3 Sheets--Sheet 1.

J. & J. STOCK.
Cameras.

No. 156,106. Patented Oct. 20, 1874.

Fig. I.

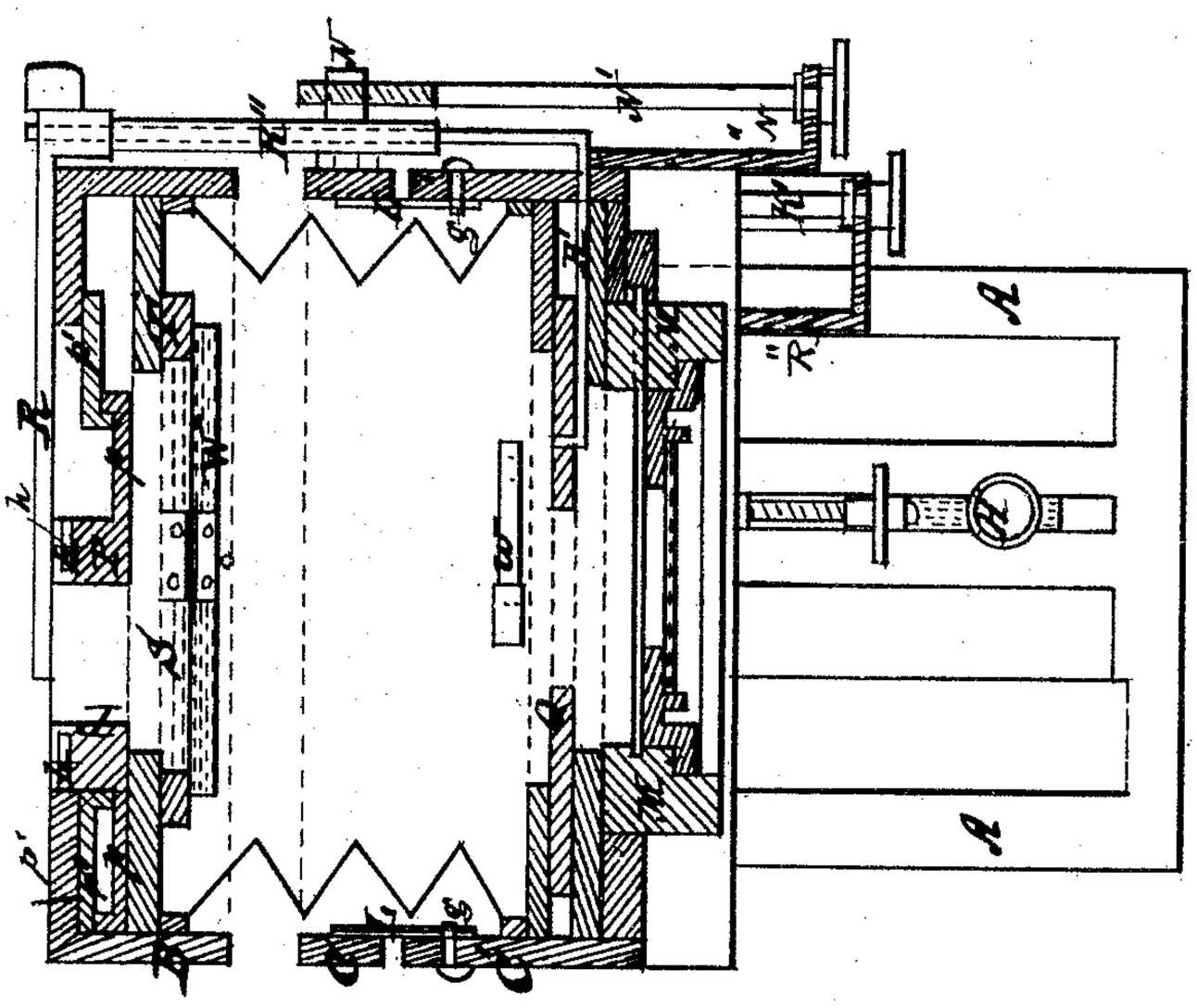

Fig. II.

Witnesses
C Monton
A E Collins

Inventors.
John Stock & Jacob Stock
per Henry E Roeder
attorney.

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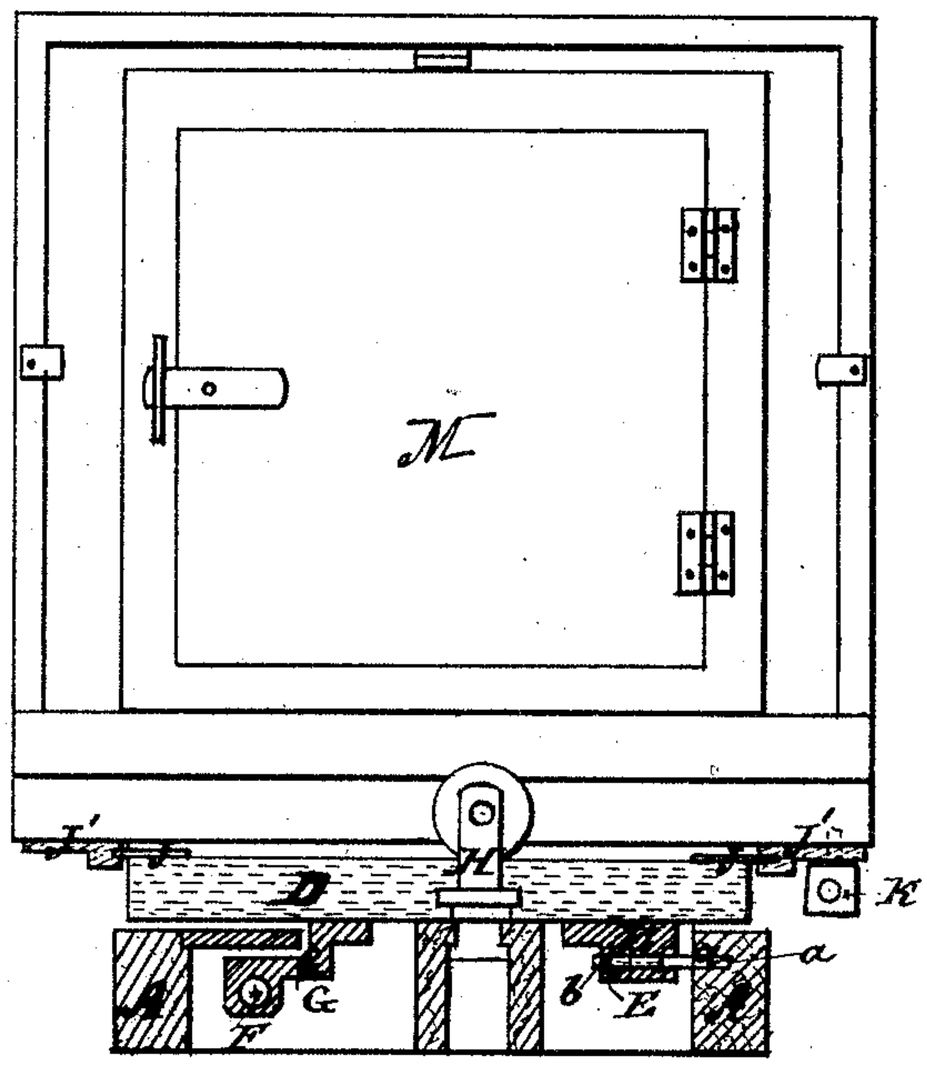
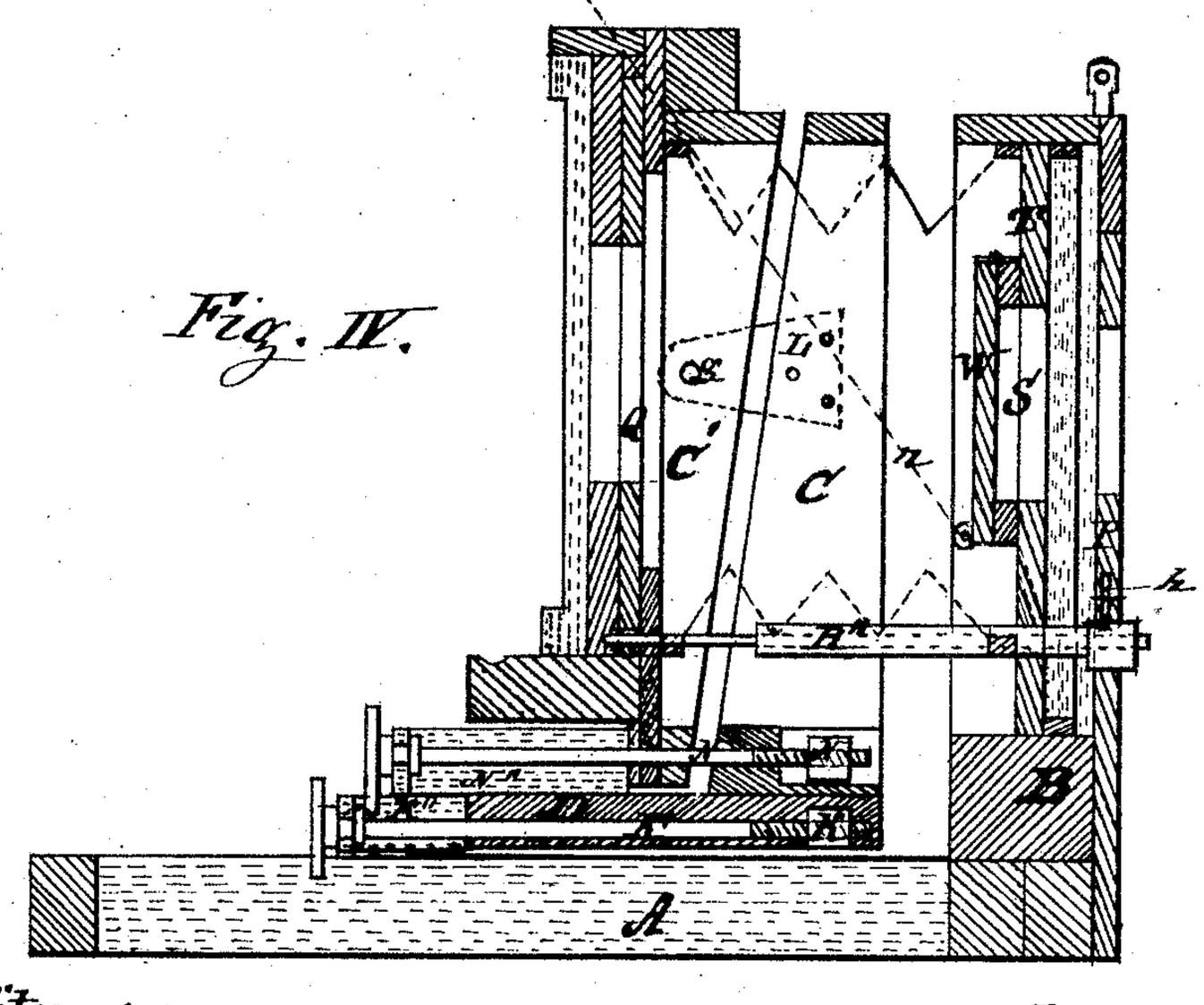


Fig. III.

Fig. IV.



Witnesses.
C. Thornton
A. E. Collins

Inventors.
John Stock & Jacob Stock
per Henry E. Roeder
Attorney.

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3 Sheets--Sheet 3.

J. & J. STOCK.

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Fig. VII.

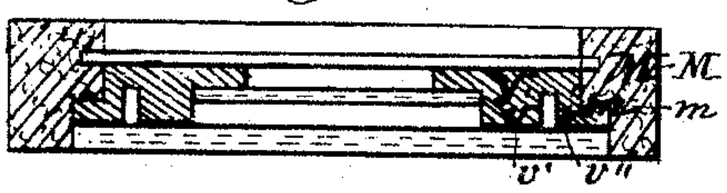


Fig. V.

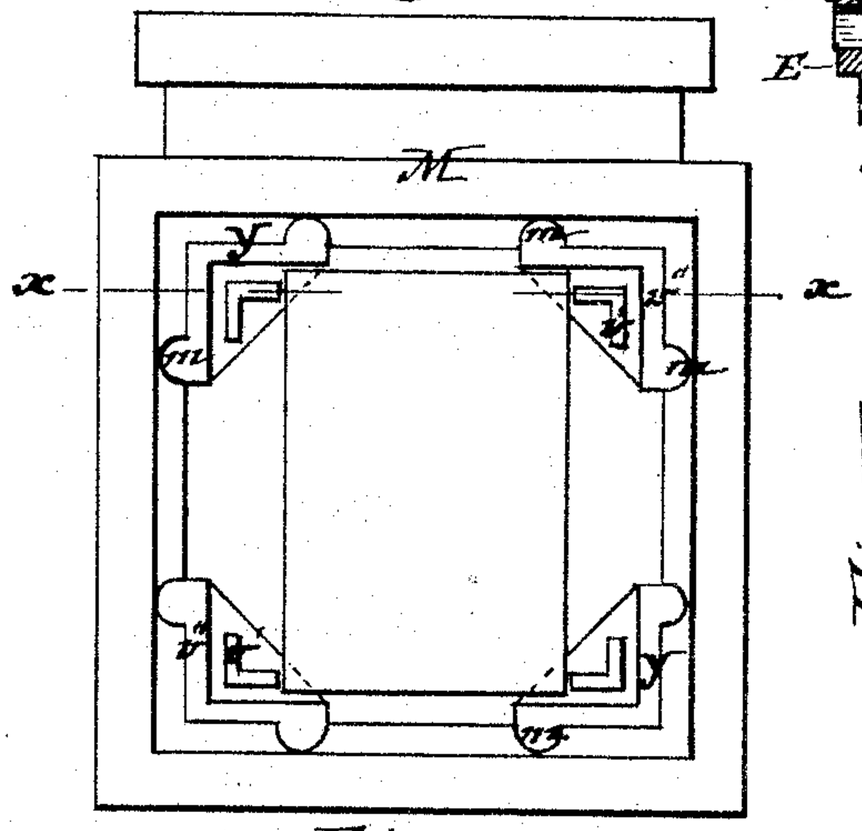


Fig. VIII.

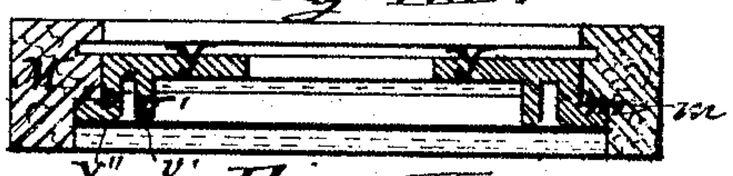


Fig. VI.

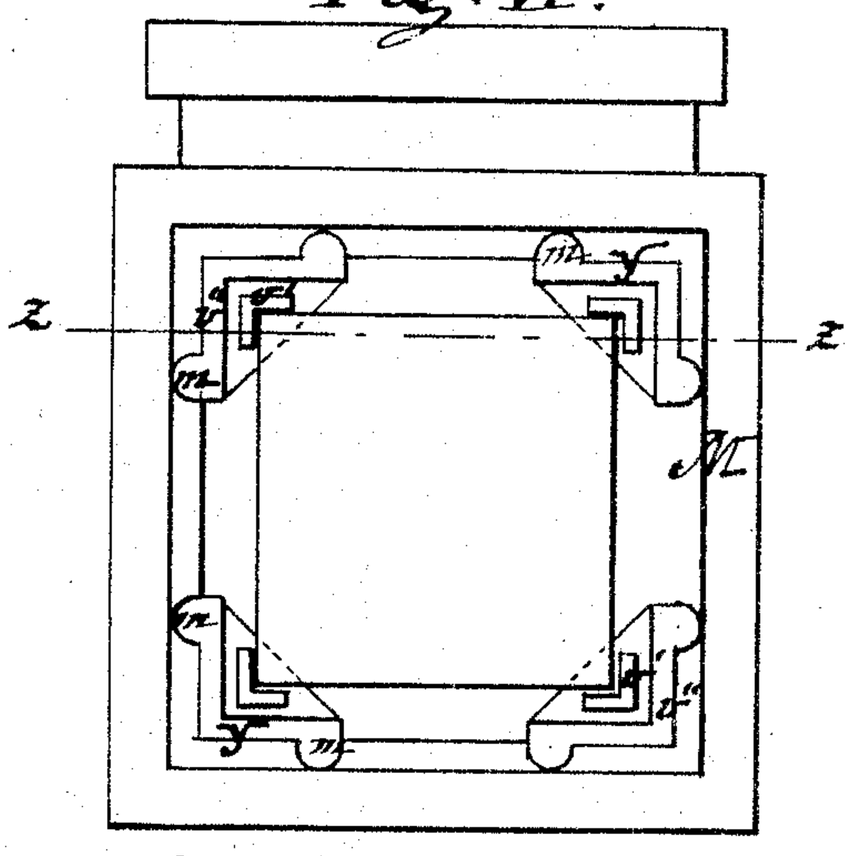


Fig. IX.

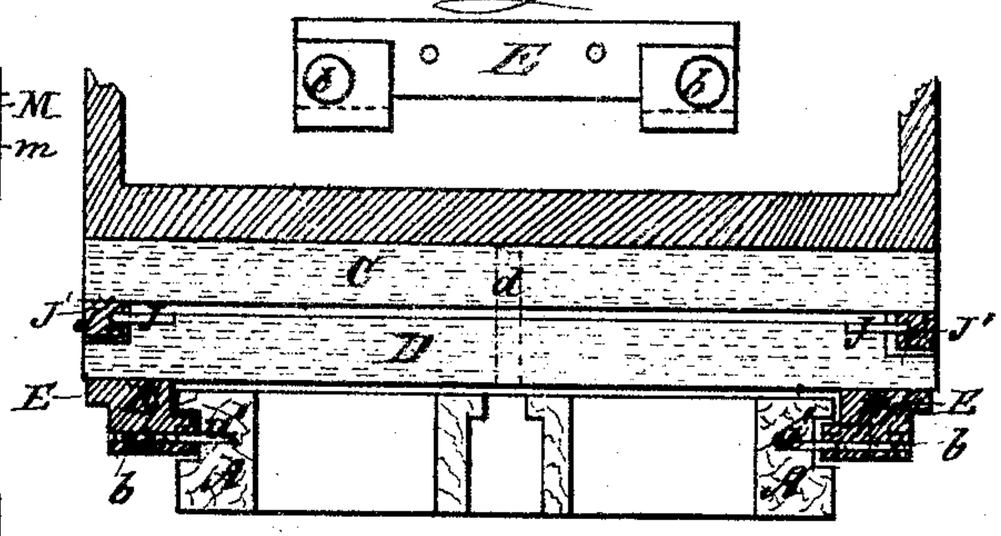


Fig. XI.

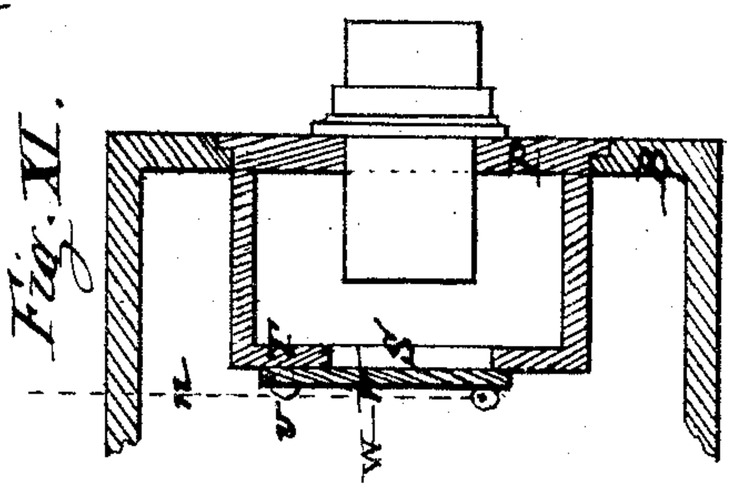
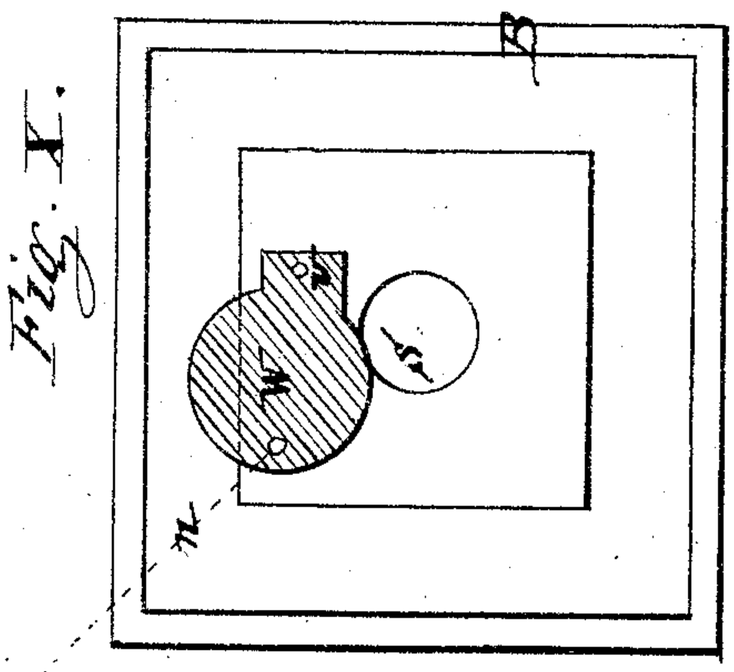


Fig. X.



Witnesses
C Thornton
A E Collins

Inventors.
John Stock & Jacob Stock
per Henry E. Roeder
Attorney

UNITED STATES PATENT OFFICE

JOHN STOCK AND JACOB STOCK, OF NEW YORK, N. Y.

IMPROVEMENT IN CAMERAS.

Specification forming part of Letters Patent No. **156,106**, dated October 20, 1874; application filed March 7, 1874.

To all whom it may concern:

Be it known that we, JOHN STOCK and JACOB STOCK, both of the city of New York, in the State of New York, have invented a new and useful Improvement in Photographic Cameras, of which the following is a description:

The nature of our improvement consists in the manner of regulating the movable part of the camera in its relation to the fixed part of the camera, and further in the construction of the corners in the plate-holder to adapt the same to different sizes of plates.

In the accompanying drawing, Figure I is a horizontal section of a camera embodying our improvements. Fig. II is a plan of the bed of the same. Fig. III is a front view of the plate-holder, with section of the bed or ways. Fig. IV is a longitudinal section of the camera. Figs. V and VI are front views of the plate-holder. Fig. VII is a section at line *x x* of Fig. V. Fig. VIII is a section at line *z z*, Fig. VI. Fig. IX is a section of the bed or ways on which the camera-box moves, showing a different arrangement. Figs. X and XI are end view and section of arrangement for closing the tube.

Similar letters represent similar parts in all the figures.

A is the bed or the ways on which the camera-box is made to move. The camera consists of the stationary part B attached to the forward part of the bed, and of the movable part C C′ attached to a bed-plate, D. On one side of the bed A a rail, *a*, is firmly attached to said bed, working in a bracket, E, fast to the under side of the bed-plate D, and provided with friction-rollers *b*, against which the rail *a* is made to bear. (See Figs. II and III.) Opposite to this rail *a* a bolt or bar, F, is arranged in the bed A, upon which a frame, G, attached to the bed-plate B, is made to slide. By this arrangement the bed-plate D, and consequently the camera-box, attached to the same in the manner hereafter described, will be guided and supported by the rail *a* and the bolt or bar F, and a perfectly smooth, regular, and steady motion of the camera-box will be obtained. The bed-plate D, and consequently the camera-box C C′, is fixed and fastened at any desired distance from the stationary box B by means of the screw-frame and bolt H, working in the central part of the bed A in the usual manner. Instead of the rail *a* and bolt or bar F, arranged within the bed A, as above described, rails *a′* may be arranged on each side on the outside of the bed or ways A, (see Fig. IX,) working in similar frames E on the bed-plate D. The camera-box C is made to turn upon a pin, *d*, attached to the bed-plate D, and is provided with brackets J′ J′ on its under side, working on the segments J J fast on the bed-plate D. (See Figs. II, III, and IX.) By this arrangement this box C is held firmly secured to the bed-plate D, and capable of turning around its center-pin *d*. On one side of this box C a nut, K, is attached, into which a screw-bolt, K′, turning in a bracket, K″, fast to the bed-plate D, is made to work, in such a manner that by the motion of said screw-bolt K′ in the nut K this camera-box C can be moved backward and forward around the central pin *d*, as may be desired. To each side of the box C brackets L L (see Figs. I and IV) are securely fastened, to which the after part of the camera-box C′ is attached, capable of a vibrating motion around its pins *g*. A nut, N, is attached to one side of the box C, into which a screw-bolt, N′, turning in a fixed bracket, N″, attached to the box C′, is made to work, in such a manner that by means of said screw-bolt N′, working in the nut N, the after part of the camera-box C′ can be made to vibrate on said bolts or pins *g* in any desired direction. M is the plate-holder, constructed in the usual manner, and attached to the after-end of the camera-box C′.

By the above-described arrangement of turning the camera-box C, and consequently the after part C′, which is attached to said box C, as described, around the central pin *d*, and at the same time vibrating the after-box C′ on the pins *g*, the plane of the plate-glass in the plate-holder M can be moved in any desired position or inclination in relation with the glass tube or tubes fixed to the stationary part B of the camera, while by the mechanism, consisting of the screw-bolts and nuts, through which the desired position or inclination is obtained and regulated, the camera-boxes C C′ are at the same time securely fastened in this position, without the necessity of any further mechanism.

The glass tube or tubes (not shown in the drawing) are fastened to a sliding frame, P, arranged in the stationary box B. This slide P is provided with rollers *h h* on the bottom, to insure an easy and steady motion to said slide, and is provided with projections *p p* on each side, which, in combination with slides *p′ p′*, operate in such a manner as to keep the large opening in the stationary box B always closed, to prevent the admission of light to the inside of the camera whenever the slide P is moved backward or forward, as may be desired. In the camera-box C′ a movable diaphragm or light-board, Q, is arranged. The slide P in the stationary box B, and the light-board Q in the box C′, are connected through the rods R R′ R″, so that both will be moved at the same time, and the connecting-rod R″ (see Figs. I and IV) is made in such a manner as to allow any variation between the stationary box B and the position of the movable part of the camera-box C′.

By this arrangement, whenever two, three, or more pictures are to be taken on the same plate, the tube or tubes on the forward end of the camera are moved, while the plate-holder can be fixed securely against the camera-box C′. For larger and single pictures the slide P, and consequently the tube, is moved into the center of the camera, and the movable light-board Q is removed from the camera-box C′.

Over the opening S in the partition-plate T, at the back of the slide P, a shutter, W, is hinged, (see Figs. I and IV,) to which a cord, *n*, passing to the top of the box C′, is attached, for the purpose of operating said shutter W. A spring, *w*, is attached on the top of the camera-box C′, (see Fig. I,) under which the cord *n* passes, to hold the same and to relieve the same and close the shutter W instantaneously when required.

Instead of hinging the shutter W as above described, the same may be arranged, as shown in Figs. X and XI, so as to turn on a pin, *v*, and made to move sidewise to uncover the opening S. This arrangement is applicable when the distance between the stationary box B and the camera-box C′ is not sufficient to allow the swinging of the shutter.

The vitrified or other suitable corners Y are made with projections *m* to fasten the same into the wooden frame of the plate-holder M, (see Figs. V, VI, VII, VIII,) and with two raised angle-pieces, *v′* and *v″*, situated one inside the other, leaving a passage or channel-way between them to allow any moisture to flow readily away. The plate-glass may by this arrangement be held either within the corner of the inner angle-piece *v′*, as shown in Figs. VI, VIII, or the same may be held against the edges of the inner angle piece *v′* and the surface of the outer angle-piece *v″*, as shown in Figs. V and VII, accommodating thereby any size of glass.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the camera-boxes C and C′ with the nut N and screw-bolt N′, substantially as set forth.

2. The slide P in the stationary box B, provided with projections *p p*, in combination with the slides *p′ p′*, arranged and operating in the manner substantially as set forth.

3. The combination of the slide P, to which the lens tube or tubes are attached, the diaphragm or light-board Q, and the rods R R′ R″, when constructed, arranged, and operating substantially in the manner and for the purpose set forth.

4. The movable shutter W against the opening S, in the inside of the camera-box B, operated by a string or cord, *n*, substantially as herein described and set forth.

5. The plate-holder, having two angle-pieces, *v′ v″*, placed inside of each other in each corner, in the manner and for the purpose specified.

JOHN STOCK.
JACOB STOCK.

Witnesses:
HENRY E. ROEDER,
C. THORNTON.