

W. F. FOLMER.
 PHOTOGRAPHIC CAMERA.
 APPLICATION FILED JAN. 2, 1919.

1,335,728.

Patented Apr. 6, 1920.
 3 SHEETS—SHEET 1.

Fig. 1

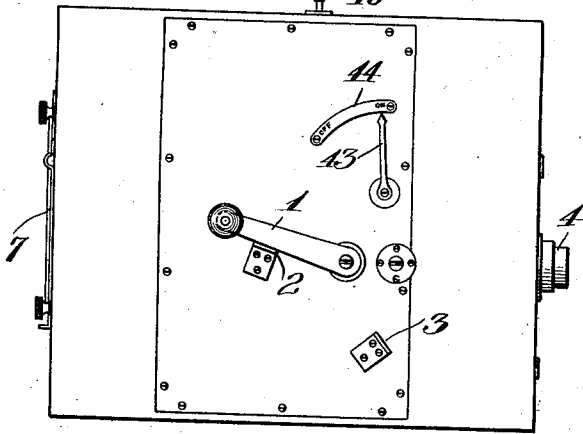


Fig. 2

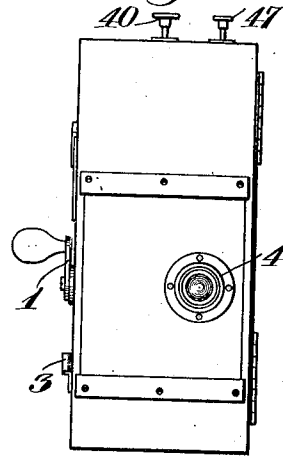


Fig. 3

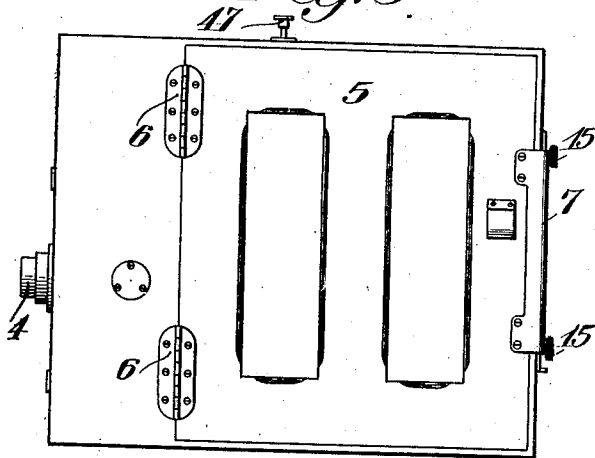
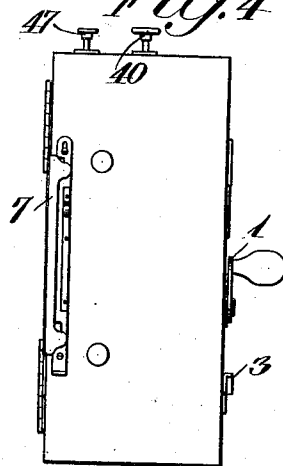


Fig. 4



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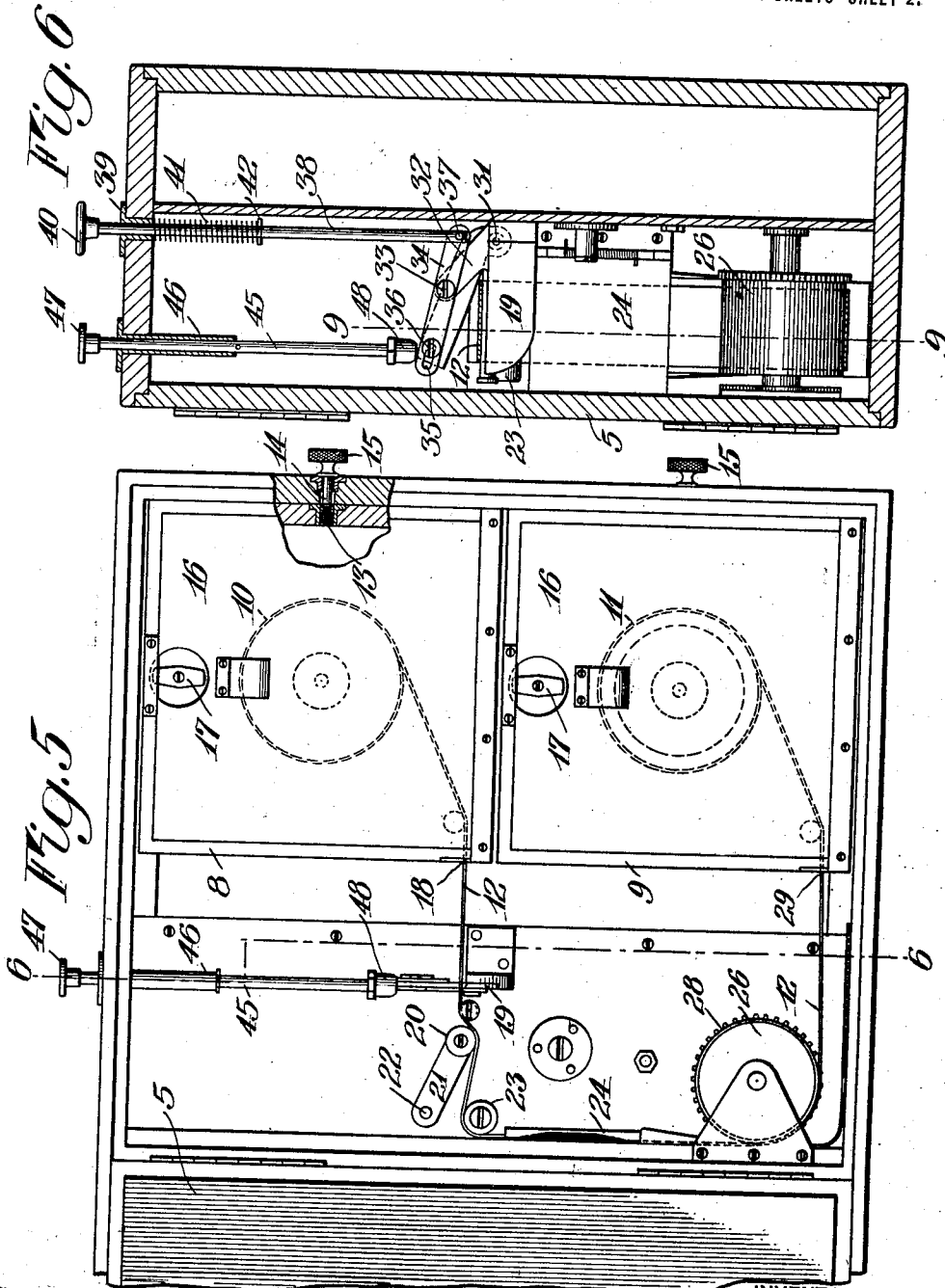
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Fig. 7

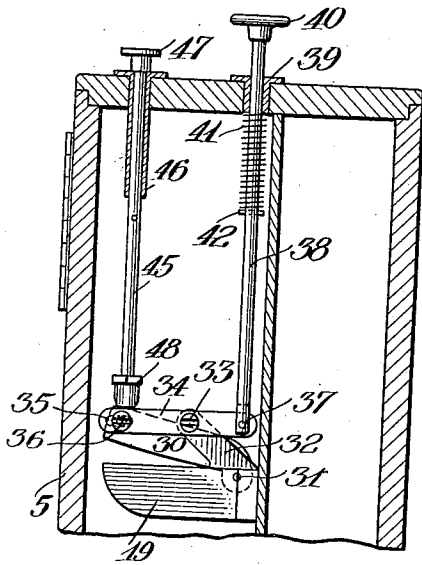


Fig. 8

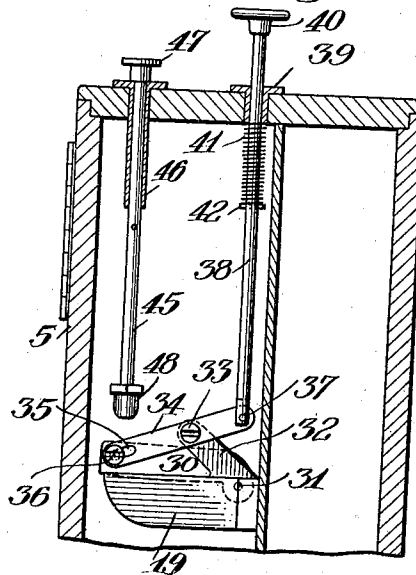
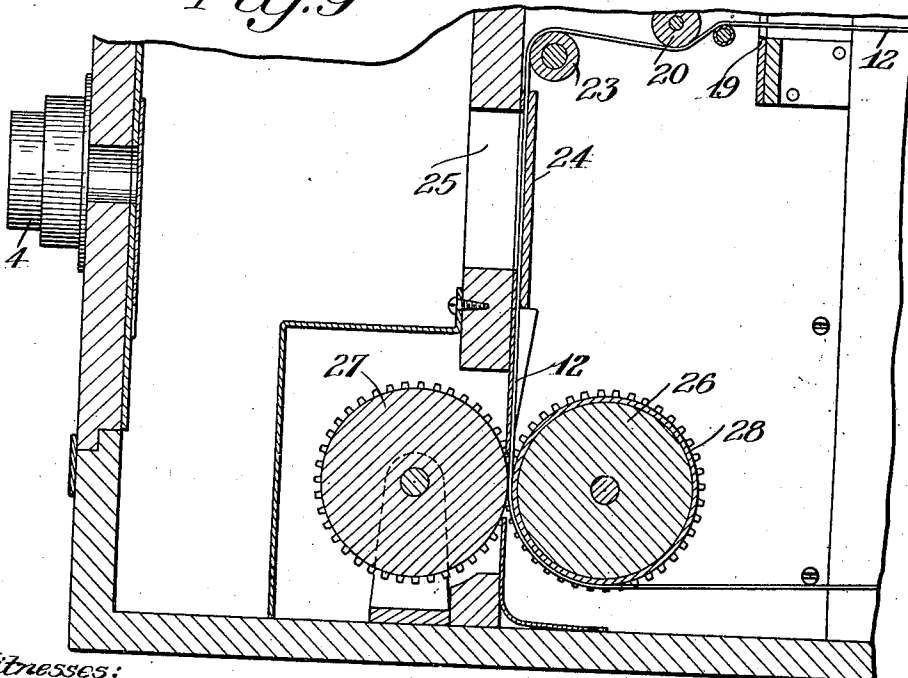


Fig. 9



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PHOTOGRAPHIC CAMERA.

1,335,728.

Specification of Letters Patent.

Patented Apr. 6, 1920.

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To all whom it may concern:

Be it known that I, WILLIAM F. FOLMER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Photographic Cameras; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference numerals marked thereon.

My present invention relates to photography and more particularly to photographic film cameras and it has for its object to provide a simple and convenient instrument of this character of large capacity and with which great numbers of photographs or a number of series of photographs, can be taken in rapid succession and the film so marked as to make it easy to keep track of them and to identify the different exposures and the different series of exposures before development. The improvements are directed more particularly toward providing an improved arrangement for, selectively, either notching the film or severing it, the device being so constructed as to reduce the liability of confusion on the part of the operator, in choosing the desired operation. To these and other ends the invention resides in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a side elevation of a camera constructed in accordance with and illustrating one embodiment of my invention;

Fig. 2 is a front view thereof;

Fig. 3 is an elevation of the opposite side;

Fig. 4 is a rear view;

Fig. 5 is an enlarged view corresponding to Fig. 3 but with the door of the camera box open and parts broken away;

Fig. 6 is a transverse sectional view taken substantially on the line 6—6 of Fig. 5;

Figs. 7 and 8 are fragmentary views showing the notching and severing device of Fig. 6 in other and different positions, and

Fig. 9 is an enlarged fragmentary sectional view taken substantially on the line 9—9 of Fig. 6.

Similar reference numerals throughout the several views indicate the same parts.

To first give a general idea of the exterior

parts and how the camera is operated, attention is called to Fig. 1 showing an operating crank 1 normally resting in a rearward position against a stop 2. When this crank is turned forwardly until it reaches another stop 3, one picture area of a film strip is fed out of and a fresh area into the focal plane of the camera. The crank is returned to the normal position of Fig. 1 by a spring (not shown). The lens tube of the camera is shown at 4. Access is gained to the interior of the camera box through a door 5 hinged at 6 (see Fig. 3) on the side opposite the crank 1. This door is normally held closed by a bolt mechanism 7 on the rear corner of the camera.

In Fig. 5, the door is shown in open position. In the interior are two roll holding boxes 8 and 9, the former for the supply spool film and the latter for the winding or take-up spool. These spools are indicated at 10 and 11, respectively, in dotted lines and the film is indicated at 12. The roll holding boxes have threaded bushings 13 in their rear walls to take a clamping screw 14 mounted in the rear wall of the camera box and terminating in a knurled head 15 by which means the roll holders are detachably held in position within the camera. They are light-tight when removed, by virtue of covers 16 secured by buttons 17.

The film issues from the box containing the feed spool 10 through a slot near the base of the forward wall thereof, said slot being indicated at 18 in Fig. 5. It passes thence over the fixed blade 19 of a severing device hereinafter described; beneath an idler roller 20 on an arm 21 pivoted at 22; over a guide roller 23 and thence downwardly through a film gate 24 into the focal plane of the camera. The said gate is adjacent to the exposure opening 25 shown in Fig. 9. Below the gate and tangent to each other and to the focal plane are two feed rollers 26 and 27. The former has a peripheral covering of rubber or similar material 28. It is geared to the roller 27, as shown, and is itself turned intermittently by the crank 1 through suitable driving mechanism, not shown and not important to this invention. The take-up roll 11 is also in gear with this same driving mechanism and after the film passes through the feed rollers, it enters a slot 29 in the lower film box 16 and is taken up on the winding spool 11.

As before indicated, the present camera is

particularly designed for the rapid taking of a large number of small pictures as, for instance, when it is desired to take the photographs of the employees of a factory or the personnel of a military organization, for identification purposes and it is intended that the ordinary motion picture film strip be used. It is therefore desirable that some means be provided for marking off the exposed areas (the usual film backing strip not being used) and for cutting the strip into sections composed of the different series of pictures. For this purpose, I provide the severing and notching device of which the fixed blade 19, already referred to, is a part.

Working in conjunction with the fixed blade 19 is a shearing blade 30 pivoted at 31. A fixed bracket arm 32 carries the fulcrum pivot 33 of a lever 34, one arm of which has a slotted connection 35 with a pin 36 on the free end of the movable blade or knife 30. The opposite arm of the lever is pivoted at 37 to a pull rod 38 extending out through a bushing 39 in the top of the camera box and terminating in a knob 40. A compression spring 41 coiled around the rod between a pin 42 thereon and the bushing 39 holds the rod normally retracted and maintains the knife 30 in the raised position of Fig. 6, so that the film 12 may travel beneath it. By pulling upwardly on the knob 40, the knife is operated, as shown in Fig. 8, and the film severed.

When the film runs continuously beneath the knife and is stretched in the focal plane, the idler 20 on the arm 21, before referred to, holds an indicator arm 43 (Fig. 1) secured to the pivot 22 thereof opposite the word "On" on a scale plate 44. As soon as the film is severed, the idler 20 drops, being no longer supported by said film, and the indicator 43 goes to the word "Off", showing that the machine is incapable of further operation until it is opened up and the film re-threaded.

When it is desired to merely notch the film instead of severing it, the same knife is used but under the control of another operating member. For this purpose, I provide a push rod 45 guided in a long bushing 46 in the camera box, which push rod also terminates in a knob or button 47 that is preferably smaller than the knob 40 in order to be distinguishable therefrom. At the lower end of the push rod is an enlargement 48 that normally rests and rides on the pivoted knife 30 at the free end thereof, or upon the lever 34. The push rod has only a limited movement terminated by contact of the knob 47 with the bushing 46 and this movement is capable of only partially actuating the knife 30 to the extent indicated in Fig. 7. Such movement causes the knife to merely notch the edge of the film 12 and is

effected by a brief downward thrust on the push rod 45. The push rod in no way interferes with the full operation of the knife under the influence of the pull rod 38, as clearly indicated in Fig. 8, and upon the return stroke, the spring 41 is strong enough to lift the push rod 45 to the normal position of Fig. 6.

It will be noted that as the operating member 38 is a pull rod, and the member 45 is a push rod, the operator is not apt to become confused and sever his film unintentionally when he merely wishes to notch it, as pressure on the wrong knob is harmless. Similarly, the mistake of pulling on the push rod 45 is instantly recognizable and results only in lost motion.

I claim as my invention:

1. In a photographic film camera, the combination with a film feeding device, of a knife having one movement to notch the film and another movement to sever it and two selectively actuated operating members for effecting such movements.

2. In a photographic film camera, the combination with a film feeding device, of a knife having one movement to notch the film and another movement to sever it and two selectively actuated operating members for effecting such movements, said members being movable in different relative directions to effect the actuation of the knife.

3. In a photographic film camera, the combination with a film feeding device, of a knife having one movement to notch the film and another movement to sever it, a push rod for effecting one of said movements and a pull rod for effecting the other.

4. In a photographic film camera, the combination with a film feeding device, of a knife beneath which the film is fed, an operating member adapted to move the knife a limited distance to notch the film, and another operating member adapted to operate the knife a greater distance to sever the film.

5. In a photographic film camera, the combination with a film feeding device, of a knife beneath which the film is fed, an operating member adapted to move the knife a limited distance to notch the film, a lever operatively connected to the knife and a second operating member connected to the lever to move the knife a greater distance and sever the film.

6. In a photographic film camera, the combination with a film feeding device, of a knife beneath which the film is fed, a push rod adapted to move the knife a limited distance to notch the film, a lever operatively connected to the knife and a pull rod connected to the lever to move the knife a greater distance and sever the film.

WILLIAM F. FOLMER.