(No Model.)

2 Sheets—Sheet 1.

C. QUARTLEY.

PHOTOGRAPHIC CABINET.

No. 450,475. Patented Apr. 14, 1891.

Fig. 1

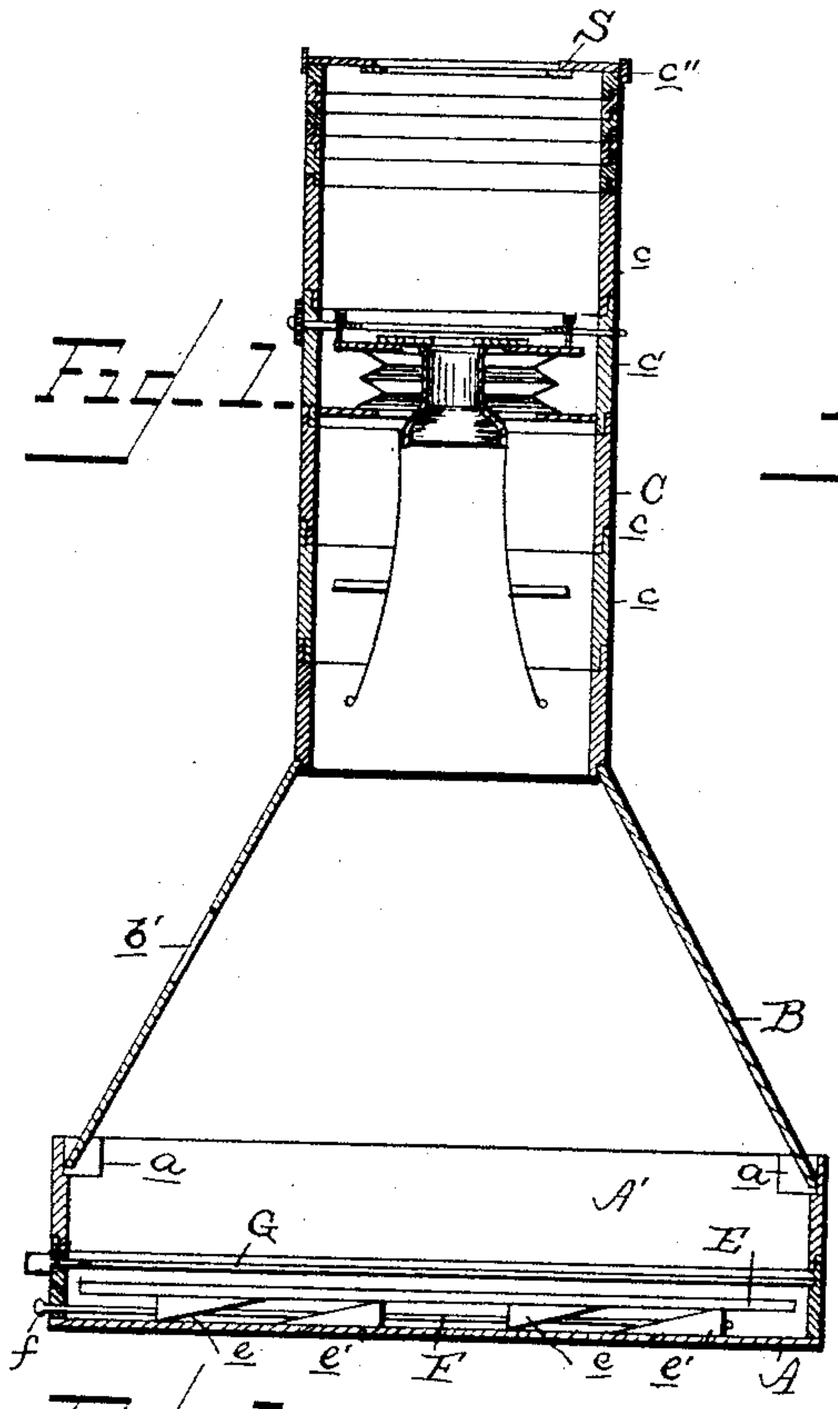


Fig. 2

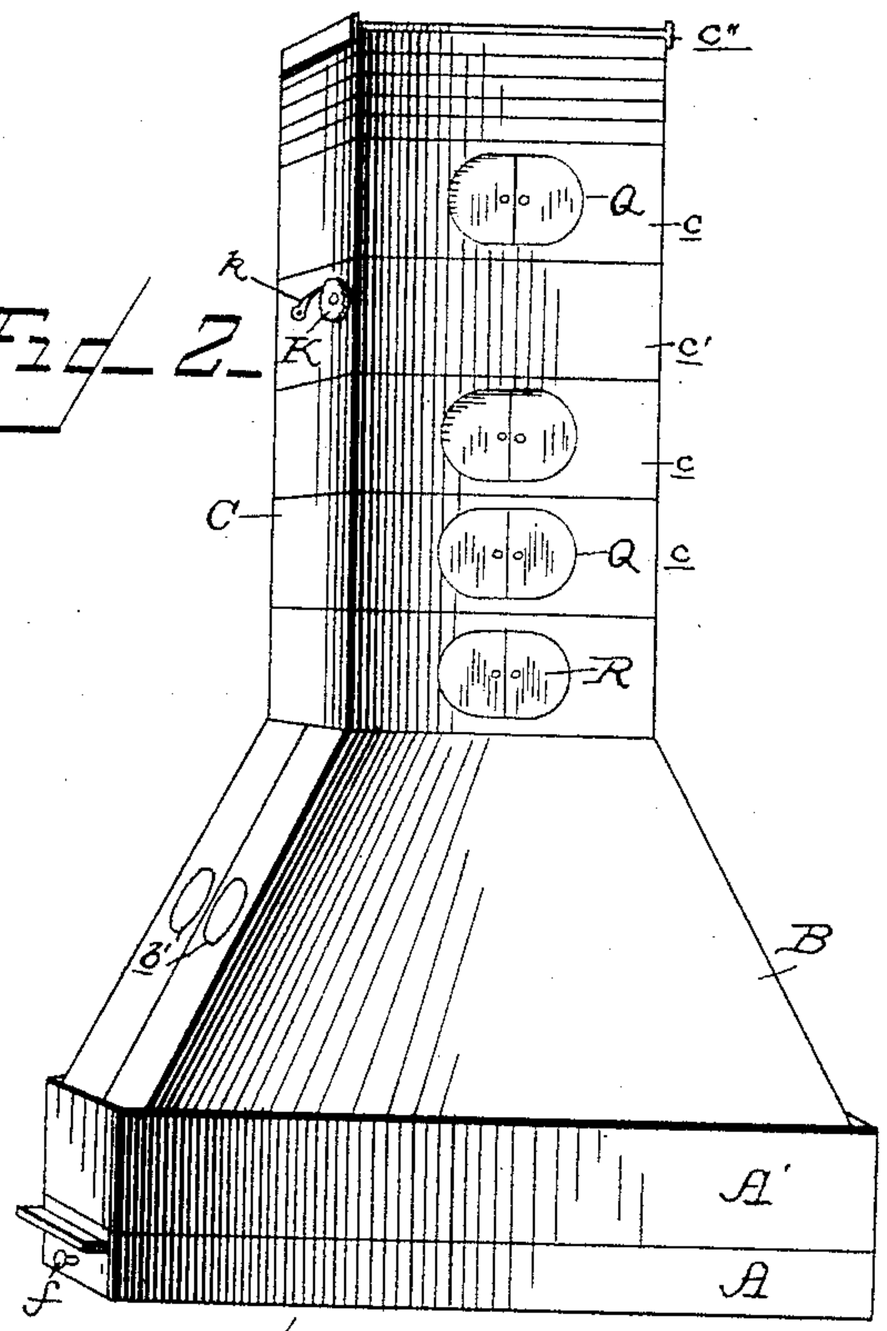


Fig. 3

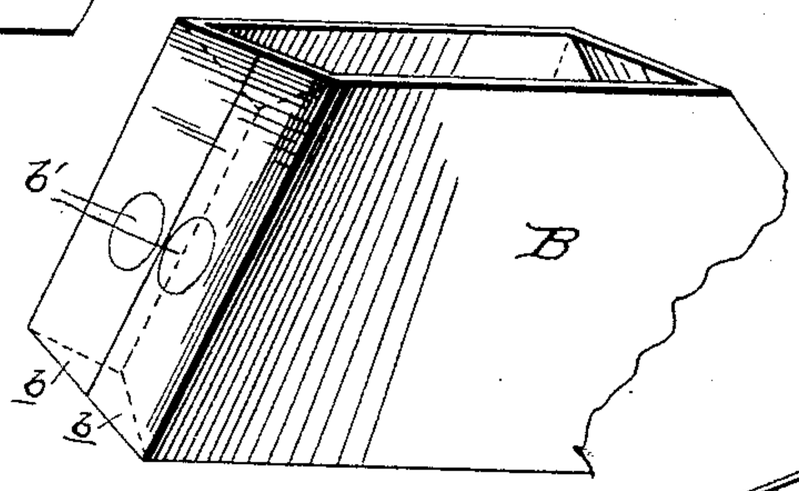


Fig. 4

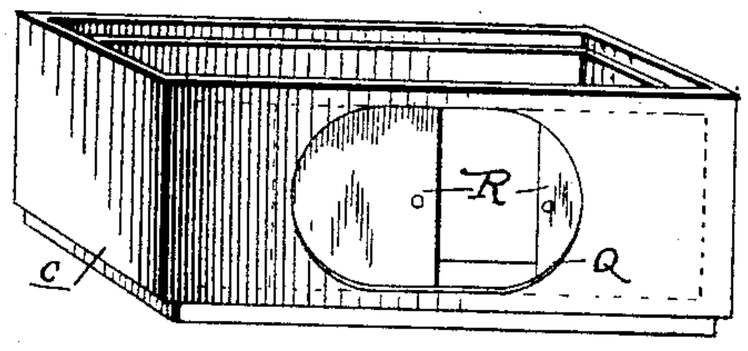
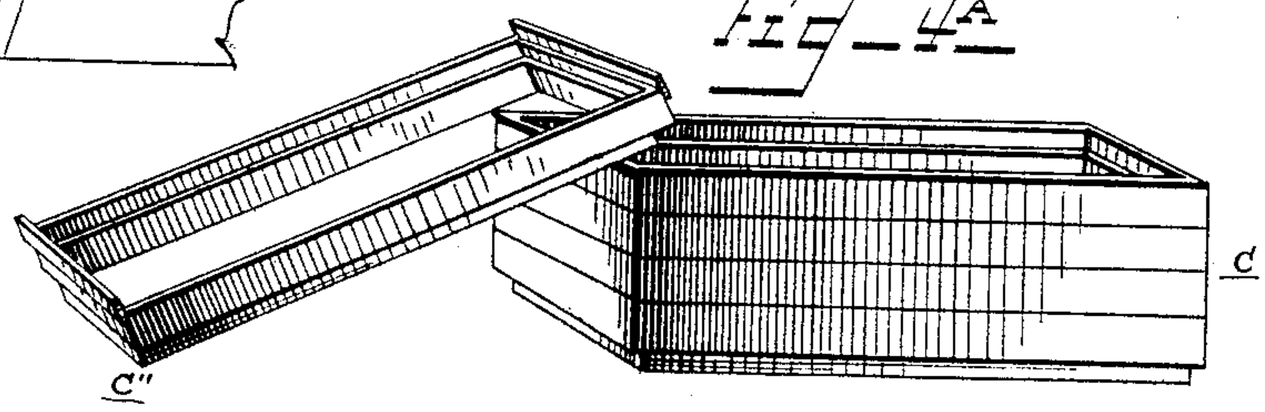


Fig. 4A



Witnesses
Thos. E. Robertson
M. White

Inventor
Charles Quartley
By T. J. W. Robertson
Attorney

(No Model.)

2 Sheets—Sheet 2.

C. QUARTLEY.

PHOTOGRAPHIC CABINET.

No. 450,475. Patented Apr. 14, 1891.

Fig. 5.

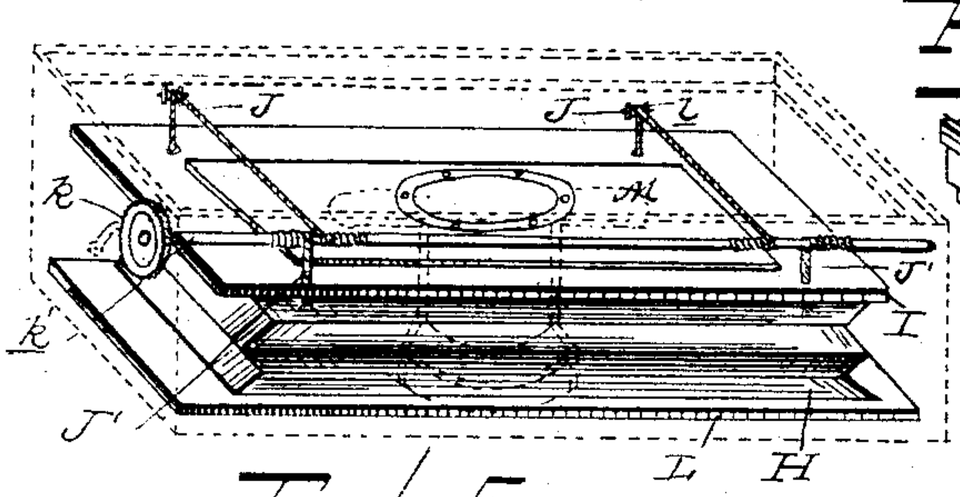


Fig. 6.

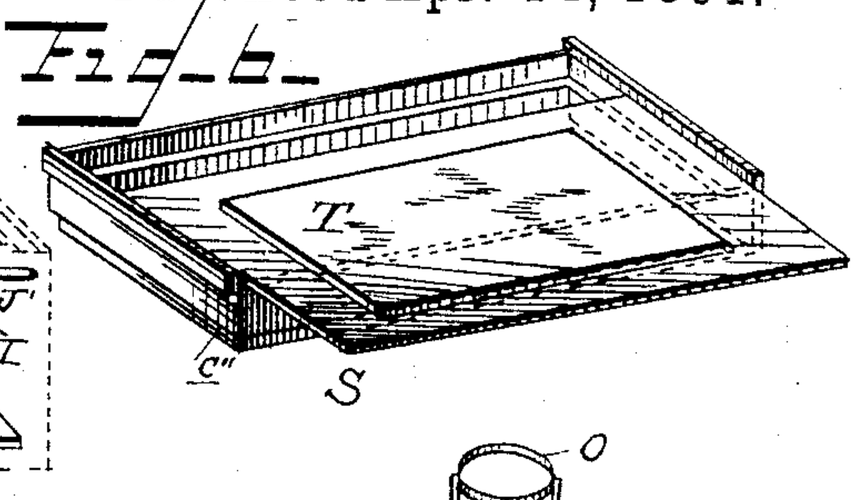


Fig. 7.

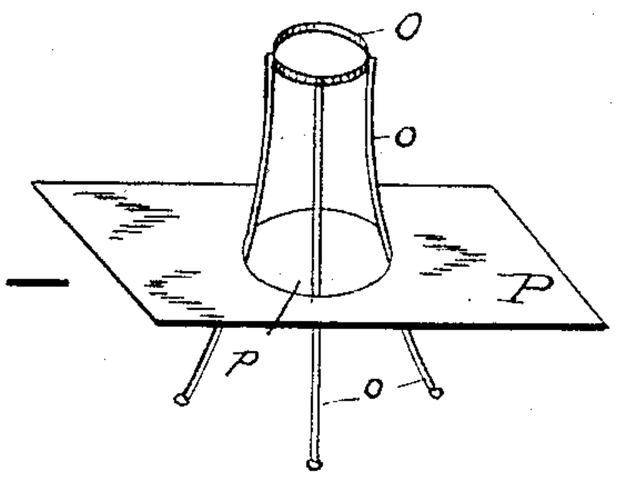


Fig. 8.

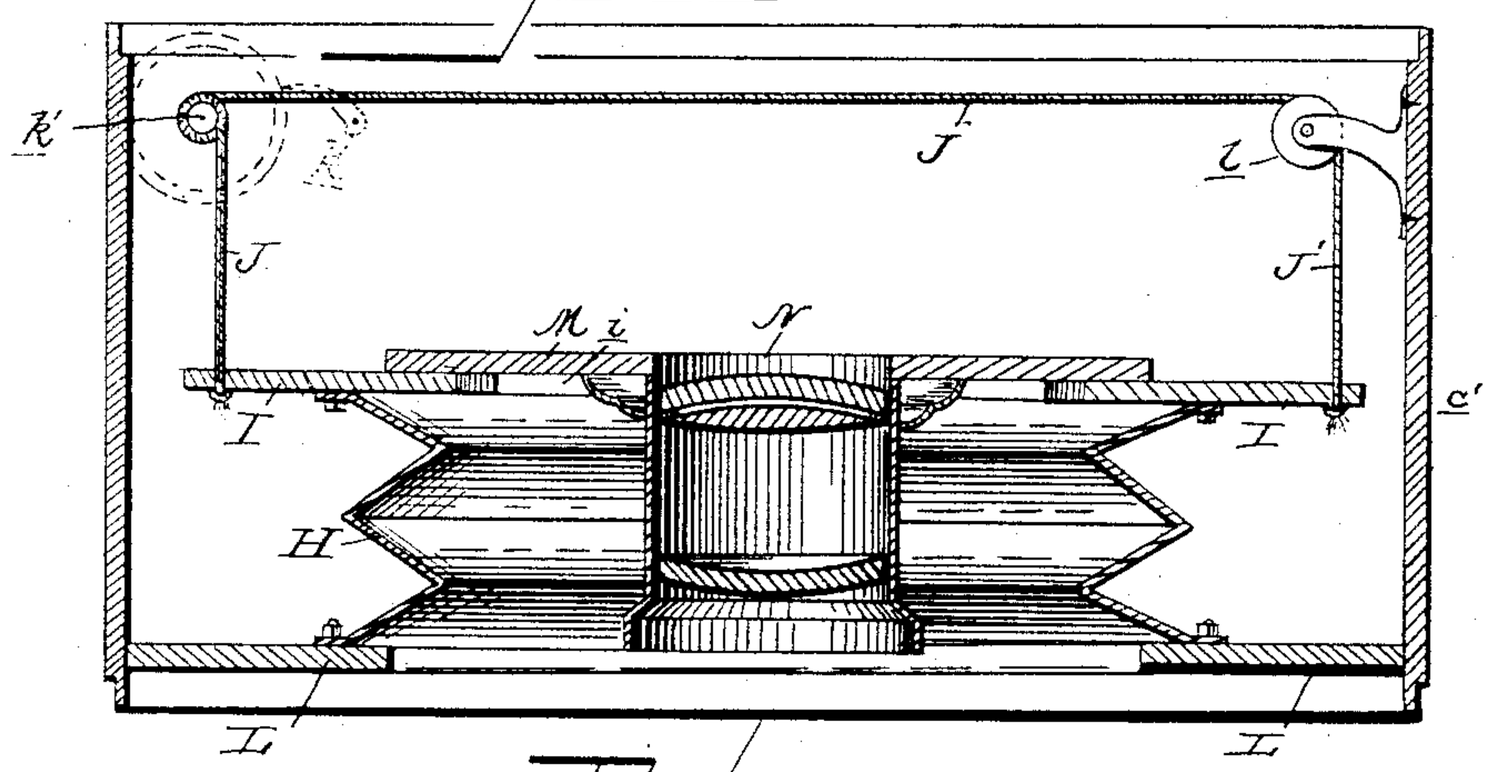
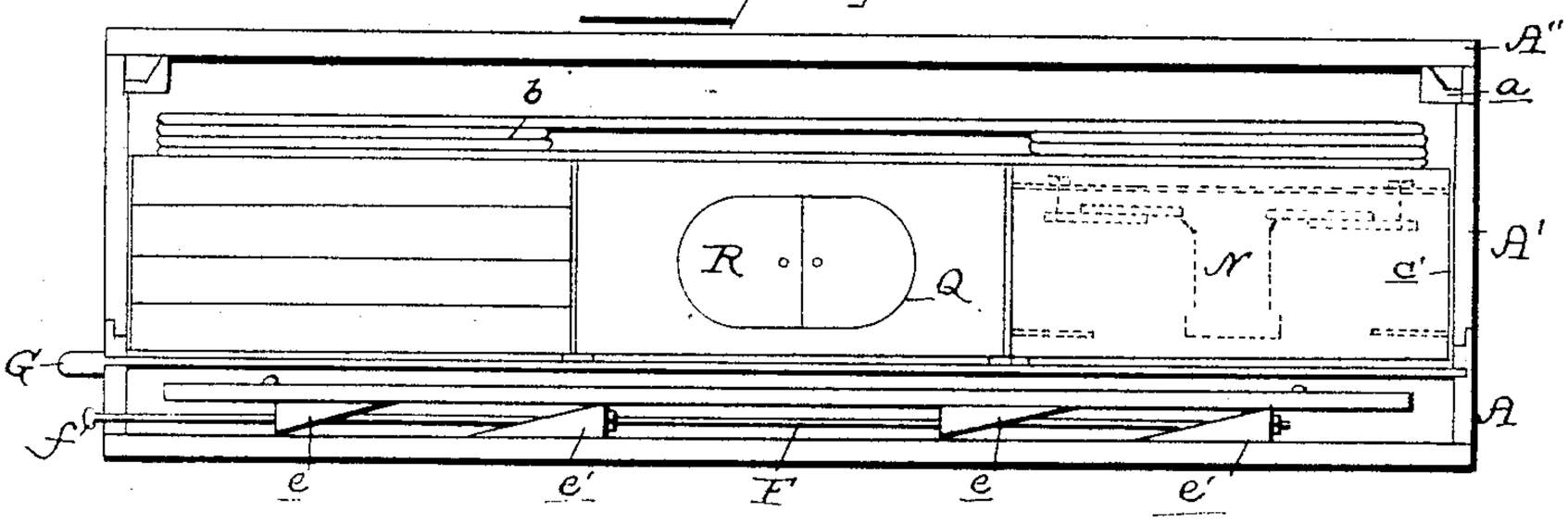


Fig. 9.



Witnesses
Thos E. Robertson.
M. O'White

Inventor
Charles Quartley
By T. J. W. Robertson
Attorney

UNITED STATES PATENT OFFICE.

CHARLES QUARTLEY, OF BALTIMORE, MARYLAND.

PHOTOGRAPHIC CABINET.

SPECIFICATION forming part of Letters Patent No. 450,475, dated April 14, 1891.

Application filed June 24, 1890. Serial No. 356,573. (No model.)

To all whom it may concern:

Be it known that I, CHARLES QUARTLEY, a subject of the Queen of Great Britain, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Photographic Cabinets, of which the following is a specification, reference being had therein to the accompanying drawings.

This improvement relates to an apparatus more particularly adapted to the process known to the photographic profession as "bromide enlargement;" but parts of it may be usefully employed for other purposes. Heretofore this class of work necessitated the setting apart of a special room of considerable size from which every ray of white light had to be excluded except through one small aperture for the reception of the negative to be enlarged, and through which the image was reflected on the enlarging tablet or screen. By my improved cabinet the same results may be accomplished in the open air, under a skylight, or any place having an unobstructed top light, the development, of course, being carried on in a dark-room the same as for all sensitive plates or papers.

In the accompanying drawings, which show what I now consider to be the preferable way of carrying out my improvement, Figure 1 is a central vertical section of a cabinet constructed according to my improvement. Fig. 2 is a perspective view of the same. Fig. 3 is a similar view of a folding cap to the base detached. Figs. 4 and 4ª show similar views of the plain sections of the adjustable extensible tube detached. Fig. 5 is a similar view of the lens-section detached, with the frame of the section in dotted lines to more clearly show the remainder. Fig. 6 is a similar view of the top section with negative resting thereon, detached. Fig. 7 is a similar view of a vignetting device detached. Fig. 8 is another central vertical section of the lens-section from another point of view and on a larger scale, showing more clearly the construction of the adjusting device. Fig. 9 is an elevation with one side of the base removed, showing the entire cabinet packed in the base for transportation or storage.

Referring now to the details of the drawings by letter, A A′ represent an oblong base, preferably of light wood-work, although other material may be used, on which rests an inclined cap B, whose lower end sets in a rabbeted frame *a*, fitted or attached to the base A′. Above this cap is a preferably rectangular tube C, made up of plain box-sections *c c c* of different depths, a lens-section *c′*, and a negative holder or section *c″*. Each of these sections *c c c′ c″* has a rabbeted bottom, as shown in Figs. 4 and 4ª, adapted to fit in the one next below it, making a tight light-proof joint, and are made to be interchangeable in position, so that by arranging them in different positions the relative distances between the negative resting on the top section, the lens, and a tablet in the bottom of the base may be varied at will, so as to enlarge the image on the negative to any required size on the exposed paper on said tablet.

Having thus given a general description of my apparatus, I will now refer to the more minute details.

The base comprises two parts A and A′ of unequal depths, connected by a rabbeted joint *a′*, and the upper one A′ having a rabbeted frame *a* to receive the lower edges of the cap B. The lower part A contains a tablet E, having wedges *e* fastened beneath the same. Resting on the bottom of the base are other wedges *e′*, which are connected together by a rod F, having one end projecting through the side of the part A, on which end is a knob *f*. These parts are so arranged that by pulling on the knob *f* the wedges *e′* pass under the wedges *e* and raise the tablet E, while a reverse movement (after the tablet has been raised) will lower the same. Above the tablet is a slide G, the upper side of which is made white, the better to observe the image thrown down by the lens from the negative.

The cap, for convenience of transportation or storage, I prefer to make of binders' board and with folded ends *b* adapted to fold inward, as shown in dotted lines in Fig. 3, so that it can be folded close together, as shown at B in Fig. 9. At one end of the cap are two openings *b′ b′*, through which the image thrown on the slide G by the lens may be seen, which openings must be provided with covers to prevent access of light when the sensitive paper is being exposed.

The lens-section *c′* is provided with a "fine"

focusing device, (best shown in Figs. 5 and 8,) comprising separate pieces of cord, catgut, or other suitable material, which pass through it at the four corners. Two of these pieces J J are attached directly to the focusing-rod *k'* immediately above them, one at each end of it, (see Fig. 5,) while the other two pieces J' J' on the opposite side of the tablet are first passed over the tablet to the focusing-rod *k'* and then attached thereto at a sufficient distance apart to prevent any interference with each other, and before making them fast permanently it is necessary that the tablet shall have been made to hang level. The action of revolving the milled head K to the right will raise the tablet as high as the bellows H will allow it to go, and the pawl *k* will hold it in position, while a reverse movement will lower it by its own weight, by which means any desired focus can be obtained, and the tablet I fixed in that position by the pawl *k* pressing against the milled head K.

The bellows H is attached at its top to the under side of the tablet I, while the bottom is made fast to the fixed frame L at the base.

The tablet I has an oblong opening *i*, (shown in dotted lines in Fig. 5,) which is covered by a slide M, carrying the lens-tube N, at the bottom of which may be set the vignetting device, (see Fig. 7,) consisting of a ring O tightly fitting on the bottom of the lens-tube and having spring-wire arms *o*, which carry the vignetter P, having an opening *p*, through which the light passes so as to reflect only that portion of the picture desired to be produced. The spring-arms allow of the vignetter being set in any desired position for condensing or expanding the light.

In the side of each of the larger sections, except the lens-section, is an opening Q, (see Fig. 4,) through which the lens-tube or vignetter may be moved, as desired, from left to right, as shown in Fig. 5, which opening may be closed by the sliding doors R. (Shown partly in dotted lines in Fig. 4.)

The upper section or negative-holder *c''* is provided with a "kit" S, which slides in grooves in the ends of the upper section, which kit receives the negative T, and by means of which it can be adjusted from back to front of said section.

The operation is as follows: The sensitive paper is placed on the tablet E when in its lowest position, and is protected from exposure by the slide G, and then the upper part of the base A' and the cap B is set in position, and as many of the sections *c* as it is thought to be necessary are placed above them, over which is placed the lens-section *c'*, and then more sections *c* (generally the shallowest) are put over the lens-section, and above all is placed the negative or top section *c''*, having the kit S, on which is placed the negative T. The image is then examined through the openings in the cap, and if it appears to be of the desired size it is properly centered by moving the lens from right to left, or the kit S backward or forward until the right position is obtained. If the size of the image is not exactly correct, it may be modified by changing the positions of the sections or removing some of them entirely. For instance, if the image is too large, one of the sections between the lens-section and the cap may be removed. If too small now, one of the shallow boxes may be placed between the lens-section and cap. Changes may also be made by varying the distance between the top and lens sections by removing one or more of the sections between them. By thus varying the relative distances between the negative, the lens, and the slide G, any desired size of image may be shown upon the latter. After the general focusing has been obtained the fine focusing for sharpness may be readily done by moving the lens-tablet up or down by turning the milled head K. When the desired size of image is obtained on the white slide G and has been fine-focused by the aid of the mechanism of the lens-section, any opaque covering is laid on or over the negative, or a pneumatic or other shutter used to exclude all light from entering the cabinet, and the openings *b' b'*, Figs. 2 and 3, are closed. The slide G, which received the image, must be withdrawn and the rod F pulled out until the wedges *e' e'*, Figs. 1 and 9, raise the sensitive paper attached to the tablet E (which has hitherto been protected from the action of the light by the slide G) until it takes the same position or distance previously occupied by the slide G. An exposure of a few seconds by the removal of the opaque cloth or opening of the shutter is all that is necessary, when the rod F is pushed back, which will drop the paper and tablet in their original position and the slide can be replaced, the whole upper portion of the cabinet above the rabbeted joint *a'*, Fig. 1, be lifted off, and the lower portion with the slide and sensitive and exposed paper be removed to the dark-room and developed in the usual way. After the sensitive paper has been developed, if no further present use is to be made of the cabinet, all the parts above the base A A' may be set inside of said base, as shown in Fig. 9, and in this state stored away until again wanted for use. For convenience of transportation or to keep the dust out when stored, I prefer to provide the part A' with a cover A'', which may be hinged thereto; but this forms no part of the operative device.

While I prefer as a matter of economy to make the sections of the tube, base, &c., of wood, I do not limit myself to this, as it is evident that these parts may be made of metal, or even of heavy paper or straw board.

Having thus shown one way of carrying out my invention, but without limiting myself to the exact construction shown, I claim as new—

1. In a photographic cabinet, the interchangeable sections for varying the relative distance between the lens and the sensitive-paper holder, substantially as described.

2. In a photographic cabinet, the interchangeable sections between the lens and the negative-holder, substantially as described.

3. In a photographic cabinet, and in combination with a lens and a base, as A A′, a series of interchangeable sections between the lens and said base.

4. In a photographic cabinet, the combination, with a base, as A A′, and a lens, of a tapering cover B, and a vertical tube C, carrying the lens and the negative-holder, substantially as described.

5. In a photographic cabinet, the combination, with a base, as A A′, and a lens, of a tapering folding cover B, and a vertical tube C, carrying the lens and the negative-holder, substantially as described.

6. In a photographic cabinet, the combination of a base A A′, the cover B, having openings *b′ b′*, and a vertical tube C, carrying the lens and negative-holder, substantially as described.

7. In a photographic cabinet, the combination of the two-part base A A′, the slide G, and adjustable tablet E, contained in said part A, a tapering cap B, and a vertical tube C, carrying the lens and negative-holder, substantially as described.

8. In a photographic cabinet, the combination of the two-part base A A′, the slide G, and adjustable tablet E, contained in said part A, the tapering cap B, and the vertical tube C, made up of sections *c c′ c″*, substantially as described.

9. In a photographic cabinet, the combination, with a tablet E, having wedges *e*, of the adjustable wedges *e′ e′*, substantially as described.

10. In a photographic cabinet, the combination, with a lens, of a support for the same, as the tablet I, and means, as the rod *k′* and cords J J′, for raising and lowering the lens-support, substantially as described.

11. In a photographic cabinet, the combination, with a lens, of a tablet I, carrying the lens, the cords J J′, the rod *k′*, the milled head K, and the pawl *k* for securing the lens in the desired position, substantially as described.

12. In a photographic cabinet, the vignetting device consisting of a ring O and spring-arms *o* for carrying the vignetter P, having opening *p*, substantially as described.

13. In a photographic cabinet, the lens-section herein shown and described, comprising a frame, an adjustable tablet having an opening for the lens, a bellows connected to the tablet and frame, a slide I, covering the opening in said tablet, and a lens supported by said plate, substantially as described.

14. In a photographic cabinet, the combination of the base A A′, the folding cap B, the interchangeable sections *c c*, lens-sections *c′*, and negative-sections *c″*, all constructed and arranged as shown, whereby the parts above said base may be packed within the same, substantially as shown and described.

In testimony whereof I affix my signature, in presence of two witnesses, this 21st day of June, 1890.

CHARLES QUARTLEY.

Witnesses:
R. D. JONES,
CAREY HALL.