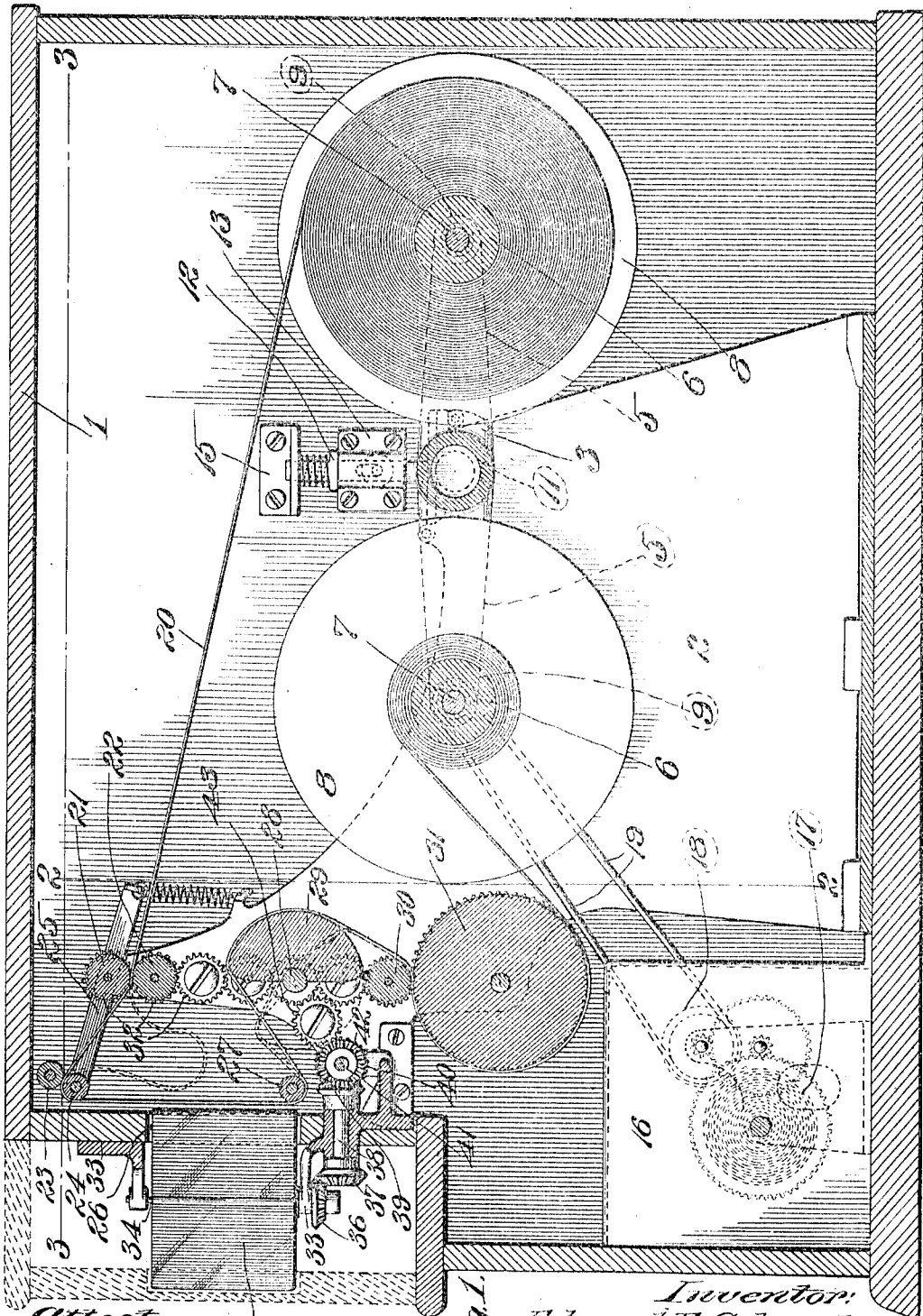


E. F. SCHRADER.
 PICTURE EXHIBITING MACHINE.
 APPLICATION FILED APR. 22, 1911.

1,066,536.

Patented July 8, 1913.

3 SHEETS—SHEET 1.



Attest:
Wm. H. H. H.
 E. F. Schrader

Fig. 1.

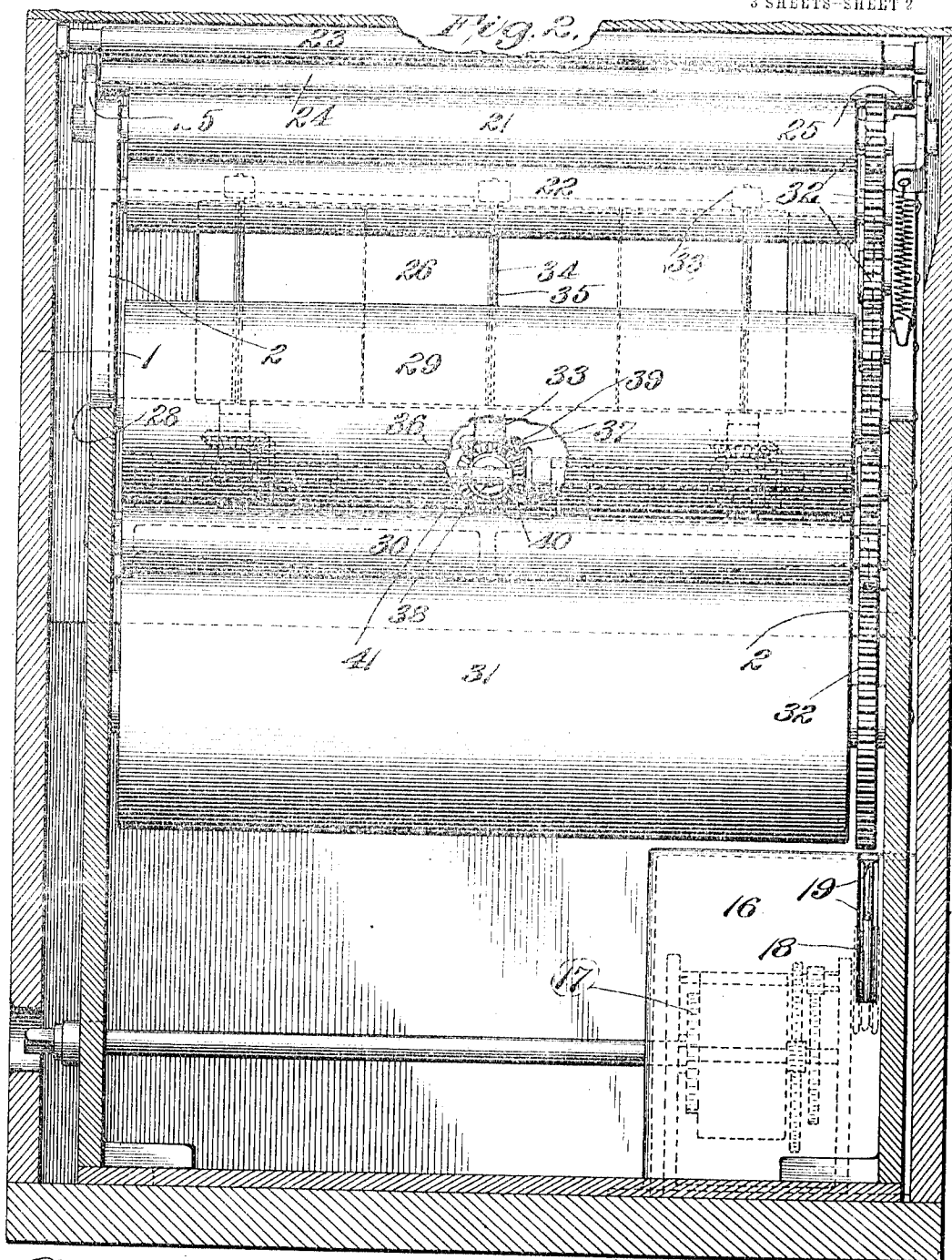
Inventor:
 Edward F. Schrader,
 by Higdon Longan atty

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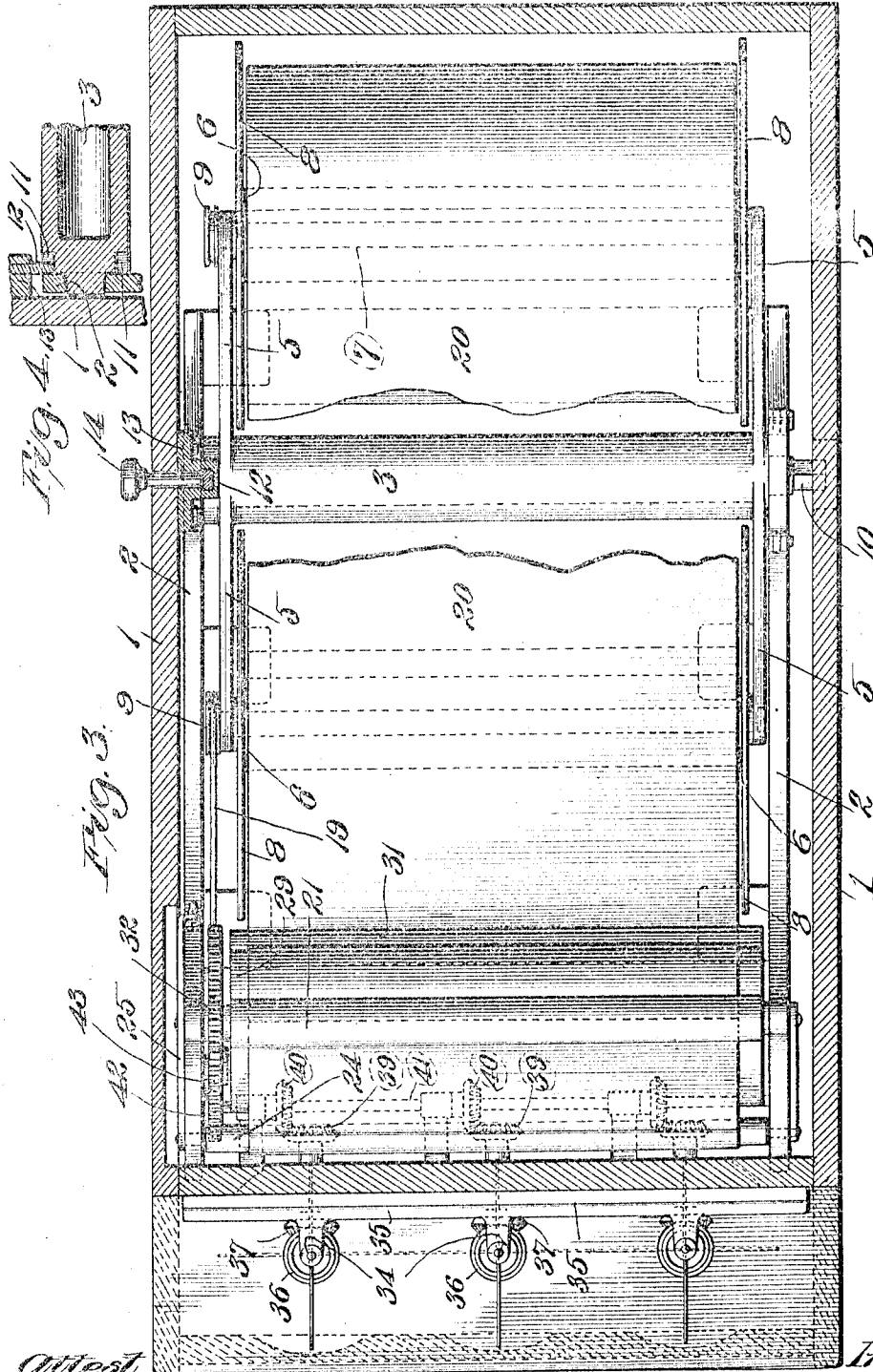
Inventor:
 Edward F. Schrader,
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3 SHEETS-SHEET 3.



Attest
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UNITED STATES PATENT OFFICE.

EDUARD F. SCHRADER, OF ST. LOUIS, MISSOURI.

PICTURE-EXHIBITING MACHINE.

1,066,536.

Specification of Letters Patent.

Patented July 8, 1913.

Application filed April 22, 1911. Serial No. 632,718.

To all whom it may concern:

Be it known that I, EDUARD F. SCHRADER, a citizen of Switzerland, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Picture-Exhibiting Machines, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in picture exhibiting machines and has for its object the construction of a simple, compact and portable machine for exhibiting pictures in rapid succession in which the pictures are mounted upon a continuous strip and the strip moved across a sight opening and momentarily stopped to afford a view of the individual pictures and then moved away from the sight opening, there being a shutter concealing the picture during the time of its movement.

With the above purposes in view my invention consists in certain novel features of construction and arrangement of parts as will be hereinafter more fully described, pointed out in the claims and illustrated by the accompanying drawings, in which—

Figure 1 is a longitudinal, sectional elevation of the complete machine; Fig. 2 is an enlarged, transverse, sectional elevation taken approximately on the line 2—2 of Fig. 1, a portion of one of the film rollers being broken away; Fig. 3 is a sectional plan taken on the line 3—3 of Fig. 1, a portion of the picture carrying sheet being broken away; and Fig. 4 is a detail, sectional fragmental view illustrating the means for locking the picture sheet carrying rollers in fixed positions.

Referring by numerals to the accompanying drawings: 1 designates the box or body portion of my improved machine, and 2 designates a suitable metallic frame which is secured in the box. The frame comprises a base portion and two side cheek plates in which there are journal bearings for all of the operative parts of the means for supporting and moving the picture carrying sheet.

3 designates a spool carrying frame comprising a central barrel having reduced portions which act as journals in the frame 2 and at each of its ends a pair of oppositely extending arms 5. Carried by each of the pairs of arms 5 is a spool which comprises

a cylinder 6 through which there is a shaft 7 to serve as a journal which is mounted in the ends of the arms 5, and at each end of the cylinder 6 there is secured a disk 8. Secured to each of the shafts 7 there is a sheave 9. At one end of the barrel 4 there is a noncircular extension 10 upon which a key may be secured for turning the spool carrying frame when it is desired to reverse the machine as will be made clear hereinafter. At the opposite end of the barrel 4 there are notches 11, diametrically opposite each other as clearly shown in Fig. 4, which coöperate with a bolt 12 secured in a housing 13 on the inside face of the box immediately over the barrel 4. This bolt is spring actuated in one direction and has secured thereto a handle 14 which extends through the side of the box 1 for the manipulation of the bolt.

15 designates a perforated angle iron secured to the inside of the box to serve as a guide for the bolt.

Located in the forward end of the box there is a casing 16 in which there is housed a spring motor 17. Driven by the motor is a sheave 18 which connects, by means of a belt 19, with one or the other of the sheaves 9.

20 designates the picture carrying sheet. This sheet may be constructed of any flexible material and is provided at each of its ends with a means, not shown, whereby it may be readily attached to or detached from one of the cylinders 6 of the spools.

The cheek plates of the frame, referred to, have vertical extensions at their forward ends, at the uppermost ends of which extensions are journaled direction rollers 21 and 22.

23 designates a guide roller journaled in the sides of the box 1, adjacent the forward wall of the box, which co-acts with a roller 24 carried upon a frame 25, spring actuated to normally bear the roller 24 against the roller 23.

26 designates a sight opening formed in the forward wall of the box, the film guiding rollers 23 and 24 being mounted in the box above the opening 26.

27 designates a direction roller mounted transversely of the box adjacent the lower end of the sight opening 26.

28 designates a shaft journaled in the cheek plates of the frame 2 and extending transversely of the machine upon which

there is mounted a roller 29 semi-cylindrical shape in cross section, and mounted in the cheek plates of the frame 2 immediately beneath the shaft 28 is a direction roller 30, and beneath the roller 30 is a roller 31.

32 designates a train of gearing carried by the frame 2 for the operation of the rollers 21, 22, 29, 30 and 31.

33 designates bearings which are secured to the front of the box above and below the sight opening 26. These bearings are arranged in vertically alining pairs, and mounted in each pair of vertically alining bearings is a shaft 34, and carried by each of the shafts is a pair of alining blades 35, the combined lengths of the blades being substantially the same length as the sight opening 26 so that, when the blades are in a position alining with the front of the box, the sight opening will be obscured. At the lower end of each shaft 34 is a bevel gear wheel 36 meshing with a wheel 37 carried by the bearings 33, the bevel gear wheels 37 being mounted on shafts 38 which extend through the bearings 33 and have at their inner ends bevel gear wheels 39.

40 designates bevel gear wheels in mesh with the wheels 39, all of which are mounted on a shaft 41 extending across the machine and supported in the frame 2.

Secured to the shaft 41 for its rotation is a gear wheel 42 which gear wheel meshes with a pinion 43 which meshes with one of the gear wheels in the train 32.

In order that dust or dirt may be excluded from the machine when not in use a suitable cover, such as is shown in dotted lines in Figs. 1 and 3, may be employed.

In the practical operation of the machine, assuming the parts to be assembled as shown in Fig. 1 and one end of the sheet connected with and partially wound upon the spool nearest the motor and the motor connected by means of the belt 19 with the spool for its rotation, the sheet will be moved and directed as follows: The motor is set in operation and drives the spool which draws the sheet 20 and winds it upon the cylinder. From the cylinder 6 the sheet 20 is passed partially around the roller 31 and to the rear of the roller 30, the frictional engagement of the sheet 20 being sufficient to rotate the roller 31 and, through the medium of the train of gears, all of the rollers about which the sheet is passed. From between the rollers 30 and 31 the sheet is passed over the semicylindrical roller 29 and from thence around the direction rollers 27 and 24 immediately to the rear of the sight opening. From between the rollers 24 and 23 the sheet is directed between the rollers 21 and 22 and from thence to the other of the spools having the cylinders 6. By reason of the shape of the semicylindrical roller 29

the sheet is drawn intermittently, and in order that the least strain possible be put upon the sheet the sheet at times is held against movement between the rollers 23 and 24, and when being thus held the rollers 21 and 22 advance the sheet to the position shown in dotted lines in Fig. 1. The speed of rotation of the rollers 21 and 22 is timed relative the speed of rotation of the semicylindrical roller 29 so that, as the roller 29 is in the position shown in dotted lines, the rollers 21 and 22 will present the slack shown by dotted lines. Then, when the roller 29 is brought to the position shown in full lines, this slack is taken up. Thus an intermittent motion is given to the sheet as required to accomplish the desired result which is a movement of the pictures over the sight opening and then stopping the sheet momentarily to afford a view of the pictures.

In order that the pictures may be wholly obscured while being drawn across the sight opening the shutters, comprising the blades 35, are rotated to a position in alinement with each other. In this manner all of the sheet is drawn from the right hand spool on to the left hand spool. Now, when it is desired to reverse the machine the end of the sheet is detached from the right hand spool, the bolt 12 released from the barrel 4 and the frame 3 rotated end for end, passing the filled spool to the right hand. The loose end of the film is then passed through its proper course between the directing rollers and again secured to the left hand spool, it being understood, of course, that the belt 19 must be removed and replaced at each reversal of the machine. This reversing of the machine is accomplished by a key which is inserted through an opening in the side of the box upon the squared end 10 of the journal supporting the frame 3.

I claim:

1. In a machine of the class described, a bodily reversible frame, rotatable spools carried by said frame, a sheet having pictures on both its faces carried by said spools, means for holding the frame in different set positions, a box having a sight opening therethrough, a plurality of direction rollers arranged to direct the sheet to the rear of said sight opening, a motor for moving one of the spools, a semicylindrical roller acting upon the sheet to impart an intermittent motion to the sheet, one pair of said directing rollers arranged to grip and stop the motion of a portion of the sheet, another pair of said rollers arranged to be driven to cause a slack in the sheet, and shutters arranged to be operated to cut off a view through the sight opening at times when the portion of the sheet opposite the sight opening is moved.

2. In a machine of the class described, a

box having a sight opening therein, a motor, a frame, spools carried by said frame, means whereby the frame may be reversed and held in different set positions, means for detachably connecting the motor with either of said spools, a sheet having pictures on both its faces and arranged to be wound upon said spools, fixed direction rollers adjacent the sight opening, a spring held direction roller, a pair of driven rollers, a semicylindrical roller arranged to impart an intermittent motion to the sheet, the spring held

roller and said driven rollers arranged to form a slack in the sheet at times, and shutters arranged to automatically close the sight opening when the sheet is moved relative to the sight opening. 15

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

EDUARD F. SCHRADER.

Witnesses:

E. L. WALLACE,
N. G. BUTLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."