

No. 720,931.

PATENTED FEB. 17, 1903.

C. H. KAYSER.

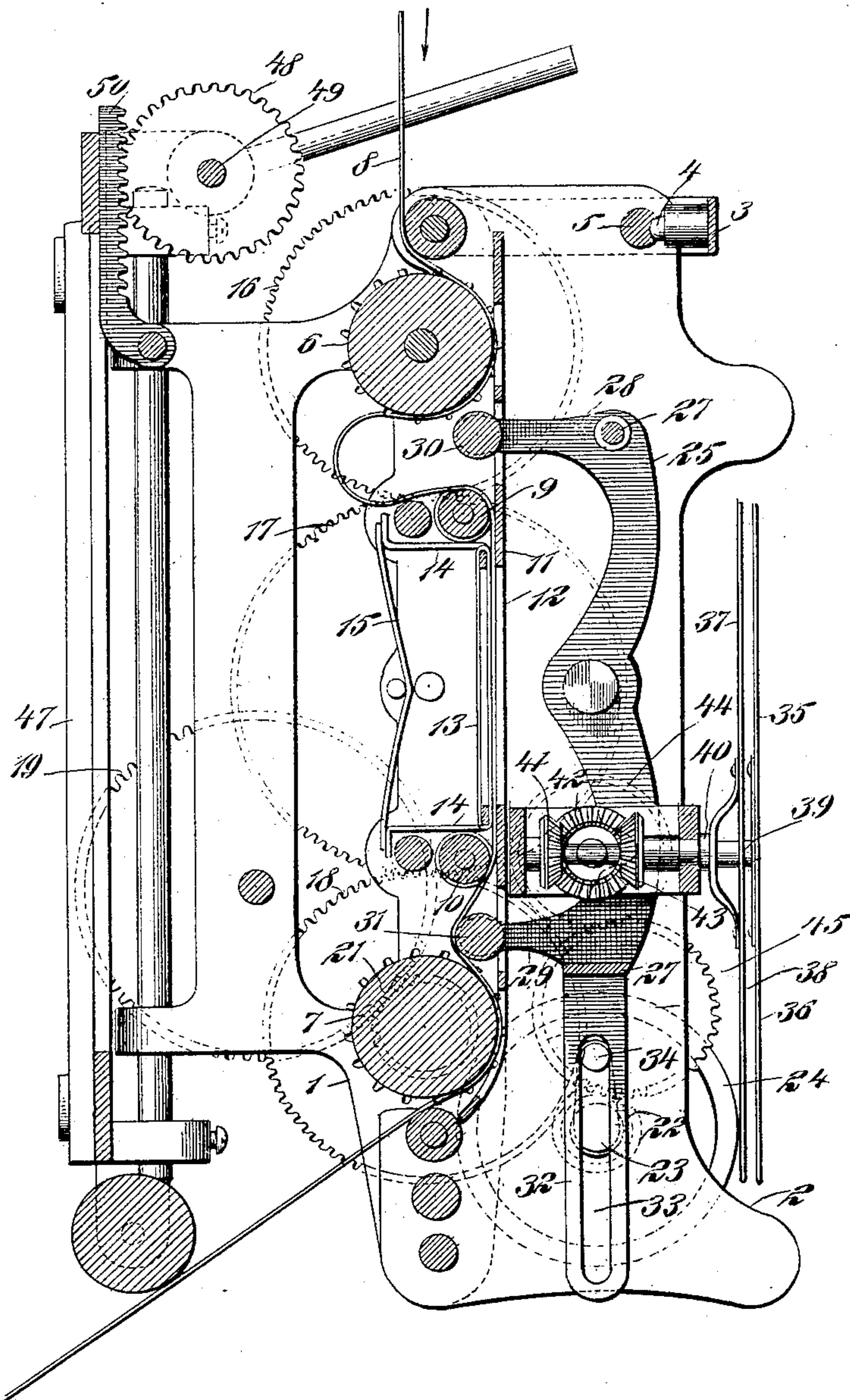
FEEDING MECHANISM FOR PICTURE BEARING STRIPS.

APPLICATION FILED MAY 14, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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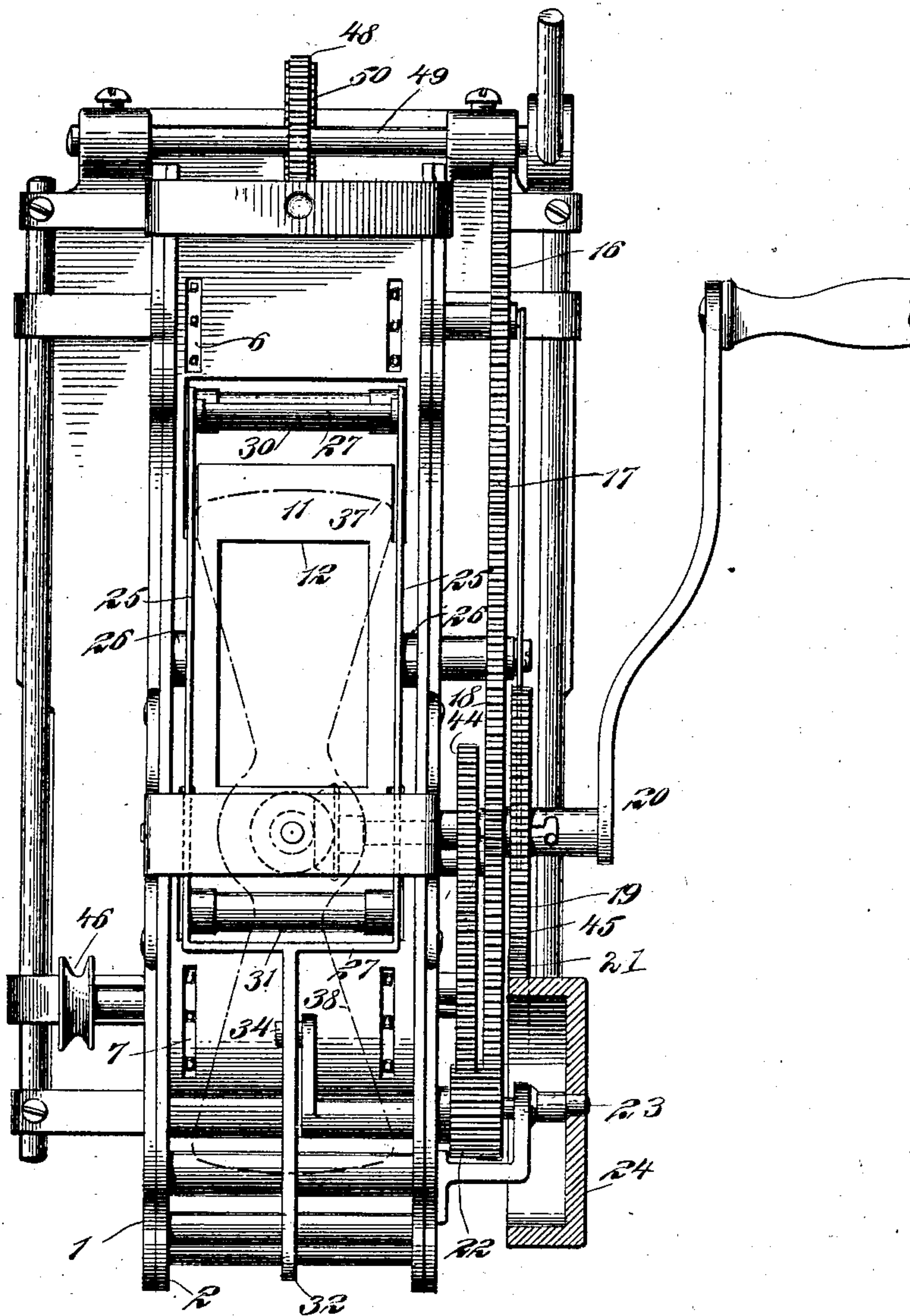
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APPLICATION FILED MAY 14, 1902.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 2.

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UNITED STATES PATENT OFFICE.

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FEEDING MECHANISM FOR PICTURE-BEARING STRIPS.

SPECIFICATION forming part of Letters Patent No. 720,931, dated February 17, 1903.

Application filed May 14, 1902. Serial No. 107,267. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. KAYSER, a citizen of the United States, and a resident of West Orange, in the county of Essex and State of New Jersey, have invented a new and Improved Feed Mechanism for Picture-Bearing Strips, of which the following is a full, clear, and exact description.

This invention relates to improvements in feeding mechanism for kinetoscopic and projecting machines. It is well known that in machines of this character the picture-strip is passed through very rapidly, there being a slight momentary stop of each section of the strip as it reaches a point opposite the lens for exposure or for projecting upon a screen. During the movements of the strip a fast vibratory movement is imparted to the strip, which gives a dazzling effect upon the screen, and consequently an imperfect picture. It is the object of my present invention, therefore, to provide a simple feeding device by means of which said difficulties will be overcome.

I will describe a strip-feed mechanism embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional elevation of a projecting-machine having a feeding mechanism embodying my invention applied thereto; and Fig. 2 is a rear elevation thereof, partly in section.

The frame of the machine comprises a fixed section 1 and a swinging section 2. As here shown, the swinging section is mounted to swing on the lower portion of the fixed section, and at its upper portion it may be secured by means of a yoke 3, pivoted to the fixed section and having lugs 4 for engaging in depressions in a cross-bar 5 on the swinging section of the frame. Arranged at the upper and lower ends, respectively, of the fixed section of the frame are the feeding-drums 6 7, these feeding-drums being provided with sprocket-teeth to engage in perforations in the edges of the strip 8 in the usual manner. Arranged below the drum 6 is an

idler-roller 9, and arranged above the drum 7 is an idler-roller 10. The strip 8 passes over these idler-rollers, which practically hold a portion of the strip in its exposed position. 55

A plate 11 is arranged in the swinging section of the frame and has an exposure-opening 12, and arranged forward of this exposure-opening is a yielding bed, over which the strip passes. This bed consists of a frame 13, having forwardly-extended arms 14 at its ends, which engage with plate-springs 15. 60

The drums 6 and 7 are to be rotated together and at equal rates of speed. On the shaft of the drum 6 is a gear-wheel 16, meshing with an idler gear-wheel 17, which engages with a gear-wheel 18 on the shaft of the drum 7. A driving-gear 19, to the shaft of which a crank 20 may be removably attached, engages with a pinion 21 on the shaft of the drum 7, and the gear 18 on said shaft meshes with a pinion 22 on a crank-shaft 23 for operating the feeding device, as will be hereinafter mentioned. On this crank-shaft 23 is a balance-wheel 24. 75

The feeding device comprises side bars 25, provided with trunnions 26, having bearings in the side portions of the frame-section 2. These trunnions are arranged at the center, and the opposite ends of the side bars are connected by cross rods or bars 27, and arms 28 29 project forward, respectively, from the upper and lower ends of the frame. The opposite upper arms 28 are connected by a striking-bar 30, while the lower opposite arms 29 are connected by a striking-bar 31. From the lower end of the feeding-frame a rod 32 extends, and this rod is provided with a longitudinal slot 33, into which the wrist-pin 34 of the crank-shaft 23 passes. It is obvious that upon the rotation of the crank-shaft a back-and-forth oscillating or swinging movement will be imparted to the swinging device, causing its ends to alternately engage with the strip at opposite sides or above and below the exposure-point. 85 90 95

Operating at the rear of the machine is a shutter consisting of oppositely-extended arms or blades 35 36 and oppositely-extended arms or blades 37 38. The pairs of blades are designed to operate in opposite directions, so as to quickly make and break the expo- 100

sure. The blades 35 36 are mounted on a shaft 39, which passes through a tubular shaft 40, upon which the blades 37 and 38 are mounted. On the inner end of the shaft 39 is a miter-pinion 41, meshing with a miter-gear 42, and this miter-gear 42 also meshes with a miter-pinion 43 on the tubular shaft 40. As these pinions engage with opposite sides of the gear 42, it is obvious that the shafts will be rotated in the opposite directions during the movement of said gear. On the shaft of the gear 42 is a gear-wheel 44, meshing with an idler gear-wheel 45, which engages with the pinion 22. Therefore the shutter mechanism will be operated from the crank-shaft 23.

Instead of operating the machine manually or by means of the crank 20 it may be operated by a suitable motor having a band connection with a pulley 46 on the shaft of one of the feeding-drums. As here shown, it is mounted on the shaft of the lower feeding-drum 7.

At the front of the machine is the lens-carrying frame 47, which may be adjusted vertically by means of a gear-wheel 48 on a shaft 49 and meshing with a rack 50, attached to the fixed portion 1 of the machine-frame.

In operation the feeding-drums 6 and 7 will be in constant rotation; but, as before stated, there must be a momentary stop of a section of the strip at the exposure-point, and therefore there is a slack between the two feeding-drums. This momentary stop is well illustrated in Fig. 1, in which it will be seen that the upper bar 30 after moving the strip-section between the drum 6 and the idler 9 inward is about to operate to take up said slack by moving the strip-section between the drum 7 and the idler 10 forward. This movement will of course draw the exposed section of the strip downward and at the same time draw the next picture or exposure-surface into line with the lens. The frame 13 will hold the strip yieldingly against the plate 11, and a quick and positive movement of the feeding device will cause a movement of the strip over said cushion or frame without causing a vibratory motion of the section of the strip.

While I may use the ordinary transparent film, I may and in some instances prefer to use a strip of paper or similar substance, and therefore I have used the term "picture-bearing strip" for the part 8. When the paper or like non-transparent material is used, the light will be reflected from the front instead of through the material.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a moving-picture machine, a picture-strip feeder comprising a centrally-pivoted frame operating by rocking motion to engage with a strip alternately at opposite sides of the point of exposure, substantially as specified.

2. In a moving-picture machine, a strip-feeder, comprising a centrally-pivoted rocking frame having end bars for engaging with the strip alternately above and below the point of exposure, substantially as specified.

3. In a strip-feeding mechanism, feeding-drums arranged respectively above and below the point of exposure, gear connections between said drums, a centrally-pivoted rocking frame adapted to alternately engage its ends with the strip adjacent to the feeding-drums, and gear connections between said frame and the driving mechanism for the drums, substantially as specified.

4. In a strip-feeding mechanism, feeding-drums, idler-rollers arranged adjacent to the feeding-drums, a plate forward of said rollers and having an exposure-opening, a spring-pressed frame forward of said plate, a feeder-frame mounted to rock and comprising side bars, forwardly-extended arms at the ends of said side bars, cross-bars connecting opposite arms, a crank-shaft, and a bar extended from the feeder-frame and provided with a slot into which the wrist-pin of the crank-shaft passes, substantially as specified.

5. In a strip-feeding mechanism, a strip-feeding device pivoted between its ends and having back-and-forth oscillating movement and engaging the strip alternately above and below the point of exposure, means for causing said movement, and a shutter operated from said means, substantially as specified.

6. In a projecting-machine, a frame comprising a fixed section and a section mounted to swing on the fixed section, feeding-drums mounted in the fixed section, and a rocking strip-feeding device carried in the swinging section and operating to alternately engage the strip above and below the point of exposure, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. KAYSER.

Witnesses:

JNO. M. RITTER,
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