

(No Model.)

C. WHITNEY.
PHOTOGRAPHIC SHUTTER.

No. 555,986.

Patented Mar. 10, 1896.

Fig. 1.

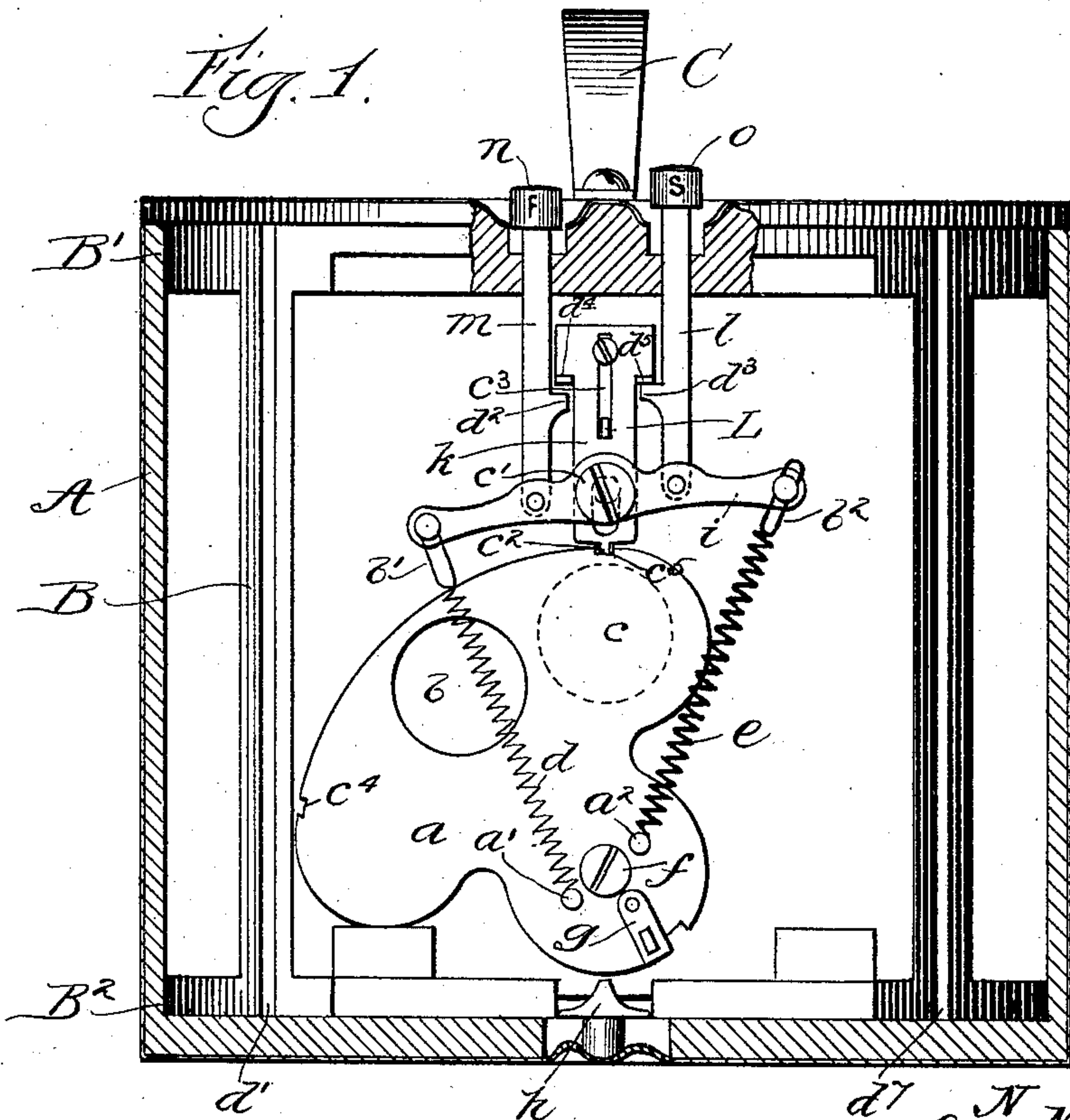
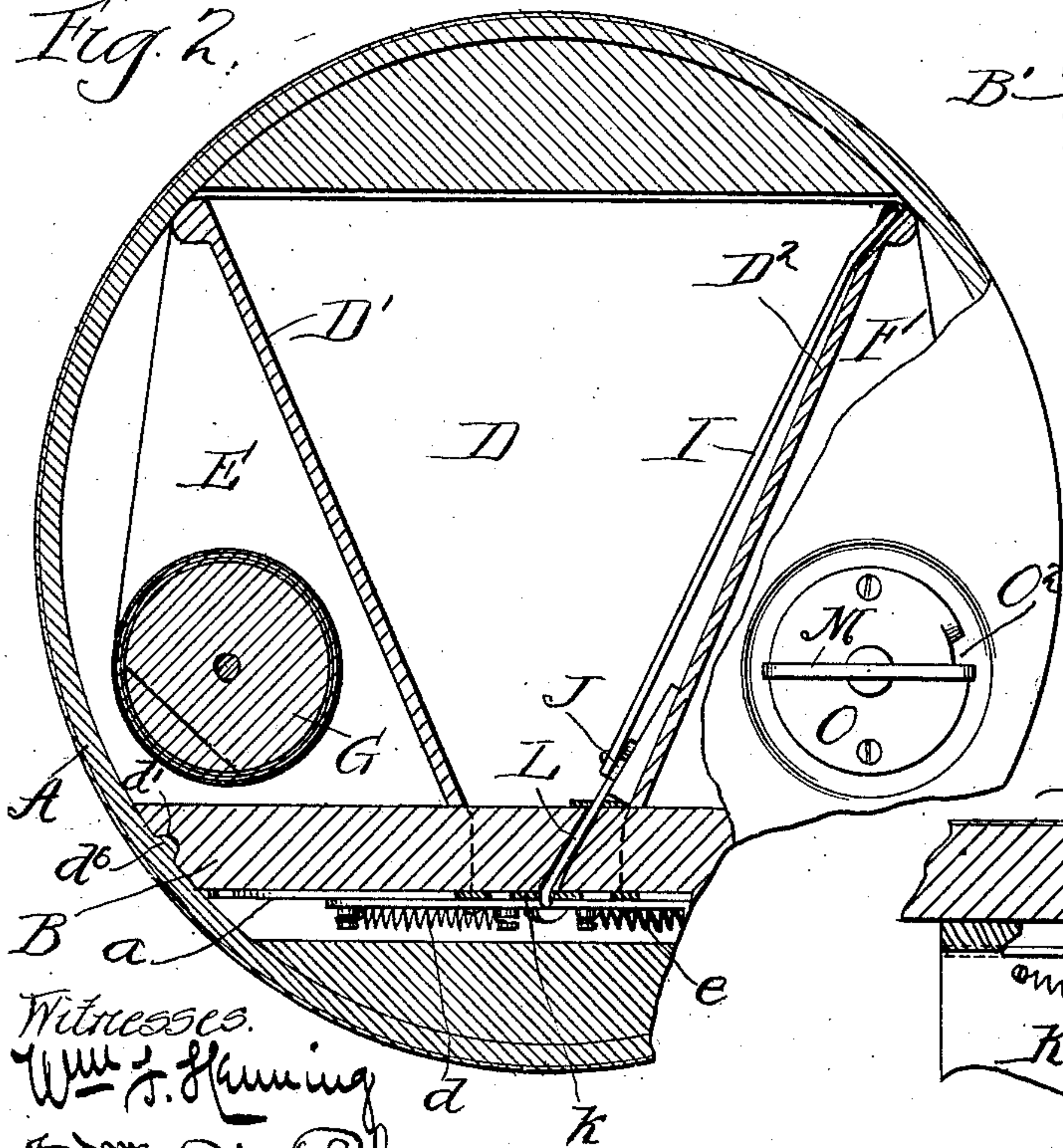


Fig. 2.



Witnesses.
Wm. F. Fleming
Geo. M. Rheem.

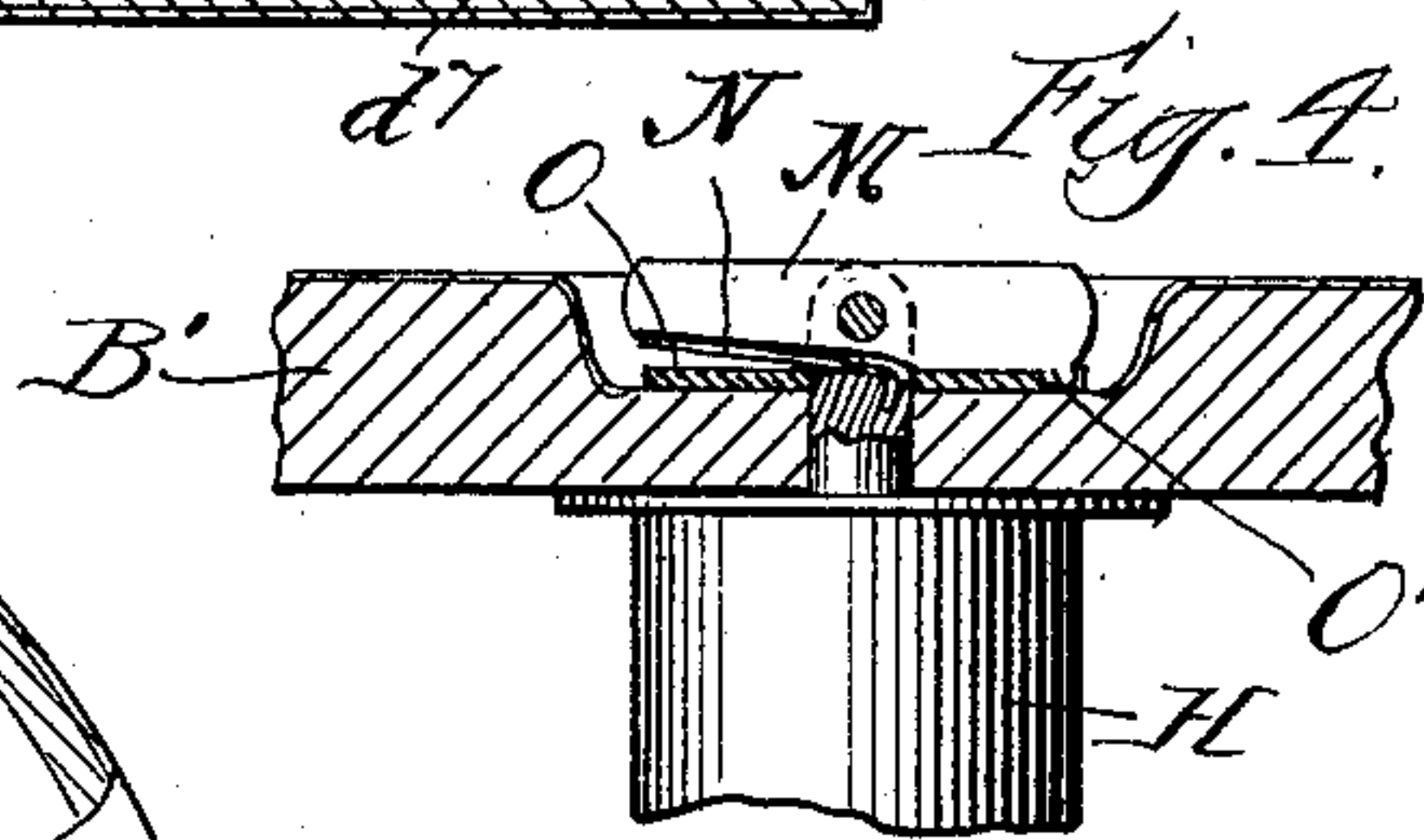


Fig. 5.

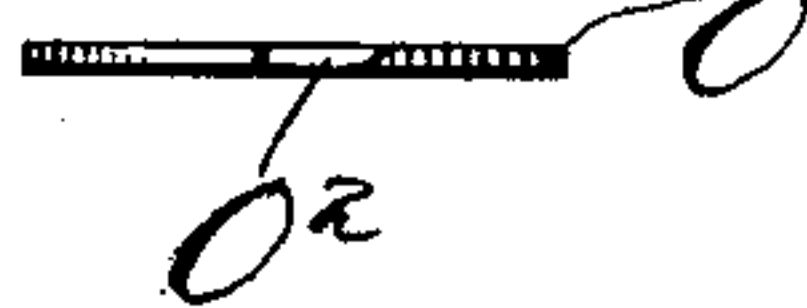
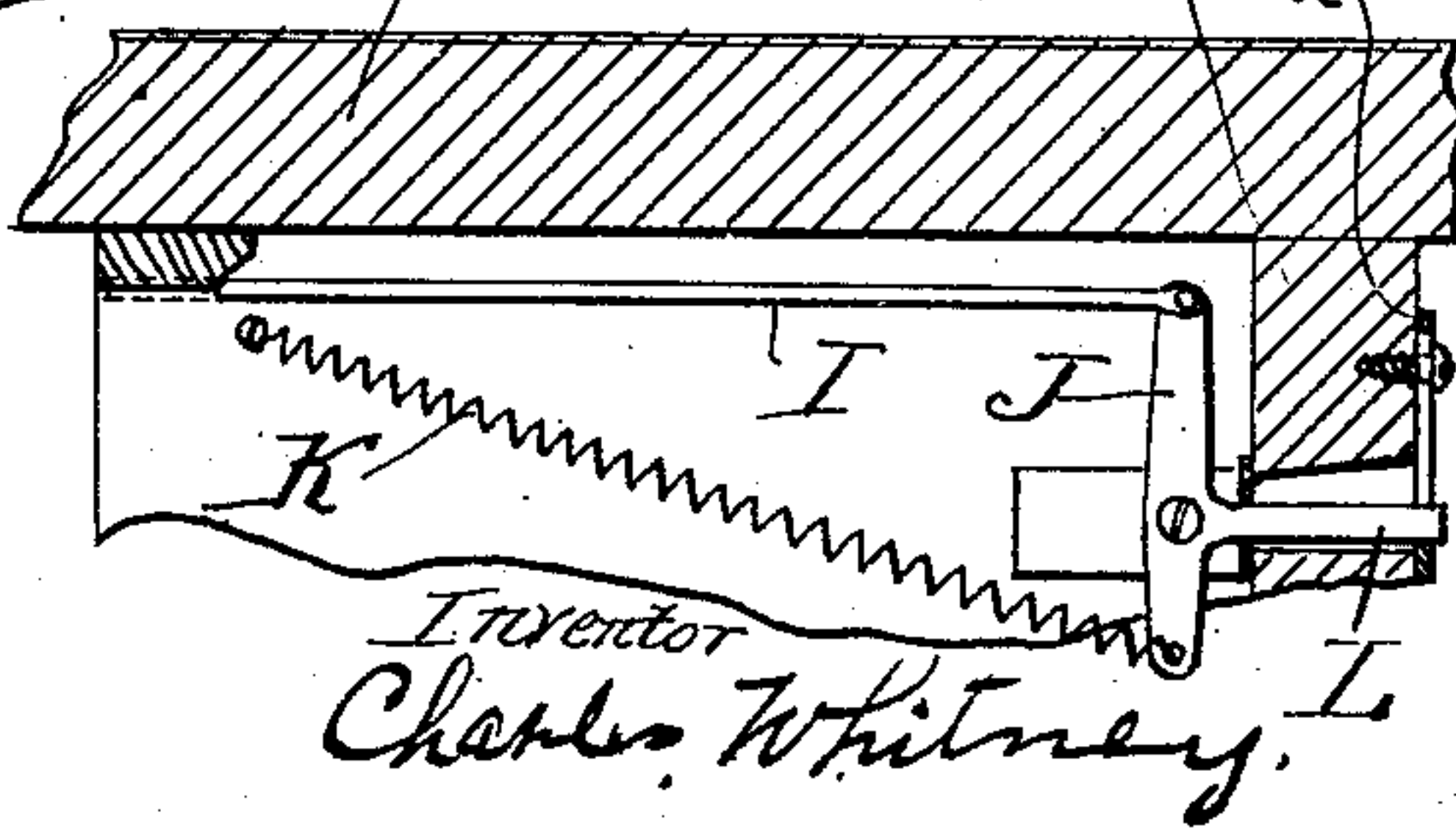


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES WHITNEY, OF WINNETKA, ILLINOIS.

PHOTOGRAPHIC SHUTTER.

SPECIFICATION forming part of Letters Patent No. 555,986, dated March 10, 1896.

Application filed January 11, 1896. Serial No. 575,068. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WHITNEY, a citizen of the United States, residing at Winnetka, in the county of Cook and State of Illinois, have invented a new and useful Photographic Shutter, of which the following is a specification.

My invention relates to improvements in shutters for that class of cameras known as "hand-cameras;" and the object of my improvement is to provide a simplified shutter. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a vertical section of the camera having the outer case cut away on line with the shutter. Fig. 2 represents a partial cross-section or plan view; Fig. 3, a detail showing perforating device; Fig. 4, a detail of the winding-post, and Fig. 5 a detail of the thumb-lever stop.

Similar letters refer to similar parts throughout the several views.

A represents the outer case, cylindrical in form, and B represents the front wall of the exposing-compartment D, to which is attached the shutter *a*.

B' is the top wall of the exposing-compartment, and is also adapted to form the cover to case A.

B² is the bottom wall to the exposing-compartment.

C represents the carrying-handle.

D is the inner exposing-compartment. D' and D² are the walls, which, together with the walls B, B', and B², form the exposing-compartment D, and to this exposing-compartment are attached the supply-spool G and the winding-spool H. These spools are held in place by rods passing through their centers, the rods having bearings in the walls B' and B². The rod in the winding-spool H passes through the cover-wall B', and a thumb-lever M is pivoted to the outer end. To one end of the thumb-lever M is attached a spring N, and on the other end of the thumb-lever M is a stop-catch O', which is held in engagement with the notch O² in plate O.

a is a shutter-plate pivoted at stud-screw *f*, having an exposing-opening *b*.

The dotted line *c* represents the lens-opening in the exposing-compartment D.

h is a time-stop, and *g* is a pivoted catch which swings sufficiently to permit the shutter to stop at its center when on a movement from either direction.

d and *e* are springs connected to the shutter-plate by studs *a'* and *a''*, and having slotted connections *b'* and *b''* to the studs on lever *i*.

m and *l* are the actuating-rods, and *n* and *o* the buttons or knobs.

k is a sliding plate having tongue *c''*, slot *c'''*, and shoulders *d''* and *d'''*.

I is a perforating-rod, and J a pivoted lever.

K is a spring, and L is the outer end of lever J.

d' and *d''* are grooves in wall B, adapted to slide on corresponding ribs *d'''* on case A.

c' is the pivot-stud holding lever *i*, and passes through a slot in plate *k*.

In operation the photographic film is drawn from supply-spool G around the base of the exposing-compartment D to the winding-spool H, the winding-spool being of a diameter to move enough film for one exposure at each revolution, the thumb-lever catch dropping into notch O² by the pressure of spring N. After the film is in proper position for an exposure and a slow-snap exposure is desired the button *o*, which is marked "S," is pressed down. This releases the shutter by raising the slide *k*, shoulder *d''* coming in contact with shoulder *d'''* and releasing *c''*. This movement also having energized spring *d*, brings the opening *b* to pass the lens-opening *c*. The button *o* being released, permits the plate *k* to slide down by means of the strain on lever L of the spring K. This brings tongue *c''* in engagement with notch *c'''*. In this position the shutter is ready for another exposure by pressing button *n*, which is marked "F," and the same operation is performed, only that the shutter is moved in the opposite direction, and as spring *e* is made stronger than spring *d* the shutter has a much quicker movement. In this style of snap-shutter the operator has a slow or quick shutter and also a time-shutter without changing any of the parts.

Case A is provided with a lens-opening corresponding with the lens-opening *c* in compartment D.

The buttons for operating the shutter for an exposure are marked "F" and "S" to indicate the fast and slow movements of the shutter. In pressing downward on the button

5 *n*, marked "F," the strong spring *e* is energized, and the plate *k* is lifted by *d*³ coming in contact with *d*⁵, thus lifting the tongue *c*² out of the notch *c*⁴, permitting the shutter to
 10 be drawn across the lens-opening, tongue *c*² dropping into notch *c*⁵ and held in place by spring *K* and lever *L* when the pressure is released on button *n*. This is the position shown in Fig. 1 of the drawings. The position
 15 of the buttons indicates by their relative position the one to be next operated—i. e., the one projecting farthest through the case. In this position the button *o*, marked "S," is the one to operate the shutter for another
 20 exposure, and this would energize the spring *d*⁷, which is the weaker of the two springs, and would therefore move the shutter slower. Should the quick movement be required when the shutter-buttons are in position for the
 25 slow movement it would only be necessary to cover the lens-opening in case A with one hand and press the button *o*, marked "S," which would reverse the shutter position without making an exposure to the film. In
 30 this manner the fast or the slow movement may be used as circumstances may require.

35 In Patent No. 446,374, issued to me February 10, 1891, I have shown and claimed a perforating device operated by a pressure on the shutter-button, and in Patent No. 446,369, issued to me February 10, 1891, I have shown and claimed the arrangement of the inside compartment, with the outside case forming the storage-compartments, substantially as
 herein shown, and I have also in the latter patent shown and claimed a shutter adapted

to both load and trip by a pressure on the button, substantially as the herein-described shutter is operated. I therefore make no claims for these features in this application. 40

What I do claim as my invention, and wish to secure by Letters Patent, is—

1. In a photographic camera, a shutter comprising in combination plate *a*, springs *d* and *e*, lever *i*, sliding plate *k*, operating-rods *m* 45 and *l*, and stops *g* and *h*, substantially as described.

2. In a photographic camera, a shutter provided with two operating-springs of varying strength for producing a slow and a fast shutter movement, an oscillating lever and two connecting-rods, with means for latching and unlatching the shutter-plate and energizing the operating-springs alternately by a pressure upon the button of each actuating-rod 55 alternately, substantially as described.

3. In a photographic camera, a shutter consisting of a single plate having an exposing-aperture for admitting light through the lens-opening, and a covering for the lens-opening 60 each side of said aperture, said plate adapted to be operated in one direction by one press-rod, and in the opposite direction by another press-rod, the connection between the press-rods and the shutter-plate being two springs, 65 one of which being stronger than the other, gives a fast and a slow shutter movement, substantially as described.

CHARLES WHITNEY.

Witnesses:

M. K. MEYER,
 GEORGE C. HOGE.