T. H. BLAIR.

KINETOSCOPE.

APPLICATION FILED NOV. 4, 1911.

1,108,122.

Patented Aug. 25, 1914.

2 SHEETS—SHEET 1.

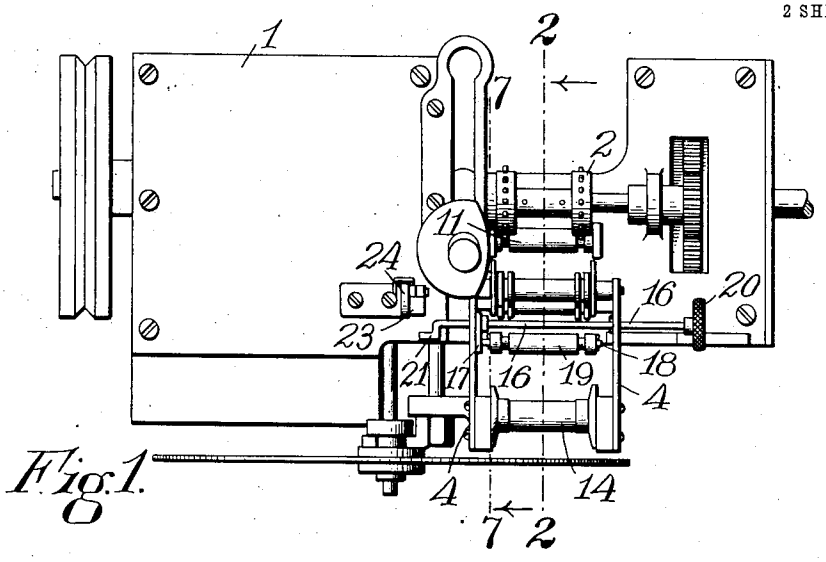


Fig. 1.

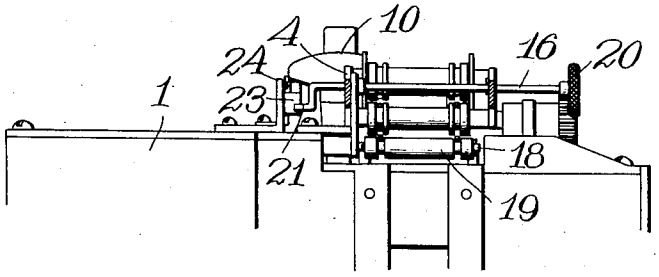


Fig. 6.

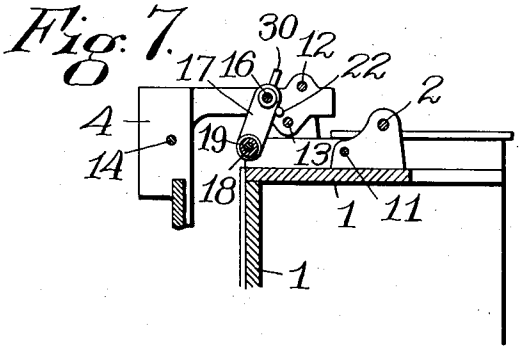


Fig. 7.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

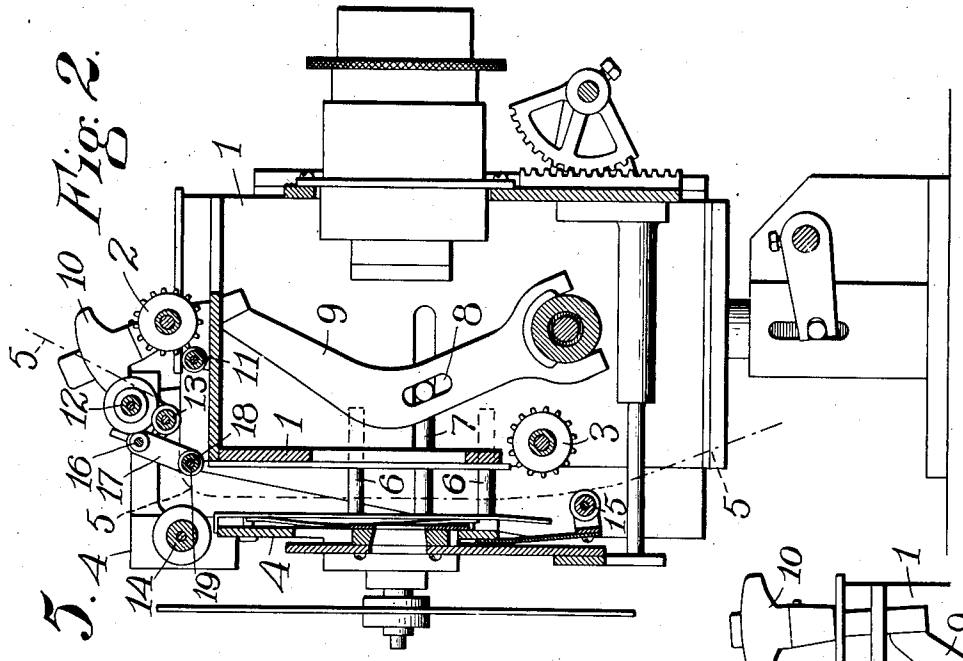


Fig. 4.

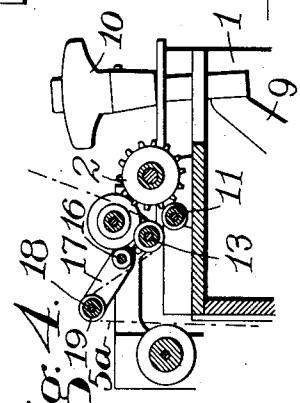


Fig. 5.

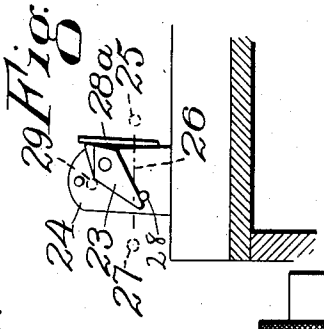
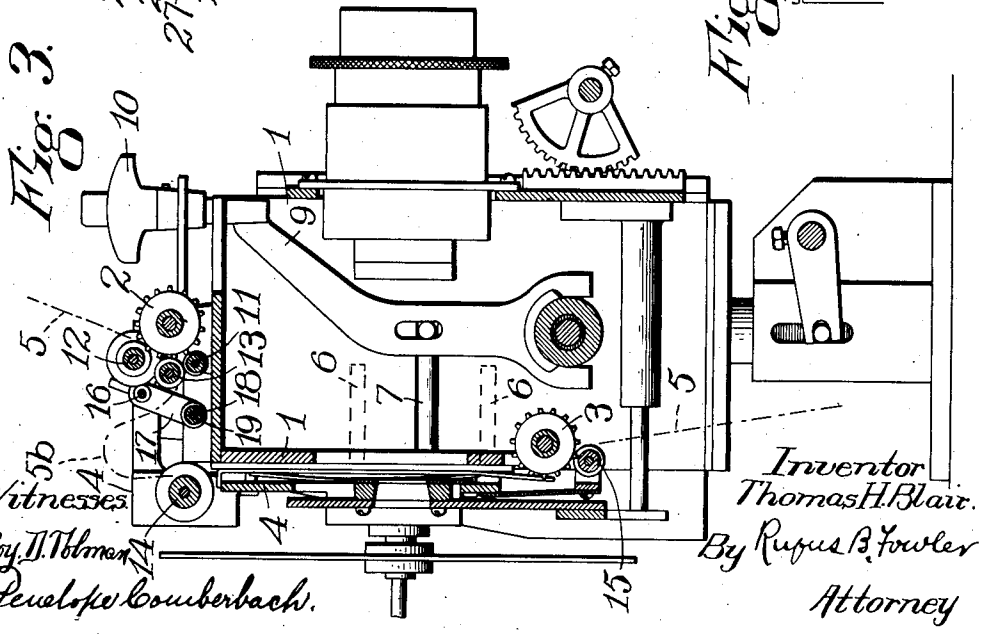


Fig. 3.



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UNITED STATES PATENT OFFICE.

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KINETOSCOPE.

1,108,122. Specification of Letters Patent. Patented Aug. 25, 1914.

Application filed November 4, 1911. Serial No. 658,490.

To all whom it may concern:

Be it known that I, THOMAS H. BLAIR, a citizen of the United States, residing at Northboro, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Kinetoscopes, of which the following is a specification, accompanied by drawings, forming a part of the same.

My invention relates to a kinetoscope having mechanism for the longitudinal movement of a film therethrough, comprising a sprocket wheel having a continuous motion for drawing the film from a coil and a second sprocket wheel having an intermittent motion by which the film is intermittently moved between the screen and a light opening.

The object of my invention is to provide means for forming a loop in the film between the continuously moving and the intermittently moving sprocket wheels.

I accomplish this object by means of the mechanism hereinafter described and illustrated in the accompanying drawings, in which—

Figure 1 is a top view of a kinetoscope embodying my invention. Fig. 2 is a vertical sectional view on the plane of the broken line 2—2, Fig. 1, and showing the film moving mechanism in its separated position to allow the film to be inserted in the machine. Fig. 3 is a similar sectional view to that shown in Fig. 2, but with the film moving mechanism in its operative position. Fig. 4 is a vertical sectional view through the loop forming mechanism on the plane of the broken line 2—2, Fig. 1. Fig. 5 is a detached side view of the switch block forming part of the loop forming mechanism. Fig. 6 is a front view of the loop forming mechanism. Fig. 7 is a sectional view of a portion of the loop forming mechanism shown on the plane of the broken line 7, Fig. 1.

Similar reference characters refer to similar parts in the different figures.

In the accompanying drawings I have shown so much of the mechanism of a kinetoscope as is necessary to illustrate the character and operation of my present invention.

Referring to the accompanying drawings, 1 denotes a casing inclosing the operative mechanism by which the film moving sprocket wheels are actuated, said operative mechanism not being herein described, nor shown in the drawings, as it may consist of any known type of mechanism usually employed in machines of this class for imparting a continuous rotary movement to a sprocket wheel 2 and an intermittent rotary movement to a sprocket wheel 3. At one side of the casing 1 is a framework 4 capable of being moved toward and away from the casing 1. In Fig. 2 the framework 4 is represented as moved away from the casing 1 in order to enable the film to be inserted in the machine in the position of the broken line 5. In the present instance the frame is mounted upon rods 6, 6 and a rod 7, which are capable of sliding in holes in the casing 1. The inner end of the rod 7 is bent at right angles and engages a slot 8 in a lever 9. The lever 9 is pivoted at its lower end and is provided at its upper end, which extends above the casing 1, with a knob or handle 10. When the film has been inserted into the position shown by the broken line 5, Fig. 2, the lever 9 is rocked into the position shown in Fig. 3, thereby moving the frame 4 toward the casing 1 and bringing the guiding and actuating mechanism for moving the film into operative position. The film actuating mechanism is shown in its operative position in Fig. 3 and it comprises the continuously rotating sprocket wheel 2, guide roll 11 and the intermittently rotating sprocket wheel 3, all journaled in bearings supported by the casing 1, and the guide rolls 12, 13, 14 and 15 journaled in the frame 4.

Journaled in the frame 4 is a shaft 16 to which is attached an arm 17 carrying a spindle 18 upon which is loosely journaled a roll 19. Upon one end of the shaft 16 I attach a milled head 20 to enable the shaft to be rotated by hand when desired. The opposite end of the shaft 16 is bent into the form of a crank 21. The radial arm 17 in its normal position rests against a pin 22 projecting from the frame 4, maintaining the roll 19 in the normal position shown in Fig. 2, 3, and 7. In the path of the crank 21 I pivotally support a switch block 23 upon a bracket 24 attached to the top of the casing 1. When the frame 4 is in the position shown in Fig. 3 with the film actuating mechanism in its operative position, the position of the crank 21 relative to the switch

block 23 is indicated by the broken line 25, Fig. 5. As the frame 4 is moved away from the casing 1 into the position shown in Fig. 2, the crank pin moves from the position indicated at 25 in the path indicated by the broken line 26 into the position indicated by the broken line 27 passing beneath the switch block 23, which is thereby lifted by the crank pin and allowed to fall by gravity after the crank pin has passed, aided by the pressure spring 28^a, into its normal position resting upon a pin 28 projecting from the bracket 24. In this position of the parts the film is carried beneath the roll 13, over the roll 19 and downward between the frame 4 and casing 1 and between the roll 15 and sprocket wheel 3 to a suitable winding mechanism, not shown. The frame 4 is then moved back against the casing 1 into the position shown in Fig. 3, bringing the film into engagement with the sprocket wheels 2 and 3. During the return movement of the frame toward the casing 1, the crank 21 will be carried from the position indicated by the broken line 27 to the position indicated by the broken line 25, Fig. 5, but instead of returning by the path indicated by the broken line 26 it will pass over the top of the switch block, as shown by the broken line 29, Fig. 5, causing the shaft 16 to be rocked to raise the roll 19 into the position shown in Fig. 4, thereby forming a loop in the film, as shown at 5^a, Fig. 4. As the crank pin clears the switch block 23, the arm 17 and roll 19 will fall by gravity into their normal position, as shown in Fig. 3, returning the crank pin to its initial position, as indicated by the broken line 25, Fig. 5, leaving a free loop in the film, as shown at 5^b, Fig. 3, of sufficient length to allow the film to be moved intermittently by the sprocket wheel 3 without imparting any tension to the film between the sprocket wheels 2 and 3. A pin 30 projecting from the radial arm 17 is arranged to contact with the pin 22 to prevent an excessive movement of the arm 17, which might be caused by the momentum of the arm due to the rapid movement of the frame 4. Between each intermittent movement of the sprocket wheel 3 the length of film required for the loop 5^b is supplied by the continuous movement of the sprocket wheel 2. The movements of the frame 4 necessary to insert the film and to bring the film actuating mechanism into operative position will, therefore, form a loop in the film of sufficient length to supply the intermittent movement of the sprocket wheel 3.

I do not wish to confine myself to the precise construction of the loop forming mechanism as herein described, as I am aware various modifications might be made without departing from the spirit of my invention, which consists in providing means for forming a loop in the film dependent upon some necessary action of the operator in applying film to the machine.

I claim—

1. In an apparatus of the class described, a stationary casing, a movable frame, mechanism for moving a film through the machine, part of said mechanism being supported by said casing and part by said movable frame, and means for forming a loop in the film actuated by the movement of said movable frame.

2. In an apparatus of the class described, mechanism for moving a film through the machine, a fixed support for part of said mechanism and a movable support for a part of said mechanism, a swinging member for forming a loop in the film, and means for actuating said swinging member by the movement of said movable support.

3. In an apparatus of the class described, a movable frame, a swinging member carried by said frame and extending beneath the film, and means for actuating said swinging member to form a loop in the film by the movement of said movable frame.

4. In an apparatus of the class described, a movable frame, a crank shaft journaled in said frame, a radial arm carried by said crank shaft, a roll carried by the free end of said arm, and means supported on the stationary part of the machine for rocking said crank shaft as said frame is moved.

5. In an apparatus of the class described, mechanism for moving a film through the machine, a rocking shaft, a swinging member carried by said shaft and extending beneath the film, and means for actuating said rocking shaft to form a loop in the film.

6. In an apparatus of the class described, means for moving the film through the machine, a movable frame, a loop forming member capable of being moved across the path of the film, and means for actuating said loop forming member by the movement of said movable frame.

7. In an apparatus of the class described, a mechanism for forming a loop in the film, comprising a rocking shaft, an arm attached to said shaft, means carried by said arm for forming a loop in the film, and means for imparting a limited rocking movement to said shaft.

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