G. F KOLB.

CAMERA OBSCURA.

No. 34,970. Patented Apr. 15, 1862.

Fig. 1.

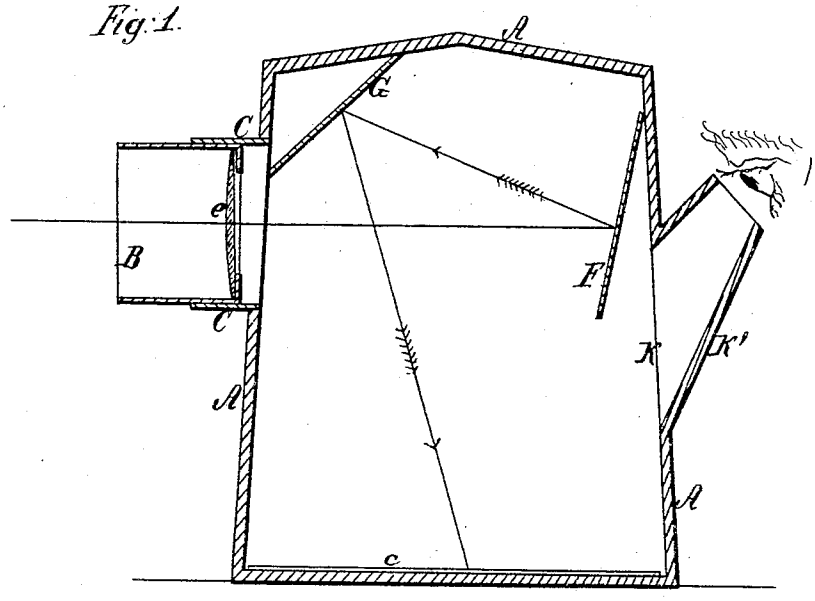
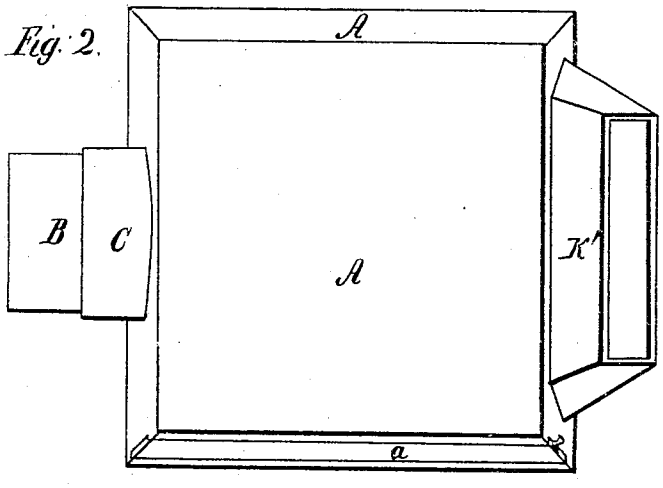


Fig. 2.



Witnesses;

Charles E Foster

Jas B Shrigley

Inventor;

Henry Howson

Atty for G. F. Kolb

UNITED STATES PATENT OFFICE.

GEORGE F. KOLB, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CAMERA-OBSCURAS.

Specification forming part of Letters Patent No. **34,970**, dated April 15, 1862.

To all whom it may concern:

Be it known that I, GEORGE F. KOLB, of Philadelphia, Pennsylvania, have invented an Improvement in Camera-Obscuras; 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, and to the letters of reference marked thereon.

My invention consists of a box of any suitable form with a lens-tube on one side and an eye-tube on the opposite side, in combination with two reflectors arranged in respect to each other and to the said lens and eye tubes, substantially as described hereinafter, and the whole forming a compact, cheap, and convenient camera-obscura, and one in which the objects reflected will appear to the observer the right side uppermost.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a vertical section of my improved camera-obscura; Fig. 2, a plan view.

A is a covered box or case, the form of which admits of many modifications, the interior being painted or otherwise blackened. To one side, and near the cover of the box, is secured a circular flange C, in which the tube B, with its lens *e*, fits snugly, but so as to be readily adjusted. In the opposite side of the case is cut an oblong opening K, which is surrounded by the oblong tube K′, the latter being placed at such an angle that on looking through it the entire or nearly the entire surface of the bottom of the box is exposed to view. Opposite to the lens-tube B, and in the interior of the box, is the reflector F, which is placed at such an angle as will cause the rays of light which pass through the lens *e* to be thrown into a second reflector G, the latter occupying such a position as to direct the rays of light onto a sheet of paper *c*, deposited on the bottom of the box. The left side of the latter may have an opening covered by a hinged door *a*, so that access may be had to the interior when the reflectors require cleansing or adjusting, and on the right-hand side of the box there may be another opening of such a size and form as to admit the hand and part of the arm when the figure reflected on the paper has to be traced, this opening being furnished with a dark cloth, which, while it permits the free movement of the hands and wrist, excludes the light from the interior of the box.

By arranging the eye-tube at one end of the box and the lens-tube at the opposite end the instrument affords better facilities for viewing and tracing objects than those of the ordinary construction, in which the eye-opening is placed at the side of the box. My improved camera, for instance, may be placed on a window-ledge with the lens presented to the object to be reflected, the observer being seated on a chair at the rear of the box, the object seen through the eye-tube appearing to the observer the right side up, owing to the use of the two reflectors. The latter, too, tend to reduce the focus, and consequently views covering a more extended area are presented on the paper than in ordinary instruments of much larger size, in which one reflector only is used.

I claim as my invention and desire to secure by Letters Patent—

A box A of any suitable form with the lens-tube B on one side and the eye-tube K on the opposite side, in combination with the two reflectors G and F, arranged in respect to each other and to the eye and lens tubes, substantially as and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

G. F. KOLB.

Witnesses:
HENRY HOWSON,
JOHN WHITE.