

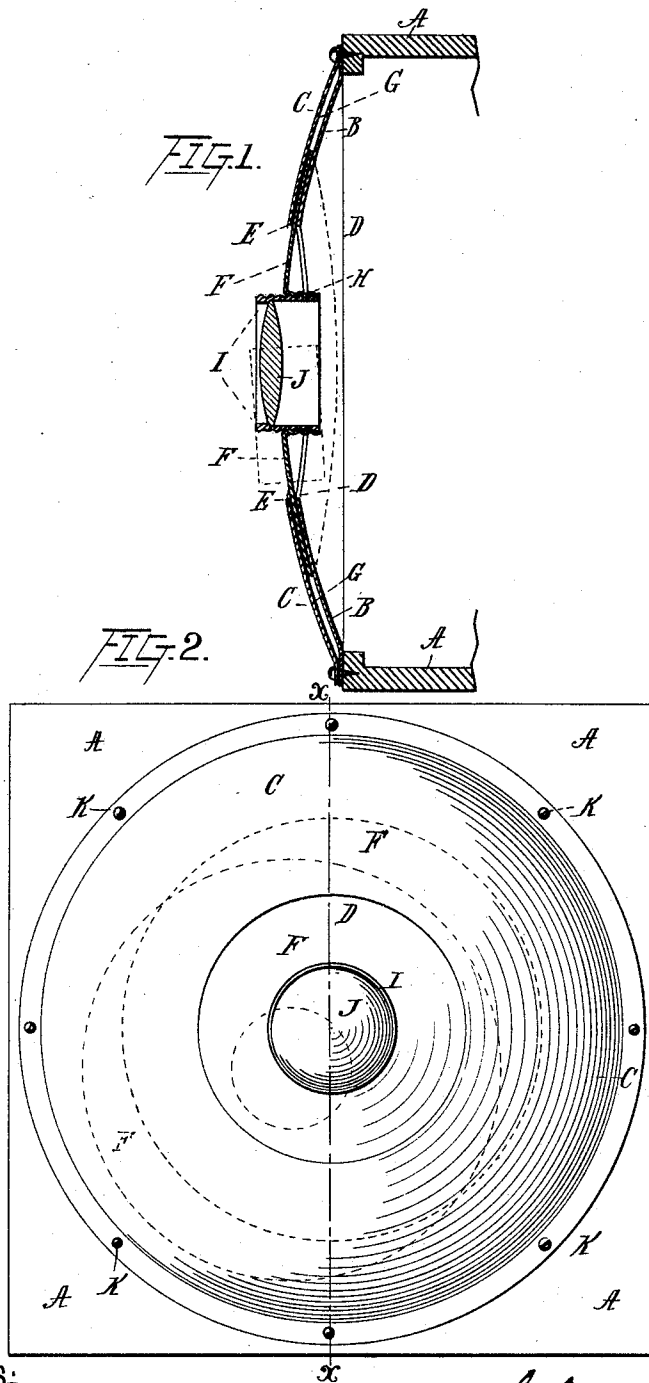
(No Model.)

C. MILLS.

LENS SUPPORTER FOR PHOTOGRAPHIC CAMERAS.

No. 464,462.

Patented Dec. 1, 1891.



WITNESSES:

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LENS-SUPPORTER FOR PHOTOGRAPHIC CAMERAS.

SPECIFICATION forming part of Letters Patent No. 464,462, dated December 1, 1891.

Application filed February 24, 1891. Serial No. 382,617. (No model.)

To all whom it may concern.

Be it known that I, CHARLES MILLS, a subject of the Queen of Great Britain, and a resident of New York city, in the county of New York and State of New York, have invented a certain new and useful Improved Lens-Supporter for Photographic Cameras, of which the following is a specification.

My invention relates to an improvement in photographic apparatus; and it consists in a novel construction and arrangement of the lens-holding mechanism, whereby the lens may be moved either vertically, horizontally, or at an angle of any desired degree after the fashion of the movement of the eye-ball in the human eye, so that the angle of the lens relative to a fixed ground glass or sensitive surface, as the case may be, may be changed in any desired manner for purposes which are well known in the photographic art, thus doing away with "swing-back" and "double-swing" attachments upon the plate-holding frame of the camera. This device is more compact, less liable to injury, much more satisfactory, and adapted to greater exactitude in position than any other means employed for accomplishing the stated object, as I believe.

In the drawings hereof, Figure 1 represents a vertical section of the line xx of Fig. 2. Fig. 2 represents an elevation as seen from the front.

A represents a portion of the box of the camera.

B is a concavo-convex circular plate of metal, preferably aluminium, copper, or brass, and C is a similar, although slightly larger, plate placed over the plate B. The inner plate B is perforated with an annular opening of considerable area, as at D, and the outer one is likewise perforated, as at E.

F is a plate having the same concavo-convex contour that the others have. It is placed between them and slides in the recess G between the two plates. The fit is made a somewhat snug one, so that the plate F will maintain such position as may be given to it. It is of course of less diameter than the other plates, and in its central portion there is soldered or otherwise fastened an annular threaded sleeve H, the threads in which are pref-

erably quite large and are nicely smoothed, so that a lens-holding tube I, which is correspondingly threaded on its exterior, may by its rotation be screwed into and out of the part H for the purpose of focusing the lens, which is shown at J. The plates C and B are attached to the front of the camera-box by screws K or in any other preferred manner.

The operation is as follows: The focusing may be wholly or partly secured by running the lens-tube I inwardly or outwardly by its rotation and the engagement of its threads with the threads in the part H, as already set forth, and when the photographer desires to change the angle of his lens relative to the ground glass or sensitive surface he simply takes hold of the projecting portion of the lens-tube I and moves the plate F into exactly the position he desires it, whether up or down, to the right or left, or to any intermediate angle. This is done very rapidly with perfect ease and absolute accuracy, and the lens remains exactly in position where he puts it by reason of the impact or squeeze of the plates B and C. It is obvious that the area of this opening may be such as desired and that the size of the inner plate F should be such as to always close the opening, thus compelling the light to enter through the lens only.

I do not limit myself to the details of construction shown and described, because they may be somewhat varied and still the essentials of my invention be employed.

I claim—

1. A lens-holding apparatus for photographic cameras comprising an inner and an outer concavo-convex metallic plate, each having a hole in it, said plates having a recess between them which extends from near their outer edges toward their centers, and a circular lens-supporting plate operating between them, substantially as set forth.

2. The combination, in a lens-supporting device, of an inner and an outer plate having a circular opening between them, another circular plate of smaller diameter placed between them and adapted to move in all directions laterally, a threaded sleeve attached to the movable plate, and a threaded lens-holding tube or frame, substantially as set forth.

3. In a lens-supporting device, the combination of two concavo-convex plates, each having an aperture, a third concavo-convex plate, of the same contour but of less diameter, placed between them, and a lens supported by the smaller plates by means of a threaded connection, whereby the lens may be run in or out for focusing, substantially as set forth.

4. In a lens-supporting device, the combination of two concavo-convex plates, each having an aperture, and said plates having a chamber between them extending from near

their edges toward their centers, a third concavo-convex circular plate, of the same contour but of less diameter, placed between them, and a lens supported by the smaller plate, substantially as set forth. 15

Signed at New York, in the county of New York and State of New York, this 20th day of February, A. D. 1891.

CHARLES MILLS.

Witnesses:

PHILLIPS ABBOTT,
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