I. & C. Paxon.

Solar Camera.

No. 98,404. Patented Dec. 28, 1869.

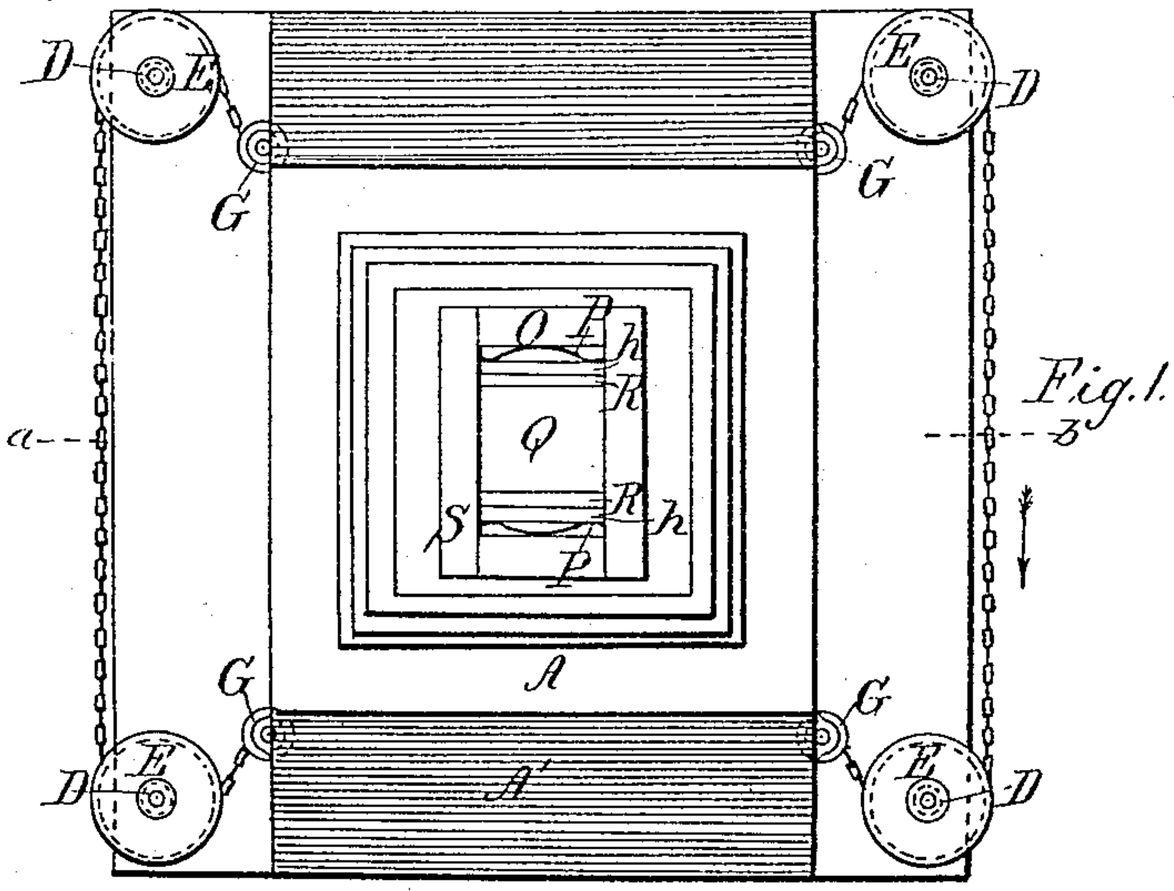

Fig. 1.

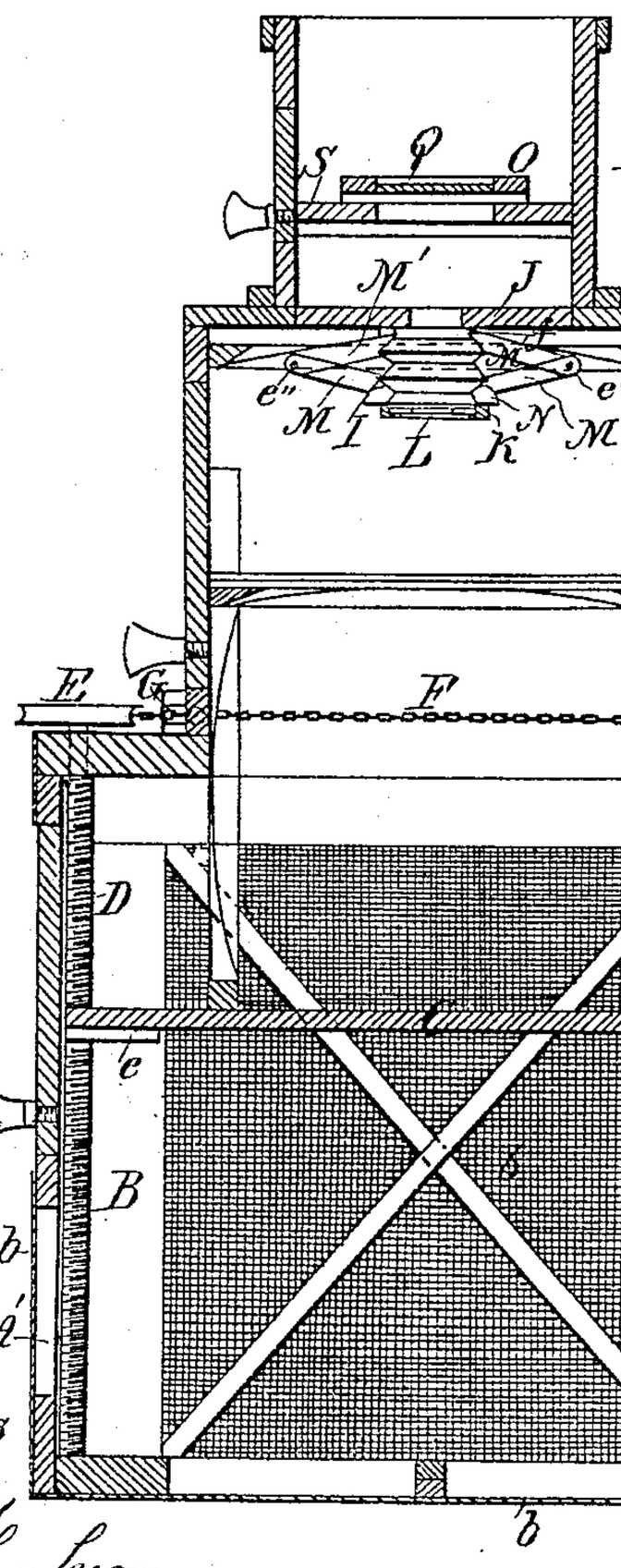

Fig. 2.

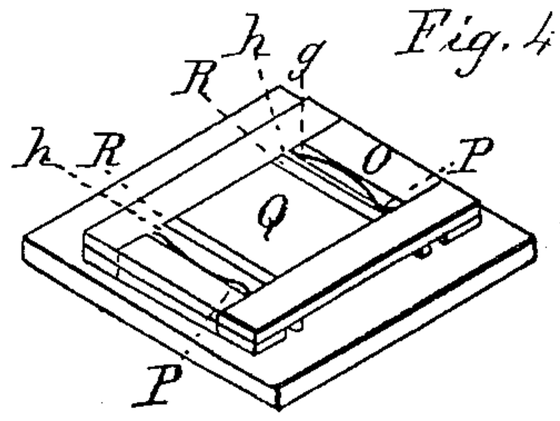

Fig. 4

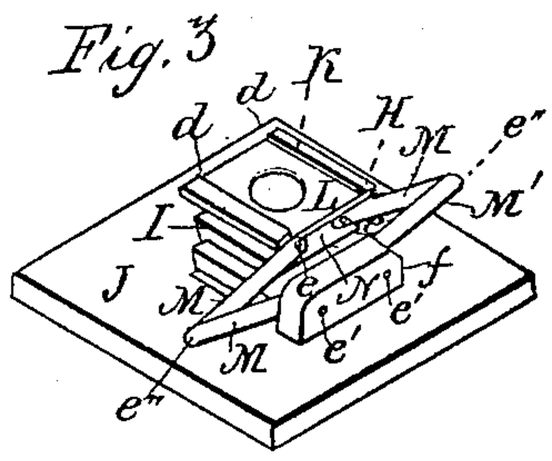

Fig. 3

Witnesses
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ISAIAH PAXSON AND CHARLES PAXSON, OF NEW YORK, N. Y.

Letters Patent No. 98,404, *dated December* 28, 1869.

IMPROVEMENT IN SOLAR CAMERAS.

The Schedule referred to in these Letters Patent and making part of the same.

We, ISAIAH PAXSON and CHARLES PAXSON, of the city of New York, in the county and State of New York, have invented certain Improvements in Solar Cameras, of which the following is a specification.

The nature of our invention consists, in the first place, in providing the negative-holder with springs for clasping the negative, in conjunction with clamping-strips, whereby a single holder is adapted to negatives of different sizes, thus obviating the necessity of having a holder for each size negative.

In the second place, it consists in the employment of a bellows in the vignetting-device, whereby, by the expansion and contraction of the bellows, effected as hereinafter described, the vignetting-lens is adjusted altitudinally, to increase or diminish the size of the picture, as may be desired.

In the third place, it consists in combining and arranging vertical screw-rods with the printing-board, for elevating and depressing the same, the said rods being provided with grooved wheels on their upper ends, around which an endless chain is placed, so that by pulling the chain in one direction, the said screw-rods are revolved simultaneously, and with equal velocities, for elevating the printing-board, or by pulling the chain in the opposite direction, depressing the same; hence the altitudinal adjustment of the board is conveniently and expeditiously effected, and with great precision.

In the fourth place, the invention consists in constructing the lower and large part of the camera-box of a frame-work, and canvas stretched over the same. The canvas is painted so as to thoroughly fill up the openings, to prevent light passing through into the dark chamber. The object of this construction is to obviate the difficulty often experienced, in the cracking of the boards, on account of their great width, unless this part of the box is panelled, which increases the expense much beyond the canvasing. Another advantage resulting from this improved construction is, the box is much lighter than when made altogether of boards.

To enable others skilled in the art to which our improvement appertains, to apply the same to practice, we will now proceed to give a detailed description thereof.

In the accompanying drawings, which make a part of this specification—

Figure 1 is a plan view of the improved camera.

Figure 2 is a vertical section of the same, at the dotted line *a b* of fig. 1.

Figure 3 is an isometrical view of the vignetting-device, in a reversed position.

Figure 4 is a like view of the negative-holder, O, and parts in connection therewith.

Like letters in all the figures indicate the same parts.

A is the camera-box, which is made in the usual manner, with the exception of the bottom part, A′.

I make this part of a frame, *a*, and canvas *b*, which is stretched over it, on account of its great width, which involves the danger of cracks, which let the light into the dark chamber B, when this enlarged part is made of boards.

Sometimes, to overcome the difficulty experienced in the cracking of such wide boards by their shrinkage, resort is had to panelling this large part of the box, but this involves an increase of expense much above that incidental to my mode of construction.

After the canvas is stretched around the frame and on the bottom, and properly confined with tacks, or otherwise, I thoroughly paint it, to prevent light striking through it into the dark chamber B.

The printing-board C is supported and adjusted at any desired altitude, by means of the vertical screw-rods D D D D, as more clearly seen in fig. 1.

The rods work in nuts *c*, that are confined to the lower side of the board by means of screws.

There are grooved wheels, E E E E, on the upper ends of the said rods, which receive the endless chain F.

The small grooved pulleys, G G G G, are used to cause the chain to hug around the wheels E, an increased distance.

The chain F is manipulated by hand, and is pulled in the direction of the arrow, when the board C is to have an upward movement, and contrariwise when it is to be lowered.

This mode of adjusting the board C admits of its being lowered further than in the usual mode of adjustment, and much more expeditiously, and with greater accuracy.

H is a vignetting-device, shown in detail in fig. 3, the device being inverted.

The bellows I is confined at its end, 1, to the board J, and the end, 2, to the frame K, which has grooves *d d*, which support the lens-holder L.

The lens in the holder L is elevated or depressed, as may be required by the contraction or expansion of the bellows I, which is effected by means of the hinged strips M M and M′ M′, the two former partially turning at their inner ends on the pins *e e*, which project from the vertical plate N, or flange of the frame K; the inner ends of the strips M′ M′ turning on the pins *e′ e′*, which project from the block *f*, on the under side of the board J, and the outer end of the strips being connected by means of the pins *e″ e″*. Any other convenient mode may be adopted for operating the bellows, if desired.

O is a negative-holder, which is adapted to negatives of various sizes, by being provided with the clamping-springs P P, as seen in figs. 1 and 4.

The negative, Q, is supported by the rebated strips R R, which rest on the slide S.

The resilient parts, *g*, of the springs bear against the said strips, or else against the intermediate strips *h h*, any desirable number of which may be used when required to fill up between the springs and the strips R R, or the strips *h* to be kept on hand for filling in, may be of various thicknesses, for convenience in the adjustment.

India-rubber or other springs may be used, when desired, instead of the springs P P, as represented in the drawings.

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

1. The combination of the springs P P and rebated strips R R with the negative-holder O, with or without the intermediate strips *h h*, substantially in the manner and for the purpose hereinbefore described.

2. The combination and arrangement of the vertical screw-rods D with the printing-board C, the said rods having wheels E on their upper ends, which have the endless chain F in connection, all operating conjointly, as and for the purpose specified.

In testimony that the above is our invention, we have hereunto set our hands and affixed our seals, this 2d day of October, 1869.

ISAIAH PAXSON. [L. S.]
CHAS. PAXSON. [L. S.]

Witnesses:
WARREN W. HALLOCK,
STEPHEN USTICK.