

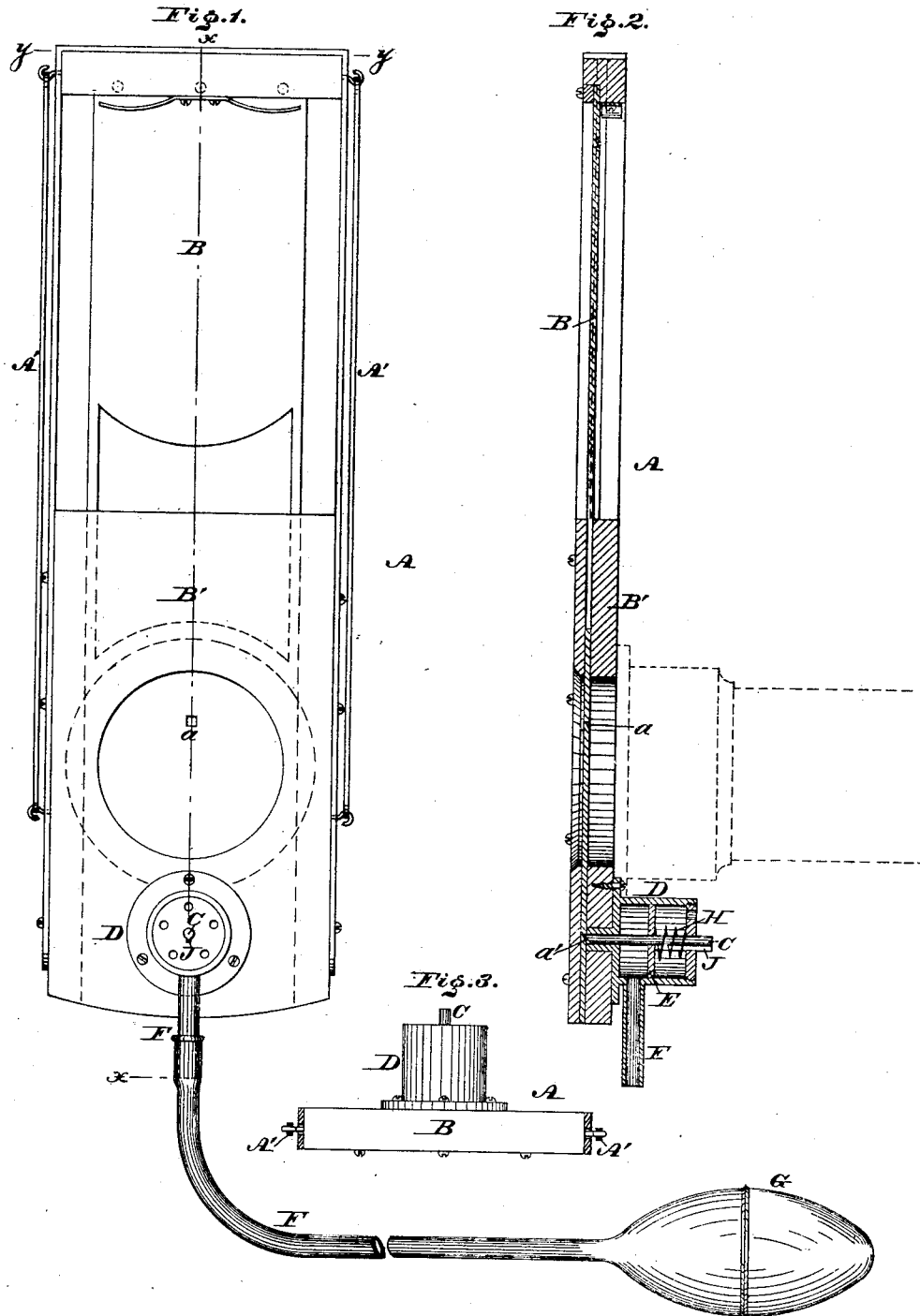
(No Model.)

C. H. MANN.

DROP SHUTTER FOR INSTANTANEOUS PHOTOGRAPHY.

No. 267,095.

Patented Nov. 7, 1882.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES H. MANN, OF PHILADELPHIA, PENNSYLVANIA.

## DROP-SHUTTER FOR INSTANTANEOUS PHOTOGRAPHY.

SPECIFICATION forming part of Letters Patent No. 267,095, dated November 7, 1882.

Application filed July 23, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. MANN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Drop-Shutters for Instantaneous Photography, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a view of one face of the drop-shutter embodying my invention. Fig. 2 is a section thereof in line *x x*, Fig. 1. Fig. 3 is a section thereof in line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

For instantaneous photography it is important to release the drop-shutter at the desired time in the quickest manner possible. In the operation of devices heretofore in use for such purpose there is delay, which seriously affects the work to be accomplished, to obviate which is the object of my invention. For this purpose I employ a blast of air in such manner that it may be directed against the head or piston of the holding-catch of the shutter, and thus promptly release said catch, the air-blast being readily and conveniently under control of the operator.

Referring to the drawings, A represents a drop-shutter for instantaneous photography, which, excepting as far as my invention relates to it, may be of usual form and construction. The sliding part B of said shutter is notched, as at *a a'*, for the engagement of a catch, C, which enters the notch *a* when the part B is to be held during the adjustment of the focus, and enters the notch *a'* when said part is fully set.

D represents a cylinder or air-chamber, which is secured to the frame B' of the shutter, and has within it a sliding head or piston, E, which is connected with the catch C. Communicating with the air-chamber in front of the piston is a tube, F, the end of which opposite to the air-chamber has attached to it a bulb, G, which may, however, be of the form of an air-pump, so that by the compression of the bulb or operation of the pump air may be forced into the chamber D, and thus move the piston and consequently the catch C. The catch is of the form of a pin or stem, having a beveled nose for automatically engaging with the notches *a*

*a'*, and is guided in plates at opposite ends of the chamber.

Within the chamber D is a spring, H, which bears against the back of the piston, for the purpose of returning the catch to its normal position and holding it engaged with the sliding part B of the shutter.

The operation is as follows: When the shutter is set and everything in readiness for photographing the object, the operator compresses the bulb G, thus forcing air into the chamber D and raising the piston E, the action of which is to withdraw the nose of the catch C from the notch *a'* of the part B, whereby the latter under impulse of its springs A' is moved and the instantaneous photography effected as usual. The said springs A' are connected at one end to the fixed part B' of the shutter and at the other end to the movable part B thereof. Any suitable fastenings for the springs may be employed, and, as shown in Fig. 1, said springs extend parallel along the outside of the shutter.

It will be seen that the operator may control the blast of air or compressed air to be directed to the chamber D and hold the bulb while watching the object about to be photographed. The bulb may thus be quickly operated at the correct time and the catch C instantaneously released, it being noticed that the movement of the piston is accomplished in an easy, powerful, and rapid manner, and the catch and part B are quickly disengaged without perceptible loss of time and without disturbing or jarring of the shutter.

In order to prevent rotation of the catch, I form on the side of the same a rib, J, which enters a slot in the outer wall of the chamber D, independent of that through which the catch passes, thus serving to guide the catch and always hold it in proper position for its nose to engage with the notch *a* or *a'*.

The spring at the head of the movable part B serves to ease the blow of the same when said part has been released by the catch.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A photographic drop-shutter provided with a catch, substantially as described, in combination with a chamber and air-forcing device or compressor whereby the air directed

into said chamber operates said catch, substantially as and for the purpose set forth.

2. The photographic drop-shutter provided with the catch C, in combination with the  
5 chamber D, head or piston E, tube F, air-forcing device or compressor G, and spring H, substantially as and for the purpose set forth.

3. The photographic drop-shutter and its

catch, in combination with the rib J, attached to said catch and guided to prevent rotation 10 of the catch, substantially as and for the purpose set forth.

C. H. MANN.

Witnesses:

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