

No. 892,547.

PATENTED JULY 7, 1908

J. J. PINK.
LIGHT SHIELD FOR MOVING PICTURE MACHINES.
APPLICATION FILED OCT. 8, 1927.

APPLICATION FILED OCT. 2, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

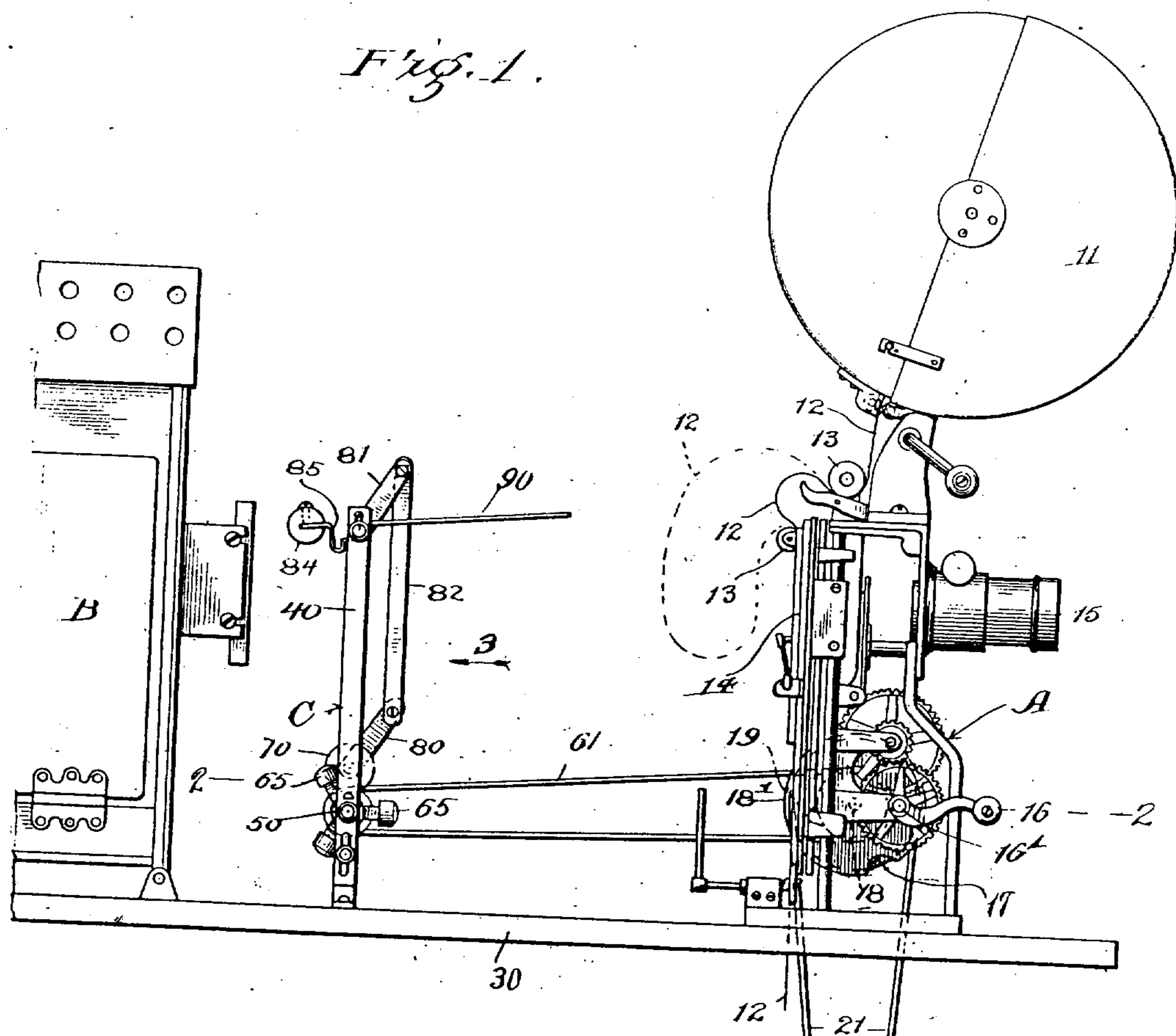
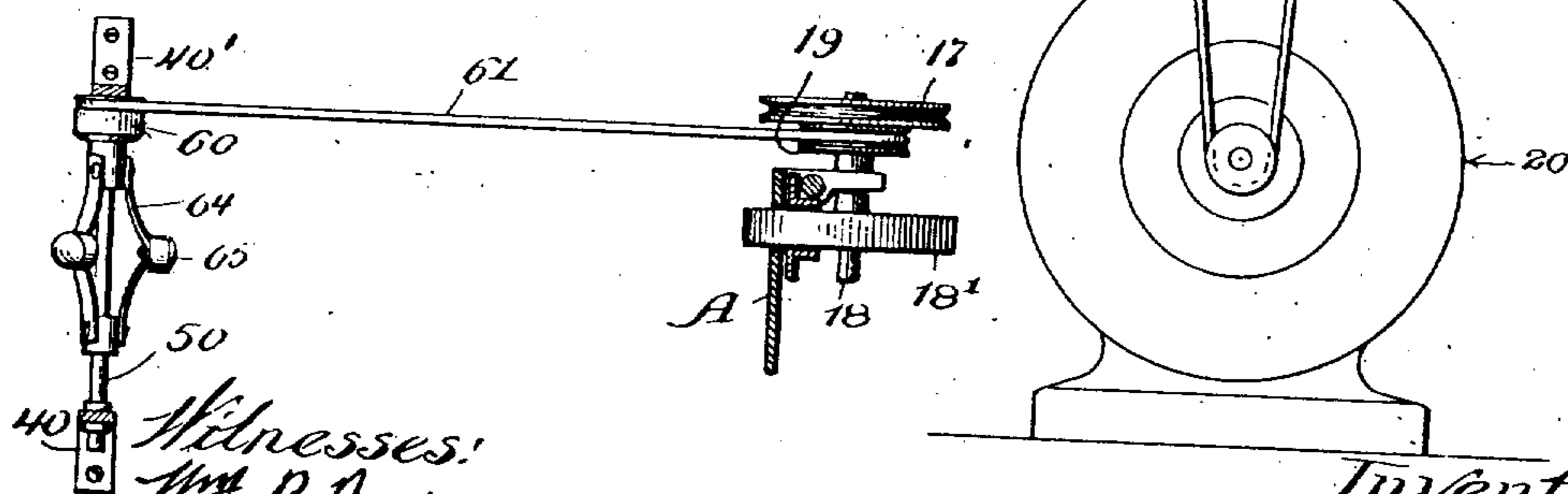



Fig. 2.



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2 SHEETS—SHEET 2

Fig. 3.

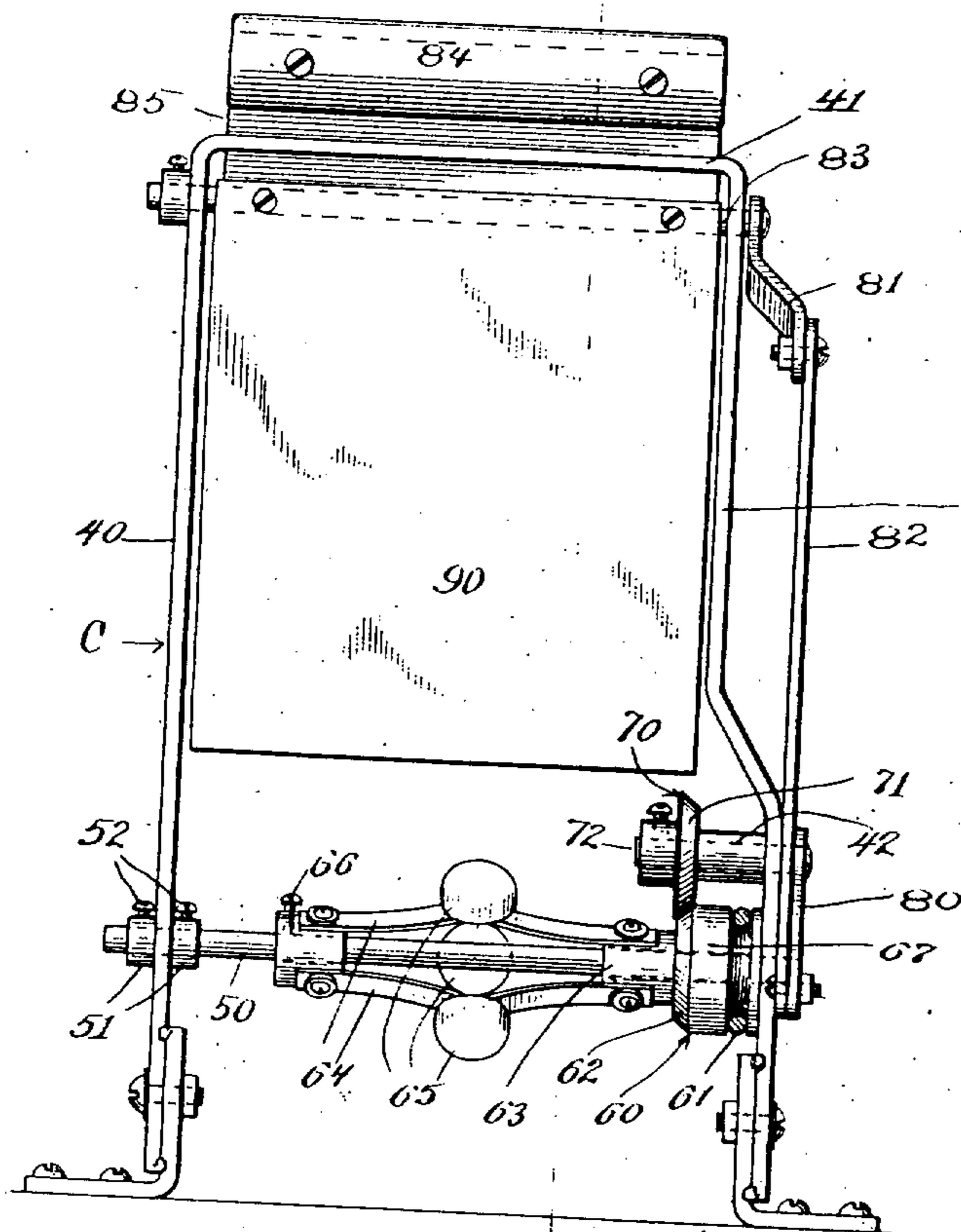


Fig. 4.

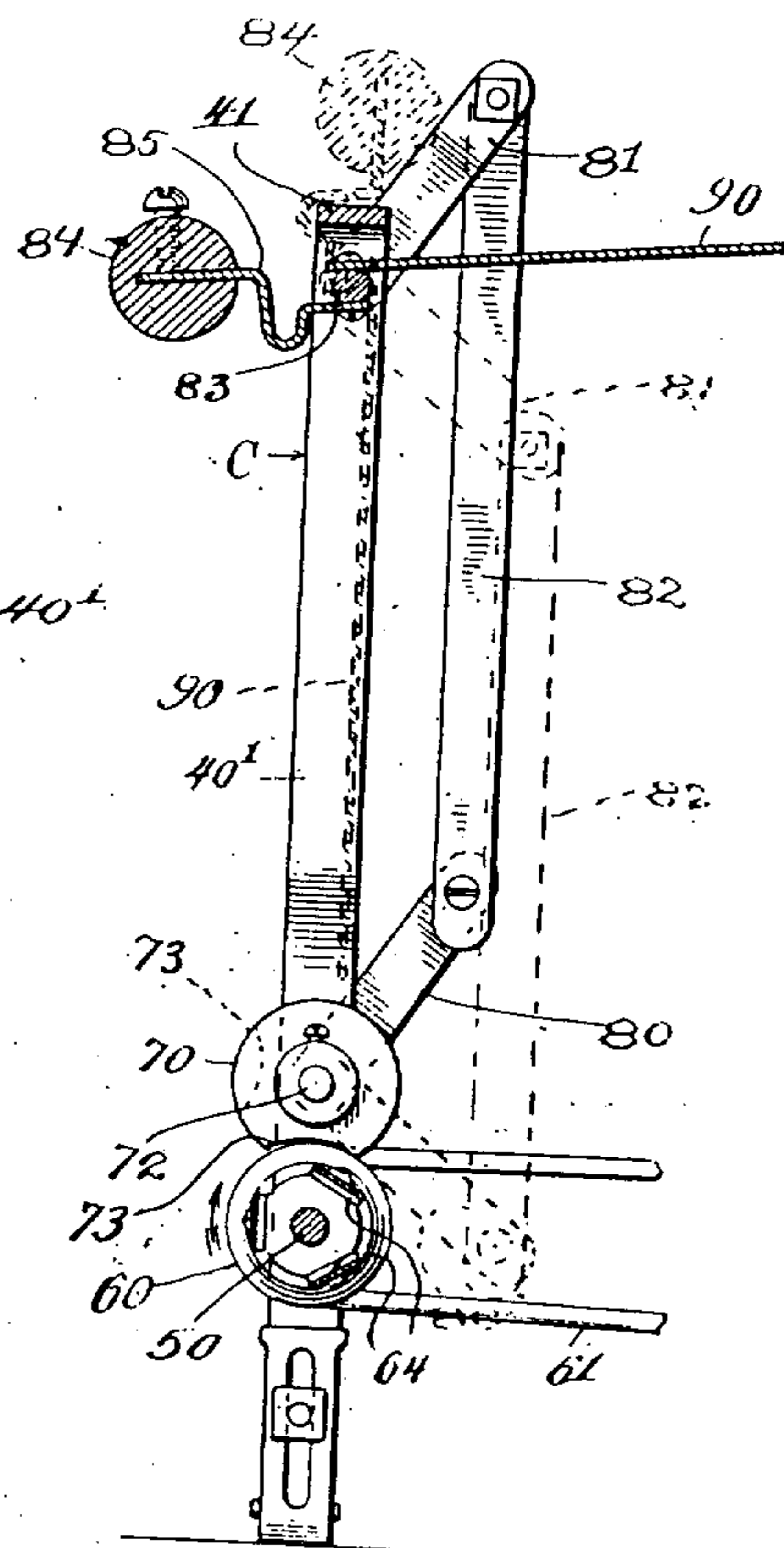


Fig. 5.

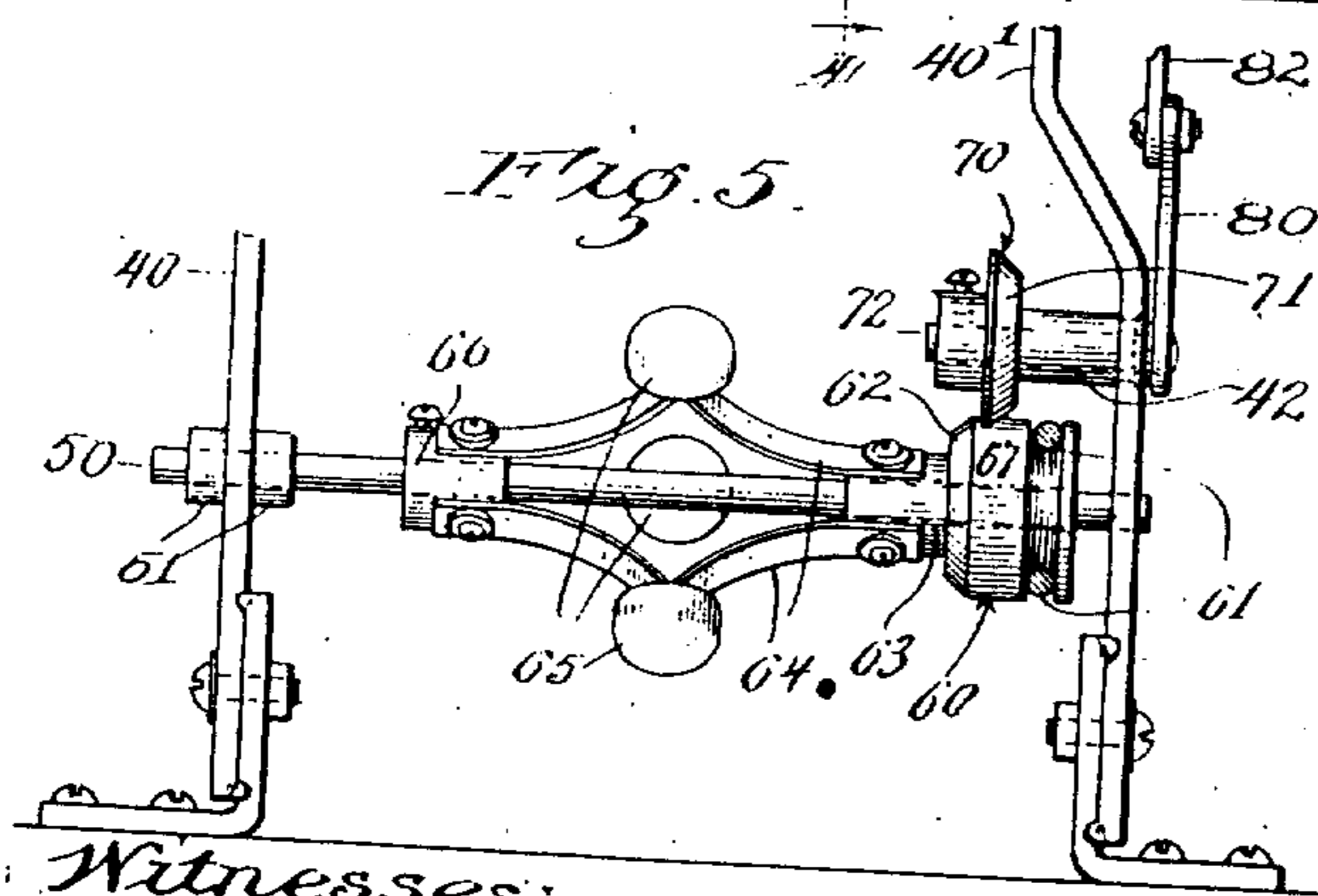


Fig. 6.

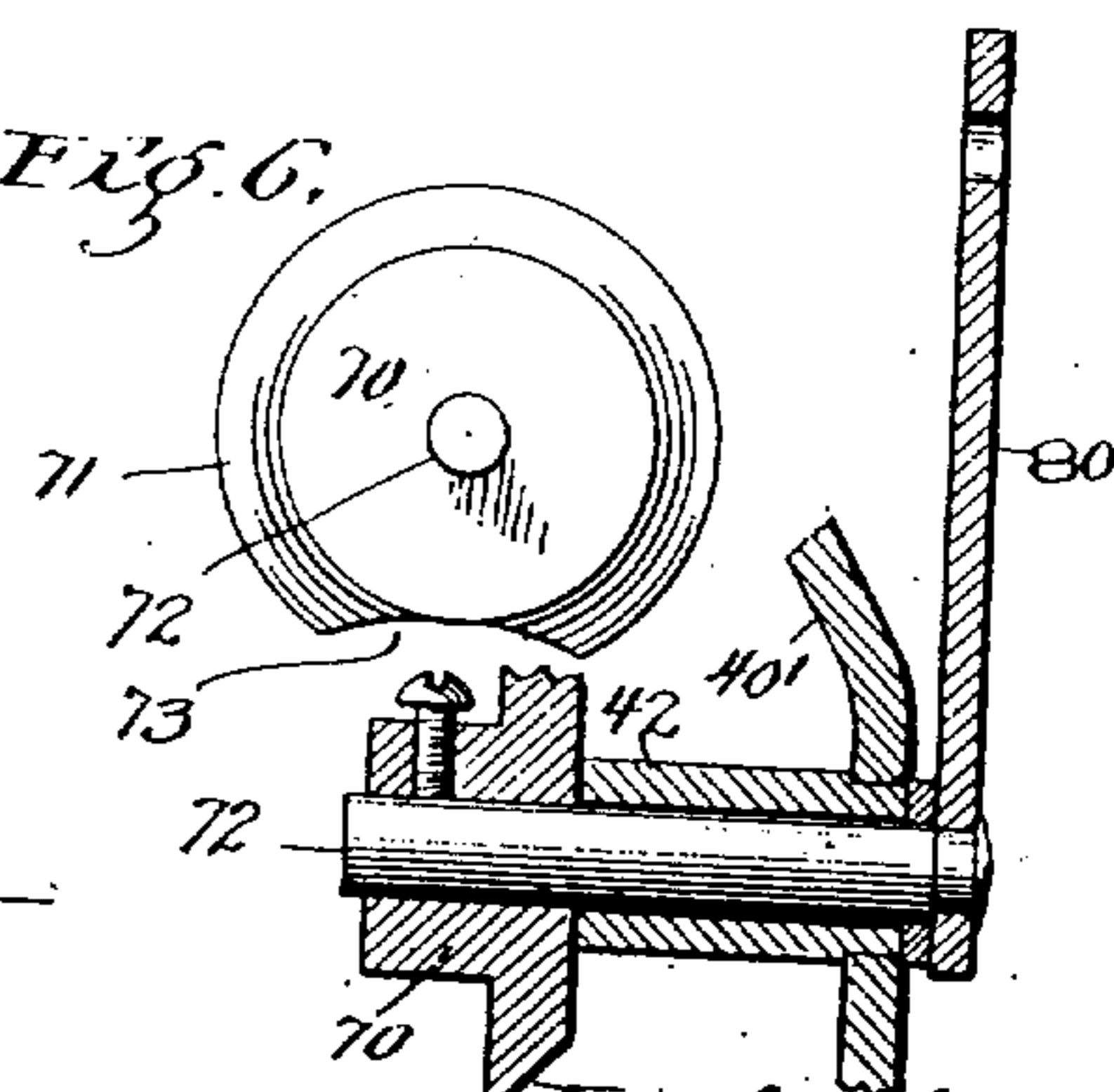


Fig. 7.

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UNITED STATES PATENT OFFICE.

JOHN J. PINK, OF CHICAGO, ILLINOIS, ASSIGNOR TO VIASCOPE MANUFACTURING COMPANY,
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LIGHT-SHIELD FOR MOVING-PICTURE MACHINES.

No. 892,547.

Specification of Letters Patent.

Patented July 7, 1908.

Application filed October 2, 1907. Serial No. 395,473.

To all whom it may concern:

Be it known that I, JOHN J. PINK, a citizen of the United States, residing in the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Light-Shields for Moving-Picture Machines, of which the following is a full, clear, and exact description.

My invention relates to certain new and useful improvements in light shields for moving picture machines, and designs to provide means for automatically shutting off, or rather intercepting the light from the lamp, which forms part of the outfit, whenever the machine ceases to operate, or is running much below its normal speed.

In moving picture machines, the rays of light are concentrated at a point adjacent to the film or ribbon, and inasmuch as the latter is usually composed of a highly inflammable and combustible material, there is constant danger of its ignition from the intense heat of the light; when, however, the film is in motion the danger is avoided but in case the film comes to a position of rest in the path of the concentrated rays of light then the danger is most imminent.

One of the objects of this invention is to provide a light shield operable by the moving picture machine itself and so arranged that when the machine is not in operation the shield will be in position to intercept the rays of light from the lamp, but that when the machine is in operation the shield is thereby moved into a position outside of the rays of light.

Another object is to provide a shield that is operable by a hand operated or motor operated picture machine.

Another object is to provide a shield which is operated with very small increase of power.

Another object is to provide a shield that is operated by gravity to bring it into the light intercepting position.

Other objects and advantages will appear in the course of this specification and the essential features will be more particularly pointed out in the claims appended thereto.

The invention is fully described in the following specification and clearly illustrated in the drawings accompanying the same, in which

Figure 1 is a side view of a moving picture machine, a light shield, a lamp house and a motor for operating the machine. Fig. 2 is a view

partly in plan and partly in horizontal section showing the belt connection between the picture machine and the shield, the line of section being indicated at 2—2 Fig. 1. Fig. 3 is a face view of the shield mechanism looking in the direction of the arrow 3, in Fig. 1, and showing the shield in the intercepting position. Fig. 4 is a vertical cross section taken on line 4—4, Fig. 3, the shield being shown in its raised position in full lines, and in the intercepting position in dotted lines. Fig. 5 is a face view of a fragment of the shield mechanism, showing the governor cam in a position occupied when the machine is running. Fig. 6 is a face view of the cam disk, and Fig. 7 is a detail section of the cam disk and connecting parts.

In Figs. 1 and 2 A, represents a moving picture machine, of the type shown and described in Letters Patent of the United States No. 850,567, issued April 16, 1907, upon an invention of J. A. Crosby and myself. This machine has a magazine 11, in which is journaled a spool that carries the film 12, and from which the latter is unwound as it passes through the machine. As is usual the film passes around a number of guide spools 13 and through a guiding mechanism 14 where it is held in a flat condition. At this point the light passes through the film and through a lens 15, from which it is projected upon the screen or curtain. A crank 16 mounted upon a shaft 16', is provided for the operation of the machine by hand and a pulley 17 is also provided for the operation of the machine by means of other motive power here shown as an electric motor 20, geared to the machine by means of a belt 21, which passes around the pulley 17, which pulley is secured upon the main shaft 18 that forms part of the operating mechanism of the machine. The shaft 18 carries a fly wheel 18', and a second pulley 19, which is belted to the shield mechanism and said shaft may be considered as the motor operated driving shaft and the shaft 16' as the hand operated driving shaft, the two being geared together so as to operate in unison. The construction of machines of this type is well known and is fully described in the patent above referred to and for this reason requires no further description so far as this specification is concerned.

Behind the machine is a lamp house B, of ordinary form, which is arranged to furnish

the light for projecting the pictures upon the screen. The lamp house and machine are preferably mounted upon a suitably supported base 30, and between them is placed the shield mechanism C, which may also be secured upon the base 30.

Referring to Figs. 3 to 7 inclusive, 40, 40', represent two standards that are secured to the base, said standards being, preferably, vertically adjustable so as to vary the position of the shield proper and as shown the standards are each made in two pieces bolted together, the bolts passing through slots in the adjacent ends of the standard sections. The upper ends of the standards are connected by an arch piece 41, to make a rigid frame work for the support of the operating parts. A shaft 50, is journaled in the standards 40, 40', and is held against longitudinal movement therein by means of two collars 51, arranged upon either side of the standard 40 and secured upon the shaft by means of set nuts 52. Shield operating mechanism is mounted upon the shaft 50 and is connected to the machine so as to be operated thereby and said mechanism will be presently described. As shown a shiftable belt pulley 60, is loosely mounted upon said shaft 50 and is connected to the driving pulley 19 of the machine by means of a belt 61. Said pulley 60, is provided with a beveled friction face 62, adapted for engagement with a beveled friction face 71 of a cam disk 70, that is secured upon a spindle 72, journaled in a hollow-stud 42 upon the standard 40'. The pulley 60 is further provided with a hub 63, to which are secured a number of spring arms 64 which carry weights 65, and have their other ends secured upon a collar 66 fast upon the shaft 50. This structure forms a centrifugal governor which when running at high speed moves the beveled friction face 62, of the pulley 60, into frictional engagement with the beveled friction face of the cam disk, thereby turning the same upon its axis. Said disk is formed with a notch 73 in its periphery, which notch is of such size and shape as to ride upon the cylindrical face 67 of the pulley 60. It will be perfectly obvious that when the notch has been brought into register with the pulley 60 the latter may be moved across the plane of the cam disk, thereby bringing the body of the pulley into the notch of the cam disk. When brought to this position, any further rotation of the cam disk becomes impossible, it being locked by reason of the engagement of the pulley with the notch 73 of the cam disk. The cam disk is therefore maintained in such position so long as the notch rides upon the periphery 67 of the pulley.

The spindle 72 of the cam disk 70 carries an arm 80 upon its outer end which arm is connected to a second arm 81 by a link 82, the arm 81 being fast upon a rock shaft 83

journaled in the upper ends of the standards. A light shield or shutter 90, is secured upon the rock shaft 83, in any suitable manner and is of such size as to completely intercept the rays of light issuing from the lamp house. A weight 84 is adjustably secured upon an arm 85 which extends back from the light shield and is secured upon the shaft 83, and said weight forms a counterbalance for the light shield. The arm 80 is so positioned with respect to the notch 73, that it will occupy a raised position whenever the notch rides the pulley 60, thereby holding the light shield in its raised position, permitting the rays of light from the lamp to pass to and through the film and lens.

The operation of the machine is as follows:—Whenever the machine is in a position of rest, the beveled friction faces of the pulley and cam disk are in position for engagement and the light shield is hanging down from the rock shaft 83, and in the path of the rays of light from the lamp house. If now, the crank 16, be turned or the pulley 17 be rotated by the motor at the proper speed to operate the machine, the governor shaft 50, will be rotated through the belt connection with the machine, the shifting pulley 60, will be forced against the cam disk by the action of the governor, and the cam disk will be turned upon its axis by reason of the frictional engagement of the beveled friction faces of the pulley and cam disk, thereby swinging the arm 80 upward, raising the link 82, turning the arm 81, shaft 83, and consequently raising the light shield out of the rays of light from the lamp house. As soon as the notch 73 of the cam disk comes into register with the periphery 67 of the pulley 60, the latter is drawn under the cam disk, causing the notch to ride upon the periphery of the pulley and thereby maintaining the light shield in its raised or operative position; and it will be so maintained as long as the machine is being operated. In case the motor ceases to run or either belt is broken, or the operator ceases to turn the crank, the shaft 50 will stop, the spring arms 64 will straighten out, thereby moving the pulley 60 out of the notch 73, and allowing the cam disk to turn upon its own weight, thereby shutting off the light from the film and avoiding any danger of ignition from the heat of the light.

It sometimes happens that the film itself becomes unmanageable and unwinds from its spool and falls into path of the rays of light, or for other reasons the operator is obliged to stop the machine without turning off the light. It is perfectly obvious that as soon as the machine ceases to run, the light shield will immediately fall, thereby automatically shutting off the light.

I am aware that various alterations and

modifications of this device are possible without departing from the spirit of my invention and I do not therefore desire to limit myself to the exact construction shown and described.

I claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the combination of a light shield, a member connected to the light shield and containing an engagement means, a rotatable and slidable member having an engagement means coacting with said first named engagement means and constructed to actuate the first named engagement means to raise the shield, and means for throwing said engagement means out of gear when the shield is in raised position.

2. In a device of the class described, the combination of a light shield, a rotatable and slidable member, a notched cam disk arranged to be turned by frictional engagement therewith, and connections between the cam disk and light shield.

3. In a device of the class described, the combination of a light shield, a shiftable friction device controlled by the operation of a moving picture machine, and including a governor arranged to shift said friction device when run at high speed, and a notched disk connected to the light shield and arranged to be operated by the shiftable friction device to operate the light shield.

4. In a device of the class described, the combination of a light shield, a rotatable member operated by a suitable moving picture machine, and a friction member connected with the light shield, and operated by said rotatable member, said rotatable member and friction member being relatively movable in a longitudinal direction with respect to their axes of rotation and said friction member being constructed and arranged to be thrown out of gear with the

rotatable member when the shield is raised.

5. In a device of the class described, the combination of a shield, a shiftable pulley, adapted to be geared to a moving picture machine and rotated thereby, a governor operated by said pulley to shift the same, a friction disk engaged by said pulley and arranged to be partially rotated thereby and connections between said disk and shield.

6. In a device of the class described, the combination of a shield, a shiftable pulley, having a beveled friction face, a governor arranged to shift said pulley, mechanism operated by a moving picture machine arranged to operate the pulley, a cam disk having a peripheral notch engaged by said friction face, and connections between the cam disk and shield.

7. In a device of the class described, the combination of a shield, a shiftable pulley having a beveled friction face, a governor arranged to shift said pulley, mechanism operated by a moving picture machine arranged to rotate said pulley, a notched cam disk engaged by said friction face and connections between the cam disk and shield.

8. In a device of the class described, the combination of a shield, a pulley having a beveled friction face, mechanism for rotating said pulley operated by a moving picture machine, a governor arranged to shift said pulley, a disk having a beveled face engaged by the beveled face of the pulley and containing a peripheral notch, and connections between the disk and shield.

In witness whereof, I have executed the above application for Letters Patent at Chicago, county of Cook and State of Illinois, this 26th day of September 1907.

JOHN J. PINK.

Witnesses:

CHARLES O. SHERVEY,
FRANK W. BEMM.