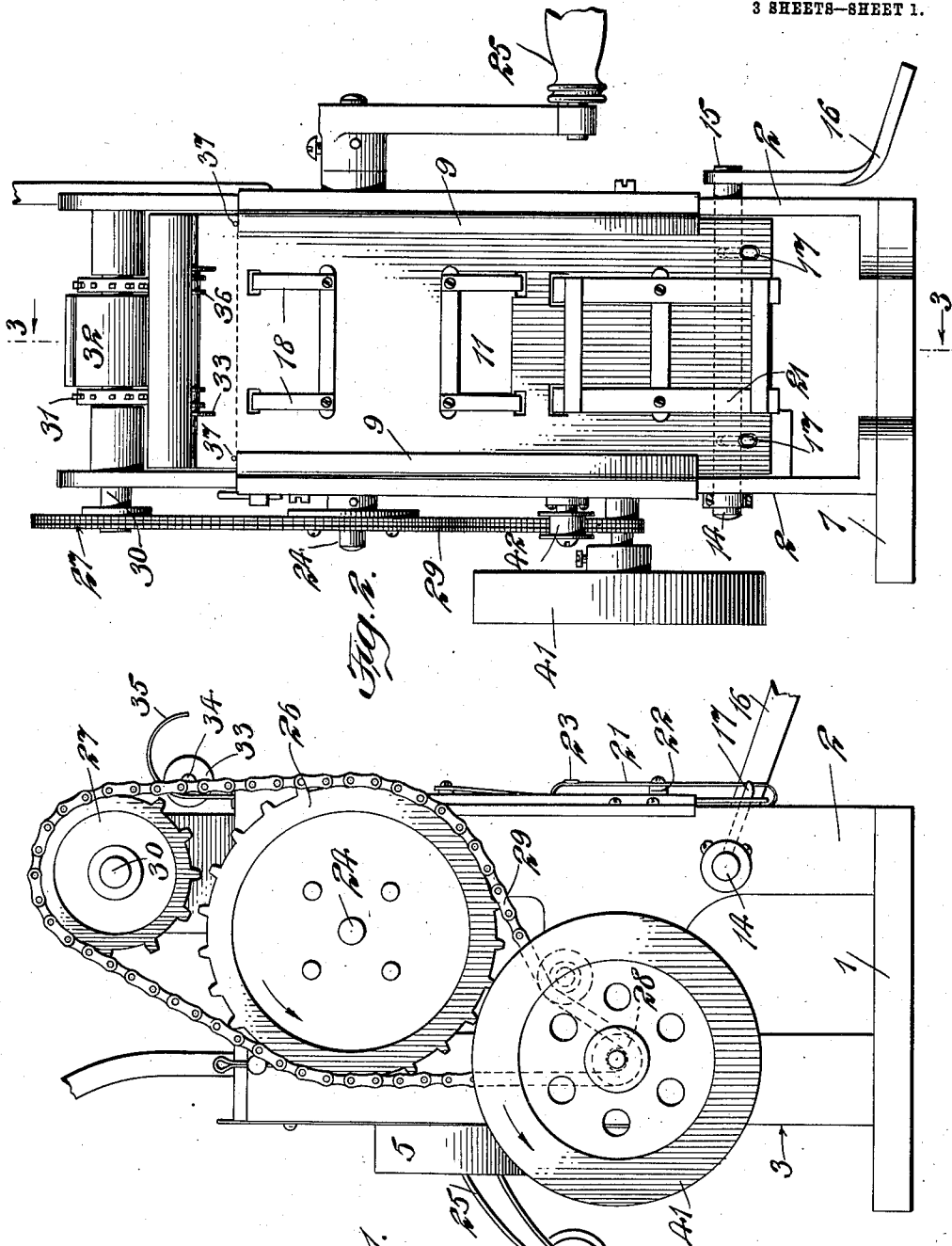


C. E. DRESSLER & F. KLETT.
MOVING PICTURE MACHINE.
APPLICATION FILED JULY 29, 1908.

963,531.

Patented July 5, 1910.

3 SHEETS—SHEET 1.



WITNESSES
Julius H. Smith
T. W. Springmeyer

Fig. 1.

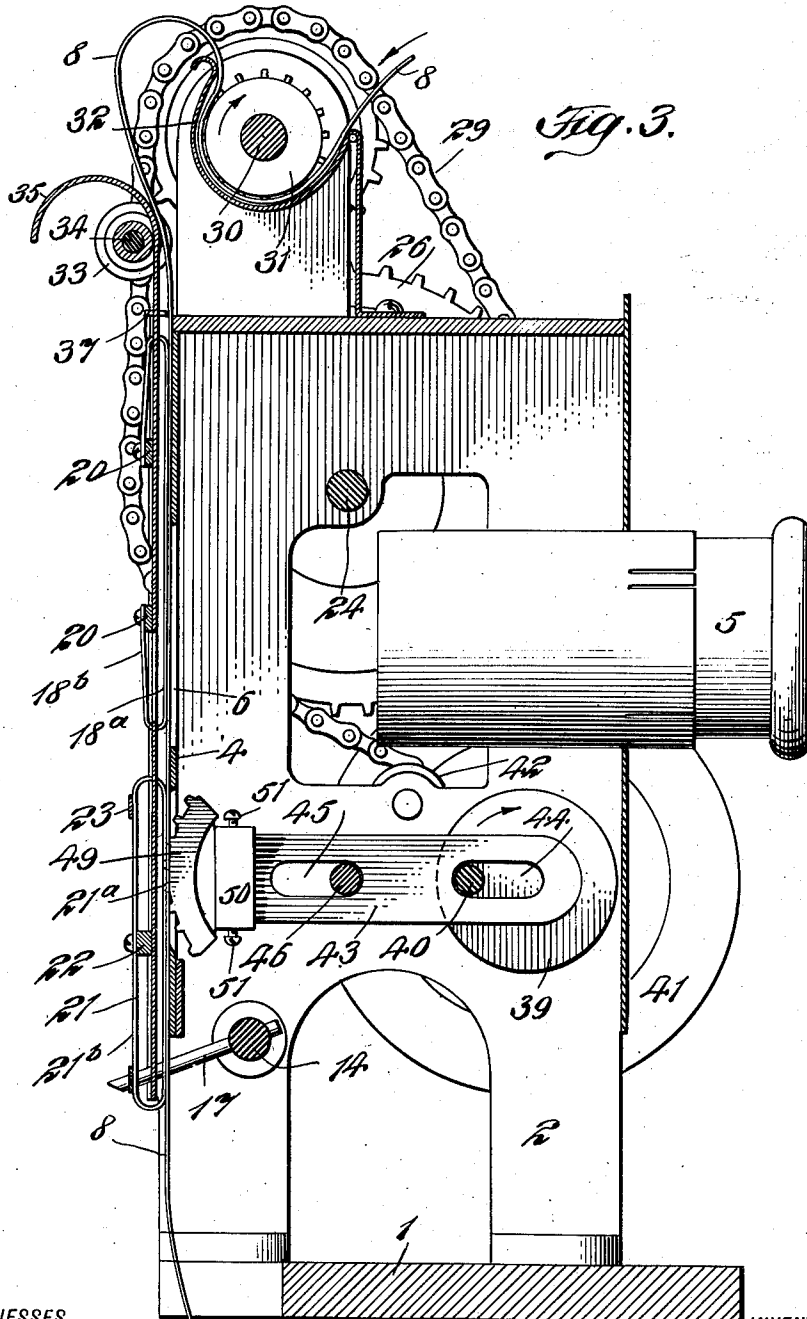
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 6.

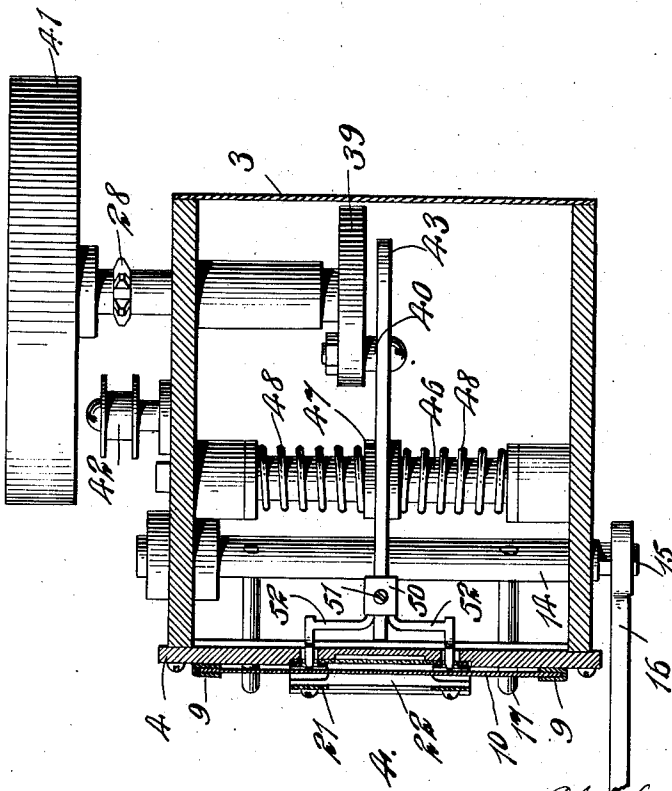
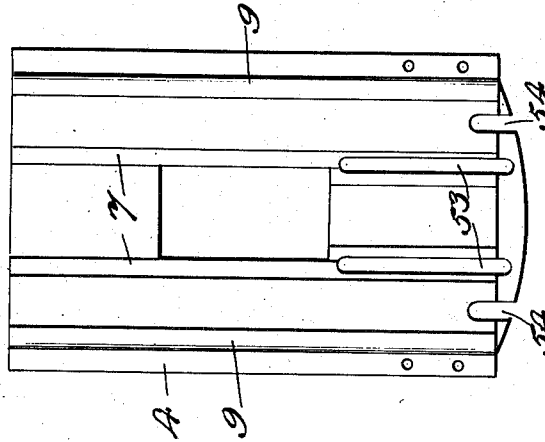
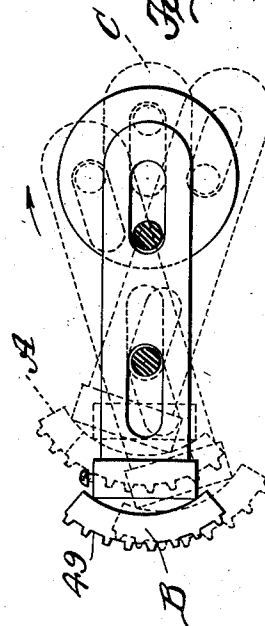


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

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MOVING-PICTURE MACHINE.

963,531.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed July 29, 1908. Serial No. 445,888.

To all whom it may concern:

Be it known that we, CHARLES E. DRESSLER, a citizen of the United States, and a resident of the city, county, and State of New York, and FRED KLETT, a citizen of the United States, and a resident of the city of Weehawken, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Moving-Picture Machines, of which the following is a specification.

Our present invention relates to an improved moving picture machine having objects and advantages which will appear from an understanding of the annexed specification and drawings.

In the drawings which show only one of the forms which our improvements may take, Figure 1 is a side elevation of a moving picture machine embodying our improvements, showing parts thereof broken away; Fig. 2 is a rear elevation of the same, likewise showing parts broken away; Fig. 3 is a vertical section, partly in elevation, on the line 3—3 in Fig. 2 looking in the direction of the arrow; Fig. 4 is a horizontal section partly in plan on the line 4—4 in Fig. 3; Fig. 5 is a diagrammatic view of a detail; and Fig. 6 is an elevation of the film track plate detached from the machine.

Describing now our improvements with particular reference to the devices of the drawings, and reserving it to the claims to point out the novel features, the machine shown comprises a base or foot 1 with side frames 2, front 3, and back 4, said back being hereinafter referred to as the film track plate.

Projecting out from the front 3 of the machine is any usual or preferred lens or projecting device 5. At the rear of said device is an opening 6 in the film track plate, said opening in width being adapted to the width of the film and having a vertical height greater than the height of the individual pictures, preferably considerably greater, for a purpose hereinafter described. The film track plate 4 has a recess or track within which the film travels, extending vertically across the plate. The opening 6 previously referred to is located in the bottom of this recess of which the sides 7 are best seen in Figs. 4 and 6 and serve to guide the film at its edges.

In the particular machine shown the film,

designated 8, is received from above and travels down through the film track and outwardly from its bottom. The driving mechanism for the film will be subsequently described.

On the rear side of the film track plate are vertically extending guides 9 which receive slidably between them a slide 10 (compare Figs. 2 and 4). Said slide has a window 11, adapted as the slide is adjusted up and down relative to the film track plate and its opening 6, to vary or adjust the up and down location of the pictures as projected on the screen. Means for effecting this up and down adjustment of the slide 10 and its window comprises rock-shaft 14 journaled across between the side frames 2 of the machine, said shaft having a squared end 15 to receive an operating handle 16 and centrally having projecting pins 17, the ends of which are loosely received in suitable openings in the slide 10, whereby, turning the handle in one direction or the other swings the pins through an arc to correspondingly raise or lower the slide and consequently its window, relative to the opening 6 in the film track plate.

To yieldingly bear against the edges of the film and retain same in the recess of the track-plate are springs carried by the slide 10. In the particular devices shown there are two sets of these springs (compare Figs. 2 and 3) the upper set comprising a pair of leaf springs 18, the middle portions 18^a of which are on the inner face of the slide and run vertically up and down to bear respectively in yielding fashion on the edges of the film, whereas the free ends 18^b of said springs extend through suitable openings 19 in the slide and may be secured by screws as shown to cross-pieces 20 on said slide. The lower set of springs likewise comprise leaf-springs 21 the middle portions 21^a of which as before are at the inner side of the slide to bear against the respective edges of the film with their free ends 21^b in this case connected around or through the slide and meeting centrally, where they are secured together to a single cross bar 22 on the outer face of the slide. It will be understood that of course these details of construction may be varied as for example cross-pieces 23 can be provided connecting across the lower set of springs at the outer face of the slide to hold said springs more positively in spaced

relation to bear properly on the edges of the film.

The aforesaid springs 18 and 21 carried, as they are, along with the vertically adjustable slide and pressing yieldingly on the moving film, serve not only to hold said film recessed in the track of the track-plate, but also to uphold the window-bearing slide in the given position of adjustment which it may have from the operation previously described of the handle 16.

Next describing the operating means for the film, in the first place a shaft 24 is provided journaled across the sides 2 of the casing at the upper part thereof, having a crank or handle 25 adapted to rotate the shaft and from it, as will hereinafter appear, to progress the film across the window, said shaft further carrying at its free end an exterior gear wheel 26, conveniently called the driving gear wheel or sprocket. Above and below this driving sprocket 26 are two other sprockets 27 and 28, all being connected by a common chain 29. The upper sprocket 27 is mounted on a shaft 30 suitably journaled across the side frames and having centrally within the casing a pair of toothed disks 31, the teeth of which respectively are adapted to engage the film openings and to drive the film from the rotation of the disks.

An inspection of Fig. 3 shows that the film is guided under and around the toothed disks 31 by a guard or guide 32 suitably supported in any preferred manner from the frame or casing. The delivery film reel from which the film comes is not shown as forming no part of our present invention. Likewise it may be said that the take-on reel and similarly irrelevant parts have for the same reason been omitted. The film thence passes down between the slide 10 and the track plate 4 as already described, being guided above by the sides or flanges 33 of a roller 34 journaled across between the side frames at the rear of the slide 10, which is here vertically slotted to permit said flanges 33 of the roller to project through and beyond the inner side of the slide to receive between them and guide the travel of the film down into the track in the track plate.

It will be noted that the slide 10 may have its upper end curved at 35 as shown to conveniently direct the down-passage of the film, especially when threading it into operative position in the machine. Furthermore it may be noted that the roller 34 may have beads 36 against which the outer side of the slide 10 at its top may bear as shown in Fig. 3. Pins 37 are shown on the slide 10 in position to contact with the tops of the guides 9 to uphold said slide from passing below the lowermost position which it is ever necessary for it to have.

To take up the film delivered by the driv-

ing disks 31 and to intermittently progress it across the window is mechanism as follows. In the first place mounted on the same shaft 38 as the lower sprocket 28 is a disk 39 carrying a crank pin 40, said shaft also carrying, as may be mentioned in passing, a fly-wheel 41. Similarly it may be mentioned that a roller 42 may be provided journaled on the stud from the frame in position to receive over it the travel of the chain and to act as a chain-tightening roller. Operated from the crank pin 40 is an arm 43, having a longitudinal slot 44 at its end to receive said crank pin and having further a longitudinal slot 45 at or toward its center to receive through it a horizontally extending rod 46, connected across between the side frames of the machine as best shown in Fig. 4, said rod acting as a fulcrum for said arm 43. Washers 47 may be provided on either side of the arm 43, located on the rod 46 and yieldingly pressed against the sides of the arm by coil springs 48 surrounding the rod. At the end of the arm 43 toward the film are a pair of toothed sectors 49 spaced apart and directed to engage the side openings in the film. The connection between the sectors and the arm may be an adjustable one, comprising a sleeve 50 slidable on the arm and having set screws 51 to hold it in fixed relation therewith, said sleeve having fingers 52 extending from either side which connect with and directly support the sectors.

That the teeth of the sectors may engage the film openings, the film track plate 4 is vertically slotted at 53 (see Fig. 6), as are also the film contacting portions of the lower set of springs 21. It may here be remarked that the other slots 54 in the plate 4 are to provide for the vertical play of the pins 17.

The operation of the just described devices is as follows: When the handle 25 is turned in clockwise direction, it drives the main and secondary sprockets in the direction of the arrows in the various figures, and the crank pin 40 rotates with its disk in the direction of the arrow in Fig. 3. The effect is to operate the toothed sectors 49 to give the film as intermittent progressive movement, said movement comprising for each complete rotation of the crank pin a quick downward swing of the sectors in driving contact with the film followed by a period continuing for the rest of the rotation of the crank pin during which the sectors are out of contact with the film and are being returned into initial position for their next downward swing. This is indicated although incompletely in Fig. 5, wherein the position A of the sectors represents their initial or topmost position just before beginning their downward swing; B represents an intermediate position in the course of said downward swing; and C represents a position in which the sectors have been

withdrawn into their rear-most position, prior to their being delivered forward by the crank-pin into initial position A.

By varying the lengths of the slots in the arm 43, the relative durations of the period of downward or operative swing of the sectors and of their period of non-contact with the film can be varied, so that for one complete rotation of the crank pin, the former or operative period can be made relatively short and therefore correspondingly rapid, and the non-operative period relatively long, whereby the use of the shutter, ordinarily required in moving picture machines, can be dispensed with.

The springs 48 serve to hold the arm 43 yieldingly between them in any given position wherein it may be left by the operation of crank pin 40.

Having thus described our invention, what we claim is:

1. In a moving picture machine, the combination of means adapted to intermittently feed the film in one direction, said means comprising teeth adapted to engage the film openings, an arm supporting said teeth at one end, said arm having a longitudinally extending central slot and another longitudinally extending slot toward its other end, a rod extending through the central slot and acting as a fulcrum for the arm, and a crank the pin of which is located in the end slot in the arm.

2. In a moving picture machine, the combination of means adapted to intermittently feed the film in one direction, said means comprising teeth adapted to engage the film openings, an arm supporting said teeth at one end, said arm having a longitudinally extending slot toward its other end, a rod extending through the central slot and acting as a fulcrum for the arm, a crank the pin of which is located in the end slot in the arm; and means operating yieldingly in lateral direction against the arm.

3. In a moving picture machine the combination of a main sprocket, handle-driven;

secondary sprockets chain-connected with the main sprocket; a toothed disk rotatable with one of said secondary sprockets having teeth adapted to engage the film openings to deliver the film toward the window of the machine; a crank pin rotatable with the other secondary sprocket; an arm having an end slot receiving said crank pin and further having a central slot, and a toothed sector at its other end, the teeth of said sector adapted to engage the openings in the film on the receiving or take-up side of the window; and a rod extending through the central slot in the arm and acting as a fulcrum.

4. In a moving picture machine, the combination of means adapted to intermittently feed the film in one direction, said means comprising an oscillating film-member having one end for intermittently contacting with and driving the film and having at its other end longitudinally spaced apart stops, a member having sliding connection with the middle portion of the film-member and acting as a fulcrum for said member, and a crank operating between said stops.

5. In a moving picture machine, the combination of means adapted to intermittently feed the film in one direction, said means comprising an oscillating film-member having one end for intermittently contacting with and driving the film and having at its other end longitudinally spaced apart stops, a member having sliding connection with the middle portion of the film-member and acting as a fulcrum for said member, a crank operating between said stops, and means acting on the film-member preventing sliding thereof relative to its fulcrum-member except when it is crank-driven.

In testimony whereof we have signed our names to the foregoing specification in the presence of two subscribing witnesses.

CHARLES E. DRESSLER.

FRED KLETT.

Witnesses as to both signatures:

MARY E. McCUE,

E. W. SCHERR, JR.