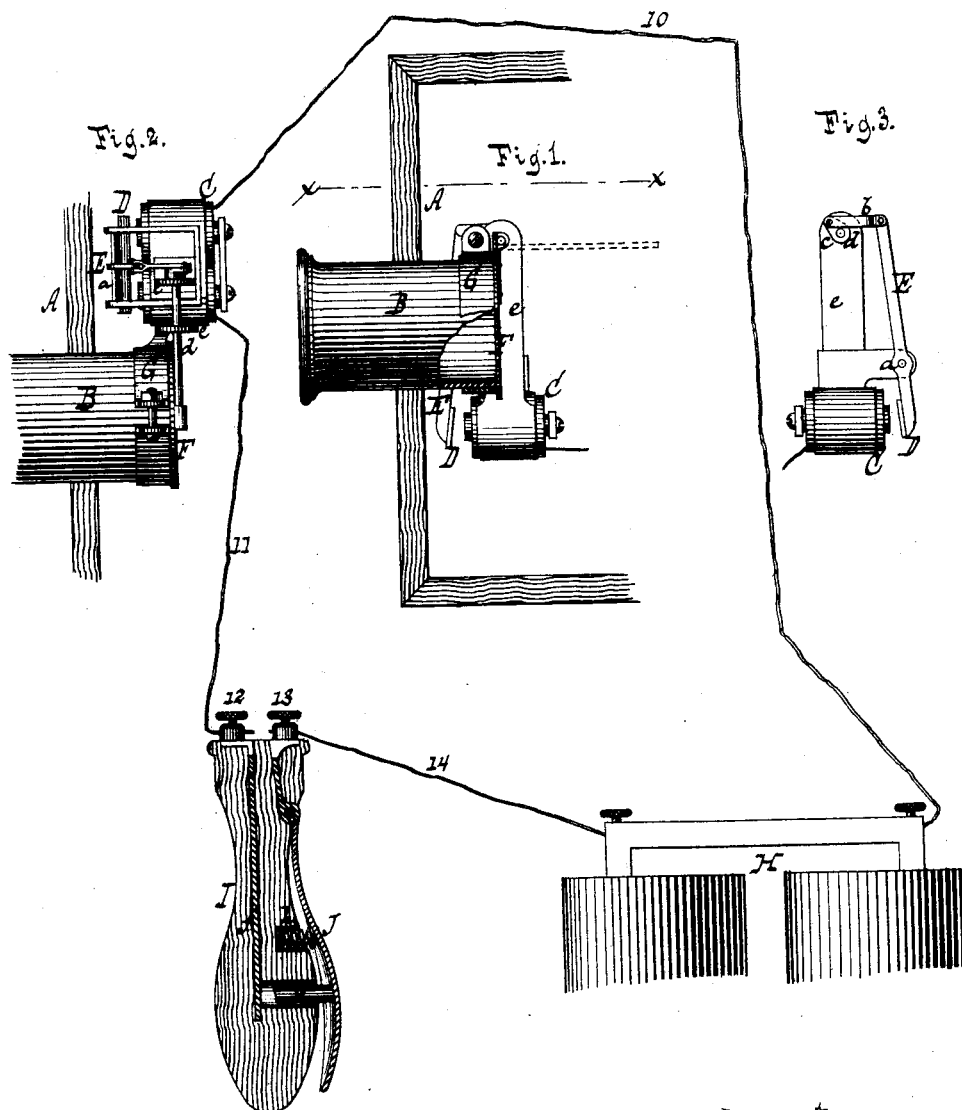


L. DAFT.  
Camera-Screen Attachment.

No. 221,670.

Patented Nov. 18, 1879.



Witnesses.  
Otto Stufeland  
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his attorneys.

# UNITED STATES PATENT OFFICE.

LEO DAFT, OF TROY, NEW YORK.

## IMPROVEMENT IN CAMERA-SCREEN ATTACHMENTS.

Specification forming part of Letters Patent No. **221,670**, dated November 18, 1879; application filed January 22, 1879.

*To all whom it may concern:*

Be it known that I, LEO DAFT, of Troy, in the county of Rensselaer and State of New York, have invented a new and Improved Screen Attachment to Photographic Cameras, which invention is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a sectional side view of my attachment. Fig. 2 is a sectional plan in the line *x x*, Fig. 1. Fig. 3 is a detached end view of my attachment.

Similar letters indicate corresponding parts.

My invention relates to a novel camera attachment consisting of a screen operated by an electro-magnet, and a clamping-ring serving as a stop or abutment for the screen, and by which the whole may be secured to the tube of a camera in such a position that when the armature of the magnet is not attracted by the electro-magnet the screen covers the lens-tube and shuts out the light from the interior of the camera; but as soon as the electro-magnet is vitalized, the screen is withdrawn from the lens-tube, thereby enabling the operator to move the screen instantaneously and in such a manner that in taking pictures of persons such persons will not perceive the operation of the screen. It also relates to the combination, with an electric circuit and electro-magnet arranged to operate a camera-screen, of a novel circuit-closer, which will be hereinafter particularly described.

In the drawings, the letter A designates a camera-box, which is provided with a lens-tube, B. With this camera-box is combined an electro-magnet, C, the armature D of which is secured to the lower end of a lever, E, which is mounted on a rock-shaft, *a*, Fig. 3. The upper end of this armature-lever connects, by a link, *b*, with a crank, *c*, mounted on the end of a rock-shaft, *d*, that has its bearings in standards *e*, rising from the frame which supports the electro-magnet C. On this rock-shaft is secured a screen, F, in such a position that when this screen is permitted to follow its inherent gravity, and to assume a vertical position, the armature D is thrown back from the electro-magnet; but when this electro-magnet is vitalized, and its armature is attracted,

the screen is caused to swing up to a horizontal position, and is retained in this position as long as an electric current is passed through the helix of the electro-magnet.

In the example shown in the drawings, the frame which supports the electro-magnet C is provided with a clamp, G, adapted to be secured to the inner end of the lens-tube, as shown in Figs. 1 and 2, so that the screen, when permitted to follow its inherent gravity, covers up the inner end of said lens-tube. It must be remarked, however, that I do not limit myself to the precise form or position of clamp shown, as these may be varied at will, provided the screen is brought in such a position that when it is down it shuts off the light from the lens-tube, and that when said screen is raised the light has free access through the lens to the interior of the camera.

The helix of the electro-magnet C is connected at one end by a wire, 10, to one pole of a galvanic battery, H, and at its other end, by a wire, 11, with a binding-screw, 12, on the end of a handle, I, which is provided with a thumb piece or trigger, which is in metallic contact with a binding-screw, 13, on the end of the handle that connects by a wire, 14, with the second pole of the battery H. From the binding-screw 12 extends a metallic plate, *f*, and in the trigger J is secured a metallic stud, *g*, so that by depressing said trigger the circuit through the electro-magnet C is closed. A spring, *h*, serves to throw the trigger back and to retain the stud *g* out of contact with the plate *f*.

In taking pictures of persons it is desirable that during the time of exposure such persons shall be kept free from all anxiety; but in the ordinary process of taking such pictures many persons become nervous at the moment they see that the exposure begins, and their features assume a strained look.

By my attachment the operator is enabled to raise the screen from the lens-tube by a simple pressure on the trigger J, and the person whose picture is taken remains entirely unconscious of the time of exposure, so that perfect pictures are obtained even from very nervous persons.

In the example shown in the drawings, the

screen, when in its normal condition, closes the lens-tube, and when said screen is actuated by the electro-magnet the lens-tube is opened.

It will be readily understood, however, that the effect of my attachment will be the same if the screen, when in its normal condition, leaves the lens-tube open, and closes the same when actuated by the electro-magnet. Such a device I consider a mechanical equivalent of the mechanism shown in the drawings.

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

1. The camera attachment consisting of a screen operated by an electro-magnet, and a clamping-ring serving as a stop or abutment for the screen, substantially as described, by which the whole may be secured to a camera-tube in such position that the said screen may, by the operation of the magnet, be caused to open and close the end of the tube, as desired.

2. The combination, with the lens-tube B, of the screen F, pivoted at one side of said tube, so as to close the end of the same, the

shaft *d* attached to and projecting from said screen, the lever E, connected by a link with a crank on said shaft and carrying the armature D, the electro-magnet arranged to attract said armature, a circuit connected with said magnet, and a circuit-closer arranged in said circuit, substantially as and for the purpose set forth.

3. The combination, with the circuit, an electro-magnet, and a camera-screen operated by said magnet, of the circuit-closer, consisting of the handle I, carrying the binding-posts 12 and 13, plate *f*, and the lever J, having a suitable stud or projection adapted to be brought in contact with said plate, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 26th day of December, 1878.

LEO DAFT. [L. s.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.