G. SCHMID.

MOTION PICTURE APPARATUS.

APPLICATION FILED AUG. 14, 1915.

1,202,107. Patented Oct. 24, 1916.

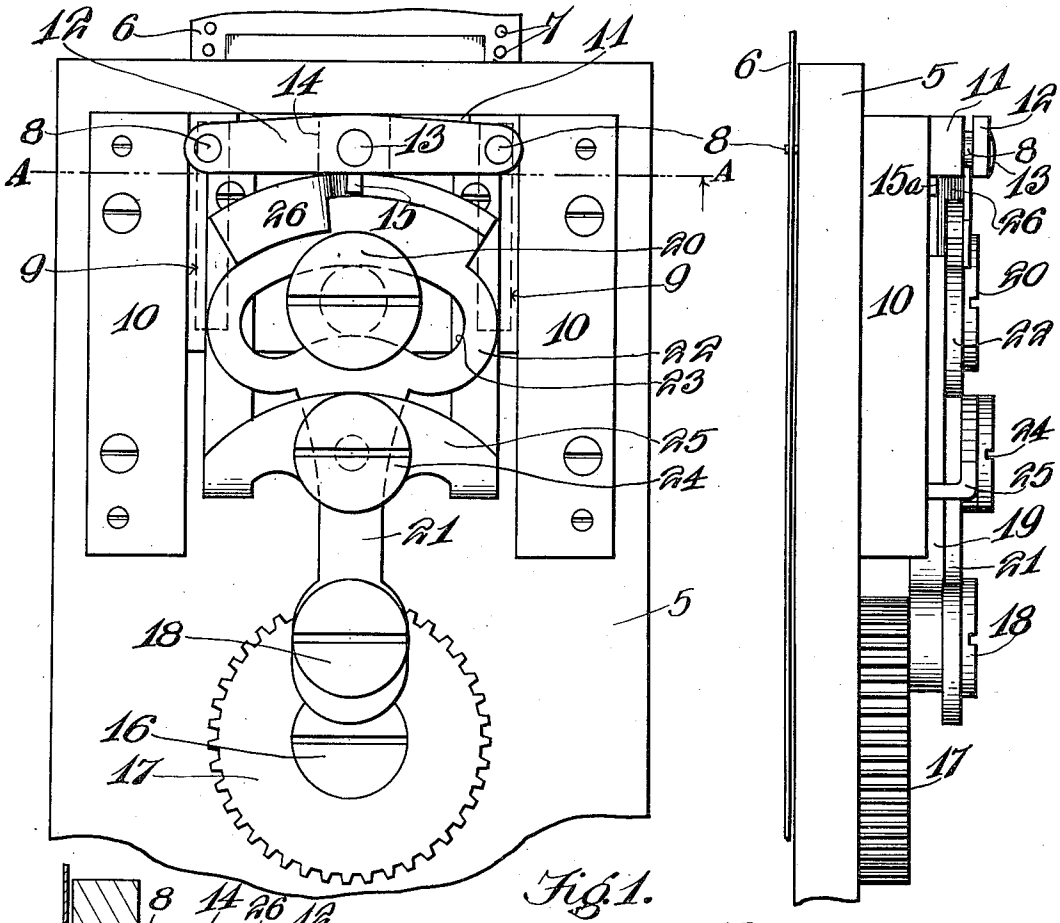


Fig. 1.

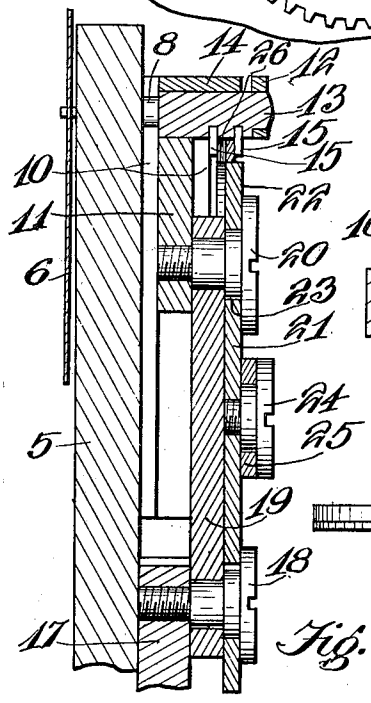


Fig. 3.

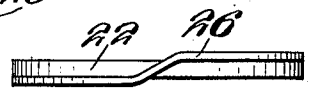


Fig. 5.

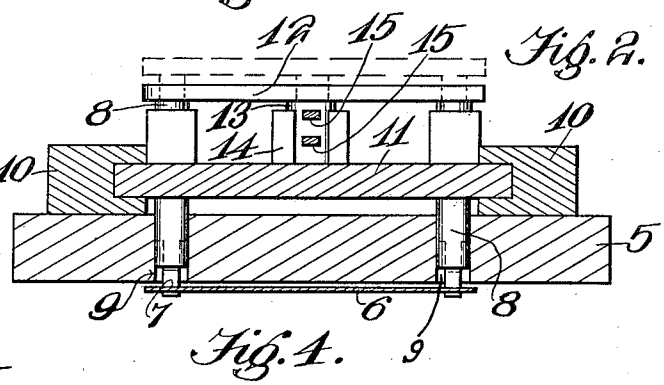


Fig. 4.

Fig. 2.

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MOTION-PICTURE APPARATUS.

1,202,107. Specification of Letters Patent. Patented Oct. 24, 1916.

Application filed August 14, 1915. Serial No. 45,515.

To all whom it may concern:

Be it known that I, GUSTAVE SCHMID, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Motion-Picture Apparatus, of which the following is a specification.

This invention relates to motion picture apparatus, and more particularly to the mechanism which intermittently feeds the film, the same comprising a device which grips the film, moves it forward, and is then retracted to take another hold on the film to advance the same another step.

The invention has for its object certain improvements in the gripping device, whereby a more efficient and steady feed is produced, as will be described hereinafter and claimed.

In order that the invention may be better understood, reference is had to the accompanying drawing, in which—

Figure 1 is a front elevation of the mechanism; Fig. 2 is an edge view thereof; Fig. 3 is a central vertical section of the mechanism; Fig. 4 is a horizontal section on the line A—A of Fig. 1, and Fig. 5 is an edge view of a cam.

Referring specifically to the drawing, 5 denotes a base plate along one side of which the film 6 travels, the same having uniformly spaced perforations 7 along its edges as usual. On the other side of the base plate is mounted the feeding mechanism of the film. This mechanism comprises two pins 8 spaced to conform to the spacing of the two rows of perforations 7 and adapted to be advanced to enter the same, and then moved downward to feed the film one step. The pins are then retracted and returned to feed the film forward another step. In the base are parallel slots 9 in which the pins work. The following mechanism is provided for operating the pins:

On the base plate 5, alongside the slots 9, are mounted undercut guide strips 10, between which is mounted a slide 11 having end apertures in which the pins 8 are slidably mounted. The rear ends of the pins are connected by a cross bar 12 having midway between its ends a guide stud 13 which seats slidably in an aperture in a lug 14 on the back of the slide. The stud 13 carries laterally projecting pins 15 forming abutments, which are for a purpose to be presently described.

On the same side of the base plate 5 as the guides 10 and the slide 11, is mounted, on a stud 16, a pinion 17 carrying a wrist pin 18 to which is connected one end of a pitman 19 having its other end connected to the slide 11 by a screw stud 20. To the wrist pin is also loosely connected one end of a lever 21 having at its opposite end an arcuate enlargement 22 provided with a slot 23 into which the stud 20 loosely extends. Intermediate its ends, the lever is fulcrumed on a stud 24 carried by a bracket 25 mounted on the slide 11. The slot 23 and the outer edge of the part 22 of the lever are curved on arcs having for their centers the pivot 24 of the lever 21, and on said edge of the part 22 is fixed a cam 26 designed to move the stud 13 in the direction of its length, the pins 15 being located between the cam and engageable thereby to effect this movement of the stud, and as the stud is on the cross bar 12 carrying the pins 8, the latter are alternately advanced to enter the perforations 7, and retracted and withdrawn from the perforations.

When the pinion 17 is in motion, the lever 21 is oscillated about the stud 24 to advance and retract the pins 8 through the cam mechanism, and at the same time, the slide 11 is reciprocated by the pitman 19, to carry the pins up and down in the slots 9. The parts are so designed that the pins are advanced when they are at the upper ends of the slots and they remain advanced to feed the film 6 during their travel down the slots. At the end of the downward travel of the pins, they are retracted to release the film, and they then move back in retracted position to the upper ends of the slots for the next feed stroke, without touching the film.

The pinion 17 is geared to a suitable actuating mechanism which need not be shown or described as it forms no part of the present invention.

I claim:—

1. A film feed for motion picture apparatus, comprising a reciprocating slide, film-engaging fingers carried by the slide and movable into and out of engaging position, an abutment carried by the fingers, a rotatable driving element, a pitman connection between said element and the slide for reciprocating the latter, an oscillatory element

carried by the slide and obtaining motion from the driving element, and a cam on the oscillatory element engaging the abutment to alternately advance and retract the film-engaging fingers, said fingers being advanced on the feed stroke and retracted on the return stroke.

2. A film feed for motion picture apparatus, comprising a reciprocating slide, film-engaging fingers carried by the slide and movable into and out of engaging position, a cross bar connecting the rear ends of the fingers, an abutment carried by the cross bar, a rotatable driving element, a pitman connection between said element and the slide for reciprocating the latter, an oscillatory element carried by the slide and obtaining motion from the driving element, and a cam on the oscillatory element engaging the abutment to alternately advance and retract the film-engaging fingers, said fingers being advanced on the feed stroke and retracted on the return stroke.

3. A film feed for motion picture apparatus, comprising a reciprocating slide, film-engaging fingers carried by the slide and movable into and out of engaging position, an abutment carried by the fingers, a rotatable driving element, a wrist pin on said element, a pitman connected at one end to the wrist pin and at the other end to the slide for reciprocating the slide, a lever pivoted to the slide and connected at one end to the wrist pin, and a cam on the other end of the lever engaging the abutment to alternately advance and retract the film-engaging fingers, said fingers being advanced on the feed stroke and retracted on the return stroke.

4. A film feed for motion picture apparatus, comprising a reciprocating slide, film-engaging fingers carried by the slide and movable into and out of engaging position, an abutment carried by the fingers, a rotatable driving element, a wrist pin on said element, a pitman connected at one end to the wrist pin, a connection between the other end of the pitman and the slide, a lever pivoted to the slide and connected at one end to the wrist pin and having at the other end an arcuate slot in which the aforesaid connection seats, and a cam on the last mentioned end of the lever engaging the aforesaid abutment to alternately advance and retract the film-engaging fingers.

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

GUSTAVE SCHMID.

Witnesses:
S. J. LEHRER,
H. G. BATCHELOR.