

J. KELLER.
MOVING PICTURE MACHINE.
APPLICATION FILED NOV. 27, 1909.

971,898.

Patented Oct. 4, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

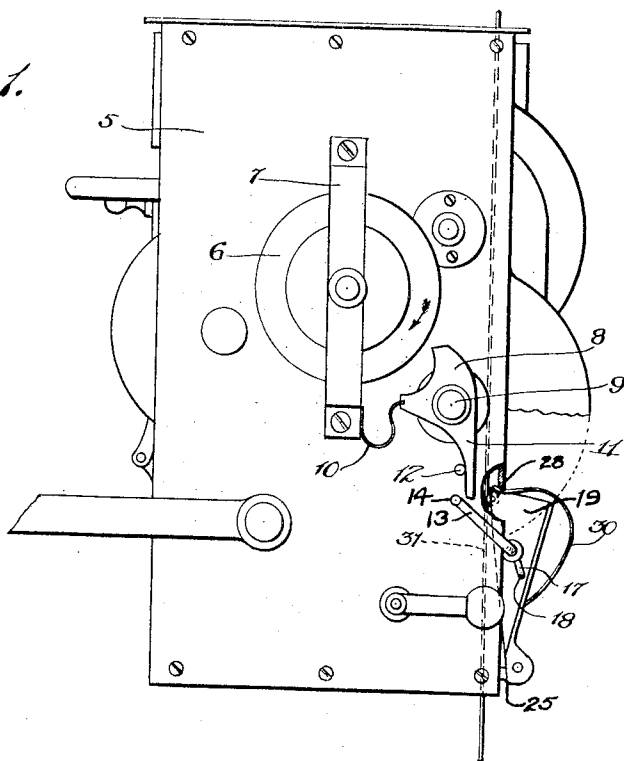
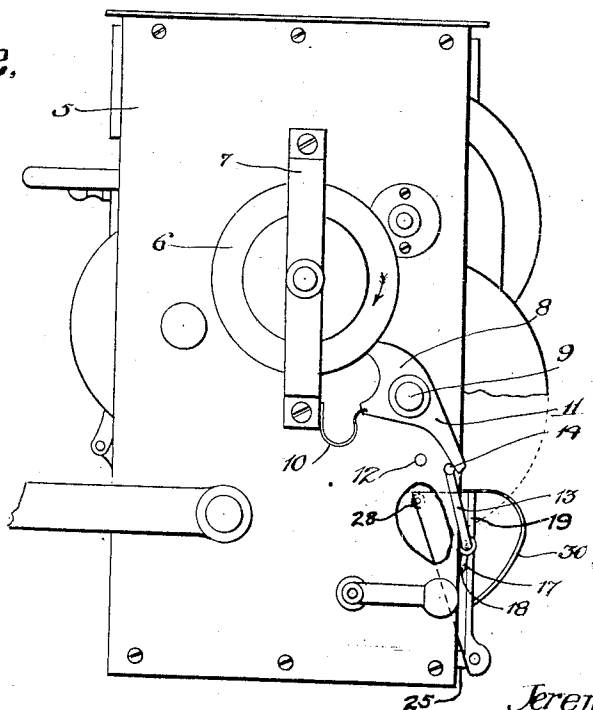


Fig. 2.



Witnesses:

Wm. P. Bond

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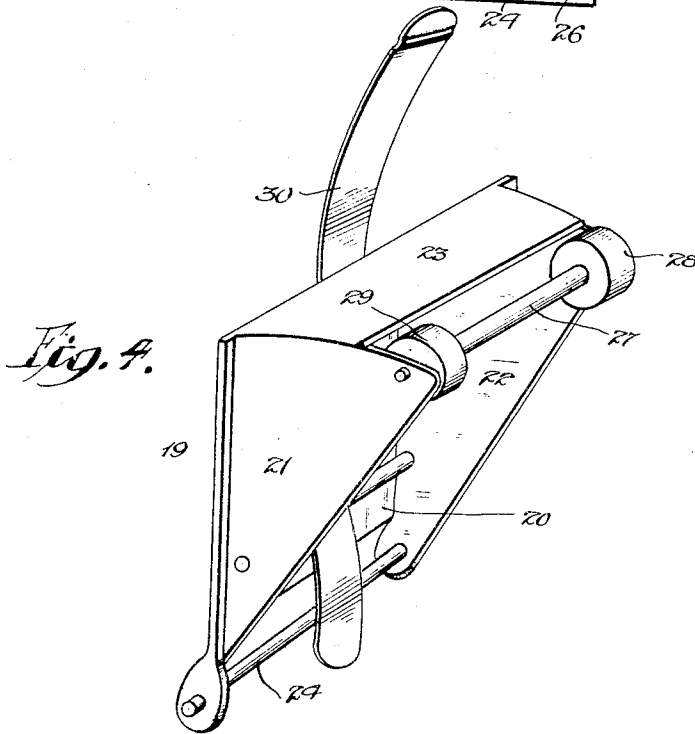
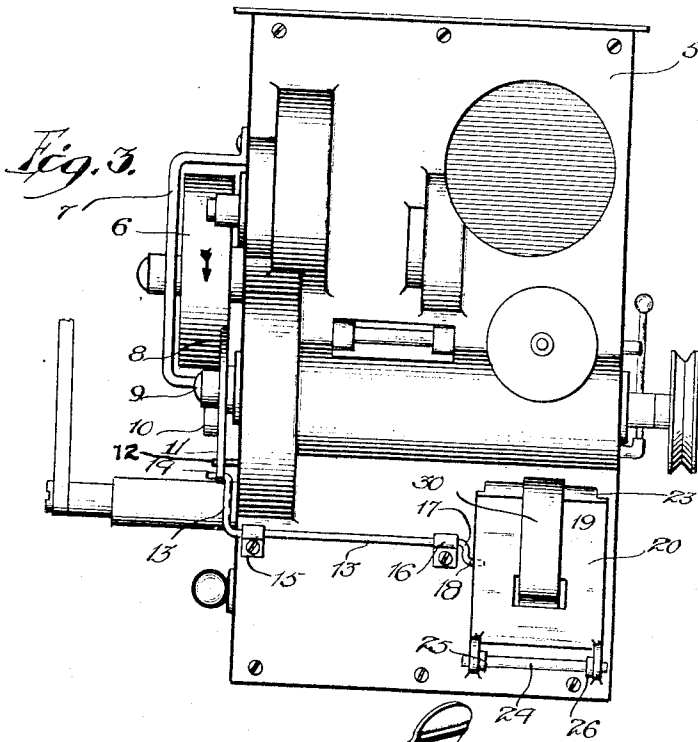
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JEREMIAH KELLER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE SELIG POLYSCOPE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

MOVING-PICTURE MACHINE.

971,898.

Specification of Letters Patent.

Patented Oct. 4, 1910.

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To all whom it may concern:

Be it known that I, JEREMIAH KELLER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Moving-Picture Machines, of which the following is a specification.

In moving picture machines considerable danger is entailed from fire and explosion, due to failure to stop the machine quickly in case of breakage of the film, in which case a continued feeding of the film into the machine causes it to bunch up in front of the lens or lamp, becoming overheated, and finally igniting and burning fiercely, or even exploding. The dangers arising from allowing any portion of the film to remain a considerable time before the lens, or in the path of the warm rays of light, have been heretofore appreciated, and to this end, shutters, known as fire-shutters, have been devised, their purpose being to shut off the light from the film when the rate of feeding falls below a certain predetermined value. But the above mentioned danger, due to the breakage of the film, is not overcome by the use of such shutters or other devices with which I am familiar.

The object of the present invention is to provide a simple, certain, and effective device for stopping the machine in case of such breakage of the film, or reduction of the tension on it.

The invention consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of one type of moving picture machine, having my automatic brake applied to it and cut away in one side so as to more efficiently show the manner of applying the brake mechanism, and is in the normal position which it occupies when the film is continuous and working properly; Fig. 2, a view similar to Fig. 1, with the exception that the brake mechanism is shown in tripped or working position, such as it takes when the film breaks or does not feed properly; Fig. 3, a rear elevation of the moving picture machine, having applied to it my brake mechanism; and Fig. 4, a perspective view of the film contactor.

In Fig. 1 a box-like structure 5 contains the working mechanisms, shutter, etc., of

the moving picture machine, the details of which I do not describe, inasmuch as they may be of any of many types now in use.

A fly-wheel or brake-wheel 6 is rigidly geared or otherwise connected to the working mechanisms of the machine in such a way that a brake applied to it will effectively stop the motion of the machine, the direction of rotation being as shown by the arrow. The fly-wheel is preferably guarded on its outer side, by a strap 7, which may be of any suitable form. A brake shoe 8 is suitably pivoted at 9 adjacent to the wheel 6, and is connected with a spring 10 of suitable construction, preferably such that when the brake is in normal position the spring tends to maintain the brake shoe away from the wheel, but that a slight movement of the brake shoe toward the wheel will cause the effort of the spring to be reversed, tending then to force the brake shoe down.

In normal position, an arm 11 attached to the brake shoe contacts against a stop 12, as shown in Fig. 1; but a slight outward movement of the arm will cause the force of the spring 10 to be exerted in a reverse direction, tending to throw the brake shoe down against the wheel, thereby powerfully applying it, as shown in Fig. 2. It is further seen that a brake applied in the manner shown in Figs. 1 and 2 will exert a powerful braking force on the wheel, inasmuch as an attempt to rotate the wheel will tend to apply the brake even more powerfully than before, on account of the toggle effect due to the relations of the parts.

A properly bent rod 13 is suitably provided, on its end, with a contact 14 adapted to engage with the arm 11. The rod is bent around the back of the machine, as shown in Fig. 3, and is suitably pivoted at 15 and 16 to the box of the machine, and terminates at its other end in a lever 17 provided with a contacting end 18. A film contactor 19, in the form of a door, comprises a back 20, side walls 21 and 22, and a top 23, the entire structure being hinged to the back of the machine by a rod 24 which is carried in bearings 25 and 26. The film contactor has, in its upper portion, a rod 27 which carries contacting rollers 28 and 29. A spring 30 is arranged to engage the back of the machine in such a way that when the film contactor is in the normal or untripped position shown in Fig. 1, the spring

exerts a slight pressure tending to throw the film contactor inwardly into the body of the machine, and so that as it moves inwardly the effective force of the spring increases.

5 The film contactor is arranged to engage the end 18 of the rod 13, so that before the film contactor has been thrown completely in by the spring 30 the lever 17 will be depressed, the shaft 13 rotated, the contact 14
10 thrown against the arm 11, and the brake thereby tripped and thrown into contact with the wheel 6.

As shown in Fig. 1, the rollers 23 and 29 are normally in contact with a film 31 which
15 is drawn taut, and which thereby holds the film contactor in the normal position shown. In case the film breaks, or in case the tension on it is sufficiently reduced, the spring 30 will throw the film contactor inwardly,
20 thereby tripping the brake as above described.

It will be seen that this device, while extremely simple of design and construction, nevertheless serves to effectively stop the
25 machine in case the film breaks, or in case the tension on it is sufficiently reduced; for the parts can be so designed that a very slight movement of the brake will completely upset the balance, as shown in Fig. 1, and the spring 10 will then powerfully
30 apply the brake, as shown in Fig. 2. The spring 30 and the film contactor or door 19 can be so designed that the film contactor will be swung down away from the box of
35 the machine, thus leaving a large opening through which the film can be easily manipulated in setting up the machine for operation.

I do not wish to restrict my invention precisely to the form shown in the drawings, for it will be seen that many changes in form can be made without departing from the spirit of the invention, since other forms of springs than those shown might be used,
45 or a different tripping device might be used, or the brake structure might be entirely included within the box of the machine, or the form of film contacting device might be changed, or a brake in the form of a stop
50 might be used.

By the use of the term film contactor or door, I contemplate any device which will bear against the film and thus be sustained in normal position as long as the film is
55 continuous and drawn taut; and I do not intend to restrict its form necessarily to that shown in the drawings, for it will be seen that a number of other practical forms might be used.

60 I claim:

1. In brake mechanism for moving picture machines, a brake wheel positively connected with the film driving mechanism, and

a tripping brake adapted to engage the brake wheel when tripped, in combination 65 with automatic means for tripping the brake when the tension on the film is reduced, substantially as described.

2. In brake mechanism for moving picture machines, a brake wheel positively connected 70 with the film driving mechanism, a brake shoe adapted to engage the brake wheel, and a spring connected with the brake shoe, in combination with automatic means for applying the brake shoe when the tension on 75 the film is reduced, substantially as described.

3. In brake mechanism for moving picture machines, a brake wheel positively connected with the film driving mechanism, a locking brake shoe adapted to engage the brake 80 wheel, a toggle spring connected with the brake shoe, and a stop for retaining the brake shoe in normal position, in combination with automatic means for setting the 85 brake when the tension on the film is reduced, substantially as described.

4. In brake mechanism for moving picture machines, a brake wheel positively connected with the film driving mechanism, a 90 brake shoe adapted to engage the brake wheel, a spring connected with the brake shoe, and a stop for retaining the brake shoe in normal position, in combination with a lever mechanism for tripping the brake 95 shoe, and a film contactor adapted to engage the lever mechanism when the tension on the film is reduced, substantially as described.

5. In brake mechanism for moving picture machines, a brake shoe for arresting 100 the motion of the film driving mechanism, in combination with a lever mechanism adapted to trip the brake shoe and adapted to be operated by a film contactor said film 105 contactor normally retained in non-operative position by the tension on the film, substantially as described.

6. In brake mechanism for moving picture machines, a brake shoe for arresting the 110 motion of the film driving mechanism, in combination with a lever mechanism adapted to trip the brake shoe and adapted to be operated by a film contactor, comprising a body portion hinged at one end to the 115 frame of the machine, and provided on its opposite end with contactors adapted to contact the film, the film contactor being retained normally in non-operative position by the tension on the film, substantially as 120 described.

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Witnesses:

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