

A. JOHNSON.
Camera-Shutter.

No. 203,344.

Patented May 7, 1878.

Fig. 1

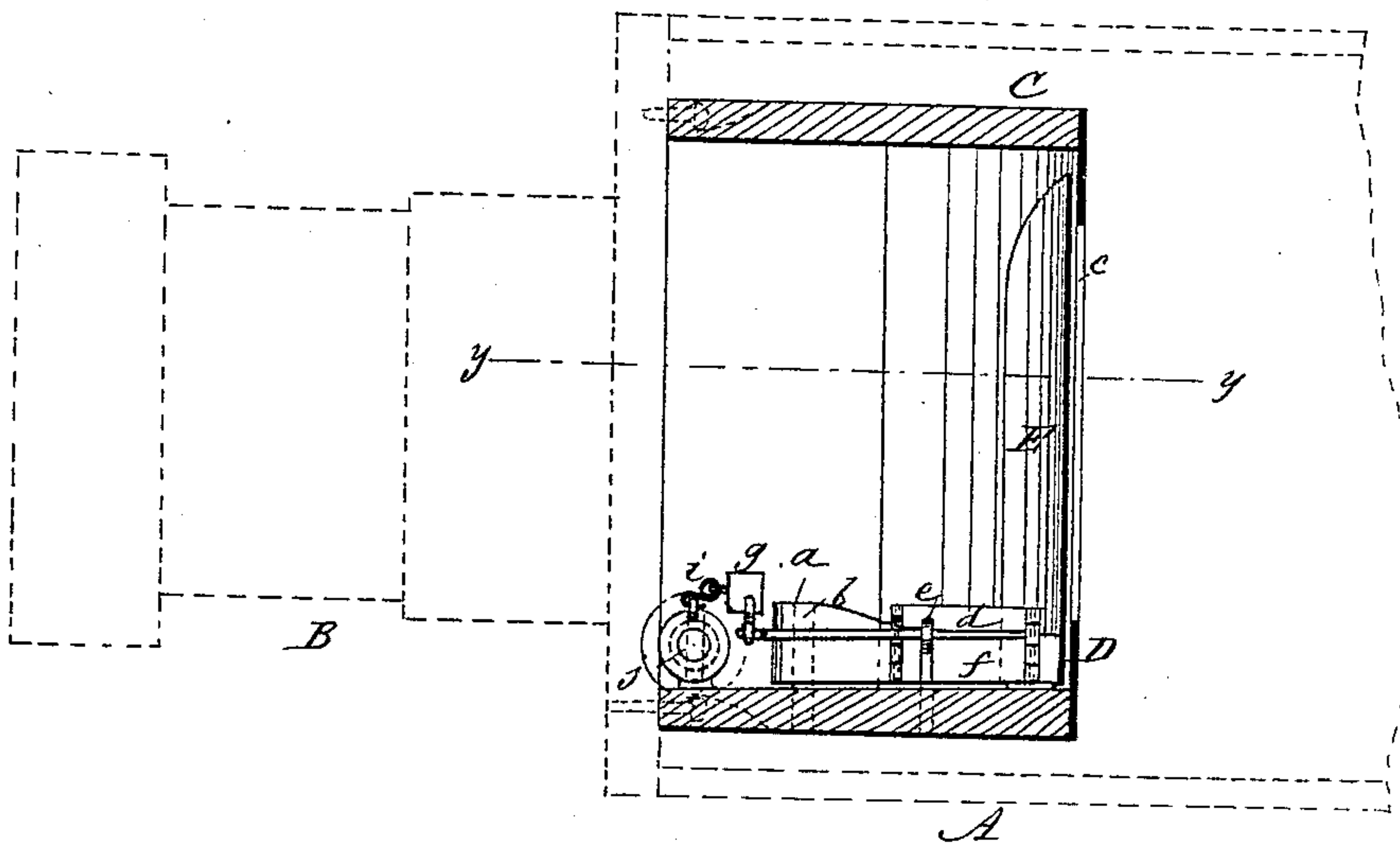
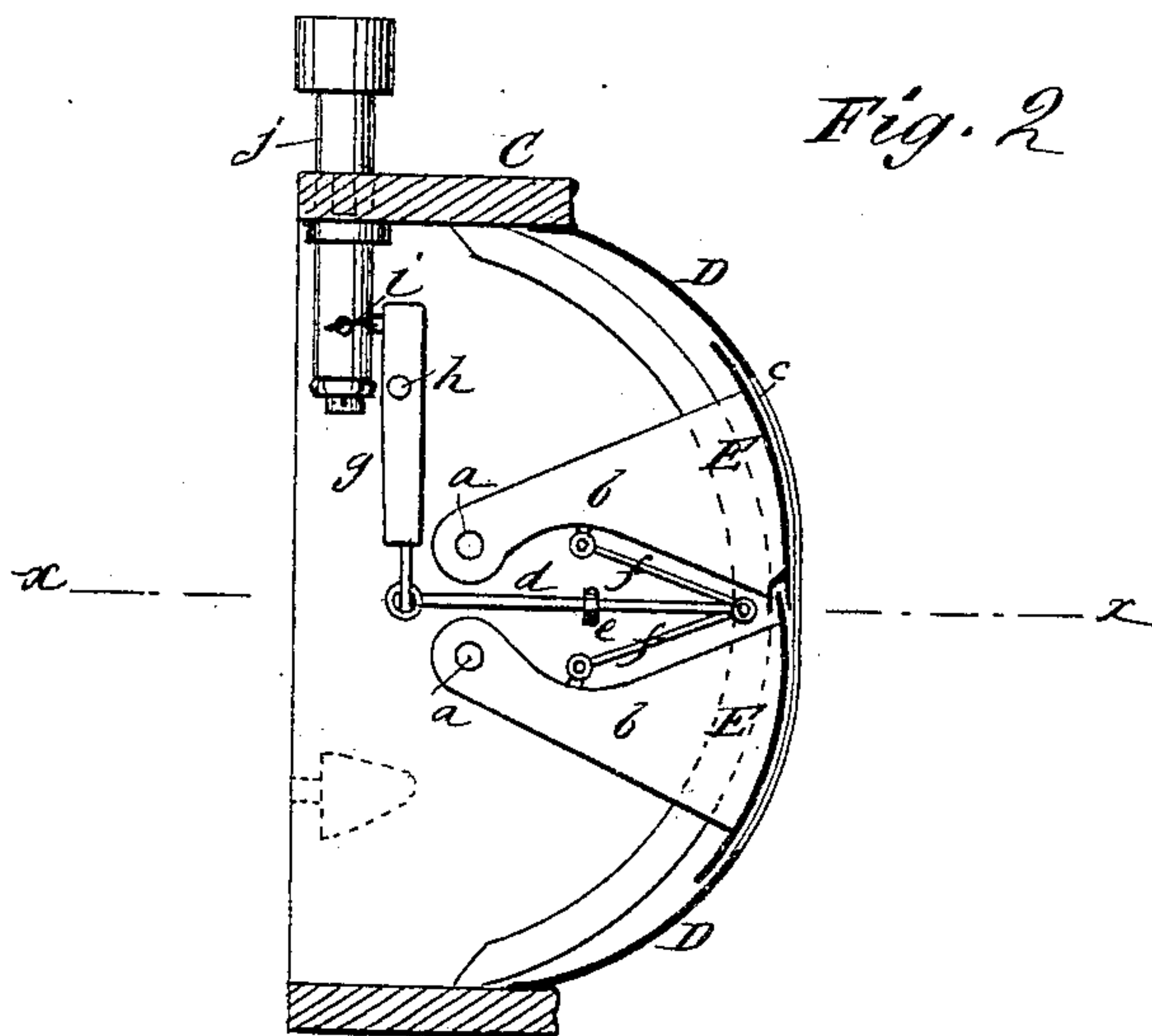


Fig. 2



WITNESSES:

C. Neveu
C. Sedgwick

INVENTOR:

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

ANDREW JOHNSON, OF KEWANEE, ILLINOIS.

IMPROVEMENT IN CAMERA-SHUTTERS.

Specification forming part of Letters Patent No. **203,344**, dated May 7, 1878; application filed March 22, 1878.

To all whom it may concern:

Be it known that I, ANDREW JOHNSON, of Kewanee, in the county of Henry and State of Illinois, have invented a new and Improved Camera-Shutter, of which the following is a specification:

Figure 1 is a vertical section taken on line *x x* in Fig. 2. Fig. 2 is a horizontal section taken on line *y y* in Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to photographic cameras; and it consists in interior swinging shutters of a novel construction, arranged to shut off the light passing through the camera-tube, the object being to provide a means of opening and closing the tube without the knowledge of the sitter.

Referring to the drawing, A is a camera-box, and B the camera-tube, both of which are shown in dotted lines. To the inner surface of the front end of the box is secured a box, C, which surrounds the tube-opening, and is provided with a thin metallic front, D, which is formed on two circular curves struck from the pivots *a* of the arms *b* of the curved shutter E. In the curved front D there is an aperture, *c*, which is sufficiently large to permit all of the light that passes through the tube to go to the focusing-glass or sensitive plate. The arms *b* are of sufficient vertical thickness to prevent them from tipping or wobbling on their pivots, and the shutters E are formed on a circular curve struck from the pivots *a*, and the meeting edge of one of them is grooved to receive the edge of the other when the two are closed together.

Between the arms *b*, and on the center line of the camera, a rod, *d*, is placed in the guide or eye

e, projecting upward from the bottom of the box C, and is connected at one end with the two arms *b* by links *f*, while the other end is jointed to the long arm of a lever, *g*, that is fulcrumed on a stud, *h*, that projects upward from the bottom of the box C. The shorter arm of the lever *g* is connected by link *i* with a short rocking shaft, *j*, that turns in bearings formed in the box C, and extends through the side of the camera-box, where it may be grasped and operated by the hand.

By means of the peculiar arrangement of the shutter-operating mechanism, the shutters may be quickly opened or closed by slightly turning the rocking shaft *j*.

The advantages gained by my improvement are, that the sitter is not startled when the plate is exposed in the camera, as is ordinarily the case when the tube-cover or a cloth is used; hence moving of the subject is avoided, and more perfect and natural pictures are secured. The shutters being formed on a curve and moving in a circle avoids the raising of dust when the tube is opened or closed.

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

1. A camera-shutter consisting of a curved apertured plate, D, the curved shutters E, and means for opening and closing the shutters simultaneously, substantially as specified.

2. The box C, having the curved and apertured plate D, the shutter E, links *f*, rod *d*, lever *g*, and rock-shaft *j*, in combination, substantially as shown and described.

ANDREW JOHNSON.

Witnesses:

JOHN ELLIS,
JAMES M. PARKS.