15 and 15^a, the shaft 15 carrying a roller $15^\times$ having sprocket wheels 16, while the shaft 15^a carries a roller 17 provided with grooves $17^\times$ to receive the teeth of sprocket wheels 16. Within the box 8 is a casing 8^a, open at the front end and closed at the rear end. This casing is provided with side flanges $8^\times$ by means of which it is secured to the inner faces of the side walls of the box 8. In the casing 8^a is a sliding block 8^c provided with forwardly-projecting arms $8^{\times\times}$ in which the shaft 15^a is journaled. One or more coil springs 8^b is mounted in the casing 8^a between the block 8^c and the rear end of said casing for the purpose of holding the roller 17 yieldingly against the roller $15^\times$ carried by shaft 15. The film is firmly held between the rollers $15^\times$ and 17 by the spring or springs 8^b forcing the block 8^c and roller 17 towards roller $15^\times$, thus preventing the film from being displaced with relation to the sprocket wheels, and also allowing for any unevenness or irregularities in the film.

Bracket arms 18 project from the forward side of the frame 3, and in said arms is supported a roller 19.

The numeral 20 designates the endless film strip formed adjacent to each of its edges with perforations 21 to receive the teeth of the sprocket wheels 16. This film strip passes through openings 22 and 23 formed in the table, and through the slots 9 and 10 of the box. The shaft 15 is operated by a belt (not shown) operating over pulley 24 of the moving picture machine and over pulley $15^{\times\times}$ carried by the shaft 15.

A bracket 25 extends rearward from the frame 3, and mounted in bearings 26 depending from said bracket is a conical pulley 27. Another conical pulley 28 is mounted in bracket bearings above an opening 29 in the frame 3, through which opening the film-strip passes.

The two conical pulleys 27 and 28 are oppositely disposed as shown in Fig. 3 and are out of vertical alinement so that that portion 30 of the film-strip which is moving in front of the frame 3 will not obstruct the part of the film opposite the sight opening.

The endless film strip 20 is also guided by parallel rollers 31 supported on the front side of the frame 3, and any slack in the film strip will fold upon itself within the box 8, as shown.

Parts of the feeding mechanism not specifically described are intended to be represented only conventionally, the characteristic and novel features of the present improvement being the structure above fully described.

Having fully described my invention what I claim and desire to secure by Letters Patent, is.

1. In a moving picture machine the combination with a stereopticon, of a frame carrying the film feeding mechanism, and means for deflecting the forward portion of a film strip fed from said mechanism out of alinement with the lens of the stereopticon.

2. In a moving picture machine the combination with a stereopticon, of a frame carrying the film feeding mechanism, and means for deflecting the forward portion of a film strip fed from the feeding mechanism through said frame, comprising oppositely disposed conical pulleys supported in the frame in different vertical planes.

3. In a moving picture machine, the combination with a stereopticon, of a frame supported in front thereof, a box below said frame, film-carrying and feeding mechanism supported on said frame, and means for deflecting a portion of a film strip fed from said mechanism away from the sight opening of the machine.

4. In a moving picture mechanism, the combination with a stereopticon, of a frame supported in front of said stereopticon, a film-carrying and feeding mechanism supported by said frame, said frame provided with an opening to receive a film, a conical roller in said opening over which the film is drawn as it is fed through the feeding mechanism, a bracket carried by the rear face of the frame and located on a different plane than the opening in said frame, a conical roller carried by said bracket to receive said film, and a film-receiving box supported below said frame.

5. In a moving picture mechanism, the combination with a stereopticon, of a frame supported in front of said stereopticon, a film-carrying and feeding mechanism supported by said frame, said frame provided with an opening to receive a film, a conical roller in said opening over which the film is drawn as it is fed through the feeding mechanism, a bracket carried by the rear face of the frame and located on a different vertical plane than the opening in said frame, a conical roller in said bracket to receive said film, a film-receiving box supported below said frame, and means within said box for holding the film strip taut during the feeding operation.

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

SHERMAN M. TANNEHILL.

Witnesses:
J. S. LICHTY,
G. W. JOHNSTON.