

W. W. H. & H. J. LEWIS.

Camera.

No. 8,513.

Patented Nov. 11, 1851.

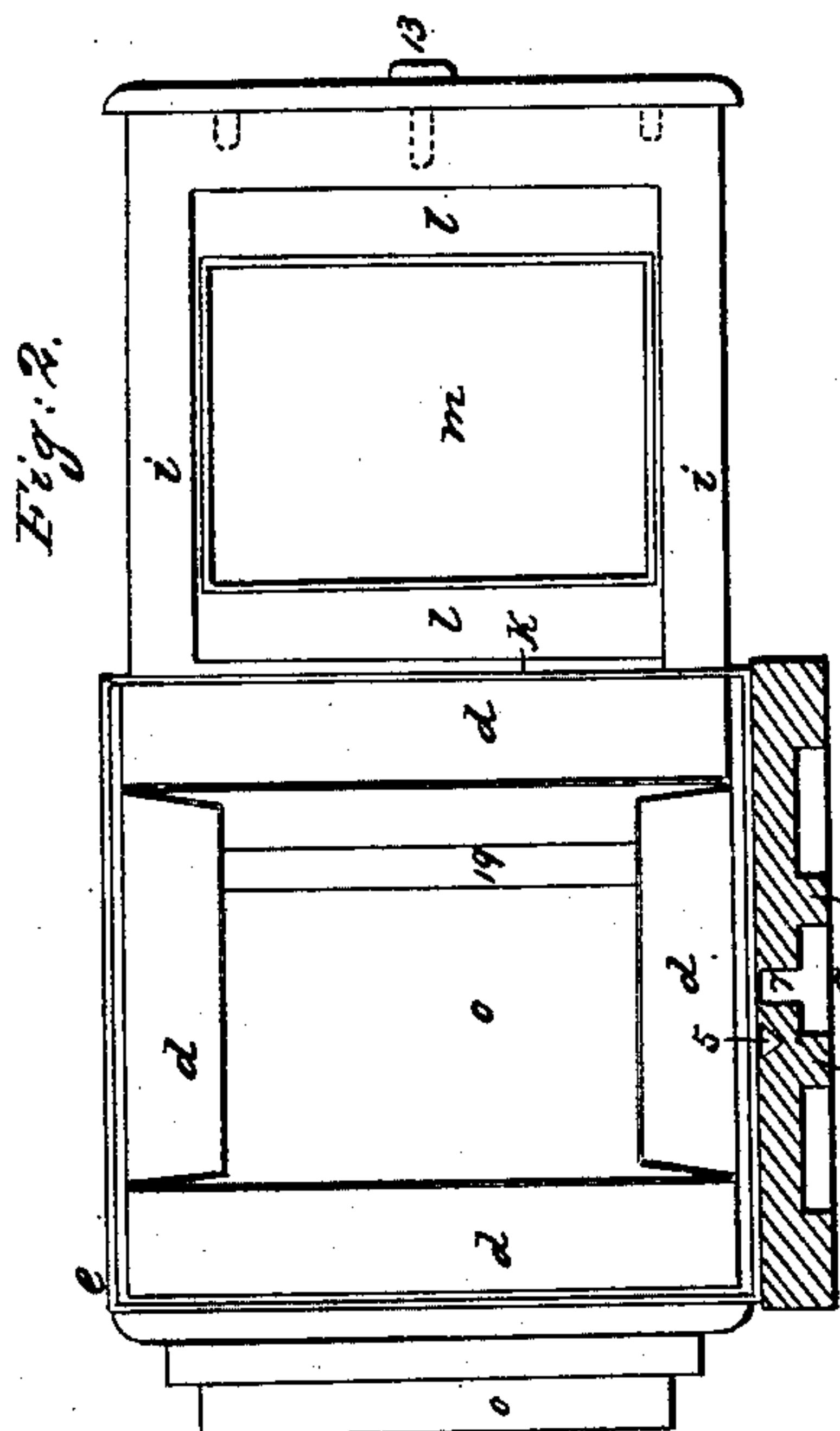


Fig. 4.

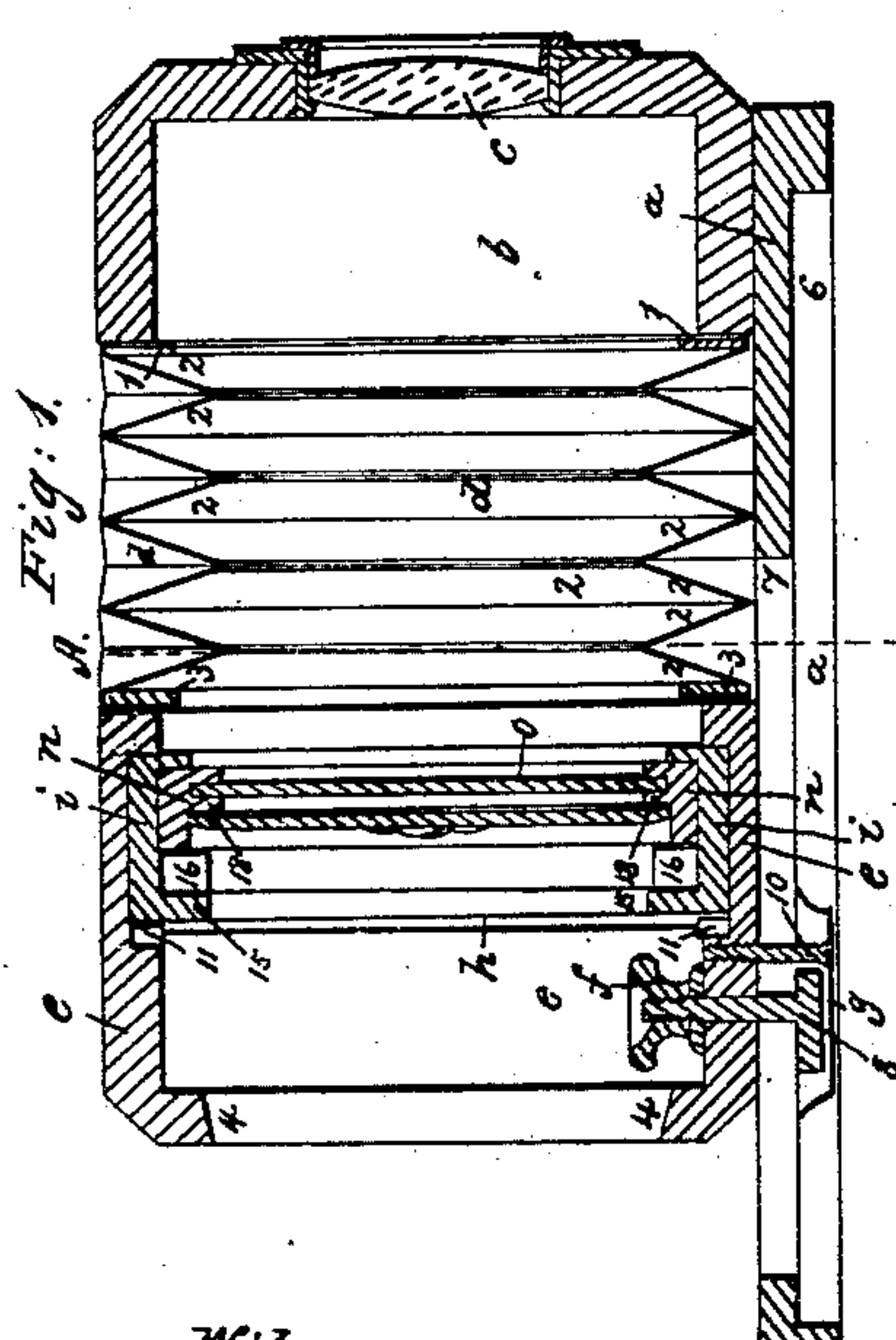
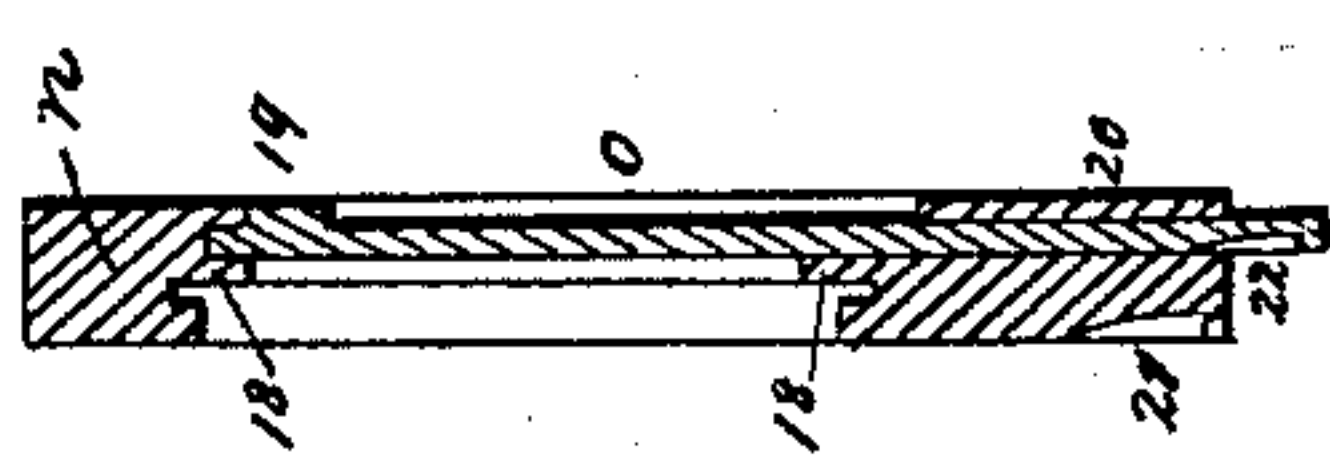
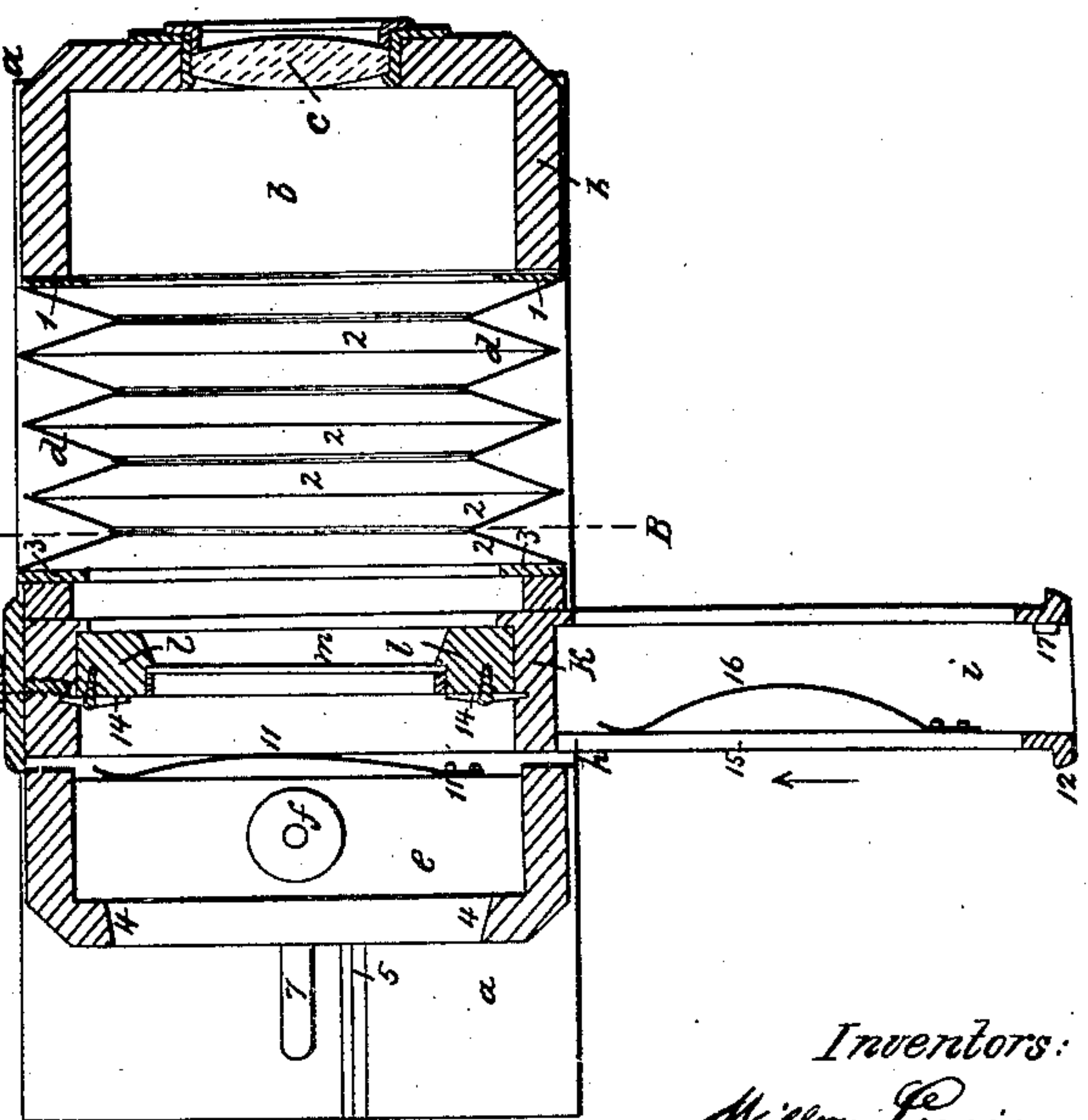


Fig. 3.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN DAGUERRETYPE APPARATUS.

Specification forming part of Letters Patent No. 8,513, dated November 11, 1851.

To all whom it may concern:

Be it known that we, WILLIAM LEWIS, WILLIAM H. LEWIS, and HENRY T. LEWIS, of the city, county, and State of New York, manufacturers of daguerreotype apparatus, have invented, made, and applied to use certain new and useful Improvements in the Construction of Cameras, by which the same is made more compact, effective, and easier used; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, wherein—

Figure 1 is a longitudinal section. Fig. 2 is a cross-section through the line A B of Figs. 1 and 3, and Fig. 3 is a sectional plan of the frame to carry the daguerreotype-plate.

Like marks of reference apply to the same parts in all the figures.

a is a bed-piece, of any fit material, made thin in the center part, as seen in Fig. 2, with thicker edges, and two beads *b*, running lengthwise of the bed, and this piece is to be supported, adjusted, and sustained on a pedestal or other convenient camera-stand.

b is a short square box secured to the piece *a* with an opening *c* in the end to carry a lens or lens-tube of any usual form.

1 is a thin square frame carrying between it and the box *b* a square trunk of leather *d*, fitted to fold up or shut together, and a stiffening of card-board is introduced cut out in strips of the width of the fold, with the ends of the strips cut off at an angle of about forty-five degrees, and each side of the leather is thus fitted so as to fold up backward and forward in the form of a square bellows, and the folds are turned at the angles, as shown in the drawings, so that this trunk can be either extended out so that the leather is drawn tight or shut up to the thickness of the folds of leather and the stiffening material within. The other end of this leather is secured by a square frame *3*, similar to the frame *1*, to a sliding box *e*, which is made with an opening *4* in the back of the box to enable the operator to see the figure on the object-glass. The box *e* is guided on the bed-piece *a* by a V-slide in a similar groove *5* in the bed *a*, so that the box *e* slides parallel on the bed and is secured in place by a square-headed screw *8*, between the beads *6*, with the shank pass-

ing through a slot *7* lengthwise of the bed-plate *a*, and going up through a hole in the box *e* with a nut *f*, so that the box *e* can be retained at any required point, and a bow-spring *g* between the beads *6* is secured by a screw *10*, and prevents the box *e* from working loose, the spring causing a slight friction as the box slides either way.

Through the sides of the box *e* is a cross opening or mortise *h*, fitted with bow-springs *11 11* at top and bottom in the groove formed in the top and bottom of the box. This opening *h* receives an oblong frame *i*, fitted with ends *12 12*, that project over the edges of the frame *i*, so as to prevent the slide drawing out of the camera, and one of the ends *12* is secured by a screw *13* and pins, (shown by dotted lines in Fig. 2,) to allow of its being entered through the opening *h*.

The frame *i* is divided in its length by a vertical piece *k*, which, as will be seen, forms two square openings or shallow boxes, each with a head around the front edge. One of these boxes receives a frame *l*, that carries an object-glass *m*, and the frame *l* is secured by buttons *14*. This frame *l* being square and receiving an oblong plate of glass *m* the size of the daguerreotype-plate can be entered either way, so as to take one or more persons vertically on the plate or a group horizontally by removing the frame *l* and placing the object-glass with its longest dimension horizontally, the buttons *14* taking notches in the frames *i* and partition *k*. The other part of the frame *i* (see Fig. 4) receives the daguerreotype-plate in a frame *n*, which is constructed with a rabbet *18*, to receive the plate which is secured by a back and buttons, as usual. In front of the rabbet *18* is a mortise and slides receiving a slide-plate *o*, with a stop *19*, which taking against the edge of the mortise prevents the slide *o* being entirely withdrawn.

21 is a countersink in the frame *n* to move the frame by, and *22* is a similar countersink in the slide *o* for the same purpose.

m m are strips on the top and bottom within the one-half of the frame *i*, that carry bow-springs *16*, and this end of the frame *i* has a mortise to pass the daguerreotype-plate frame *n*. These springs *16* force the frame *n* against the rabbet around the frame or slide *i*, and to

hold this frame *n* in place we attach small blocks 17 on the inside of the mortise in the end of frame *i*, and cut small corresponding notches 20 in the frame *n*, so that as the frame *n* is shoved into the frame *i*, the springs forcing it against the rabbets on the frame *i*, the blocks 17 take the notches 20 and hold the frame in place, and when the frame *n* is to be removed it is to be drawn back against the operation of the springs 16 until it is clear of the blocks 17 and then slid out.

The mode of using this camera is as follows: The operator, standing behind the camera, moves the frame *i* so that the ground glass is in the camera. The end 12 of the slide, taking against the side of the camera, regulates the glass in the right position in the camera. He then sets the focus by adjusting the box *e* to the required position, the folded leather *d* either shutting up or extending, at the same time excluding all light, and the box *e* is retained in place on the bed *a* by the nut *f*, and if the lens-tube is made adjustable the focus may be finally adjusted by this means, and when the focus is thus correctly obtained on the object to be taken the operator, having previously put a properly-prepared plate in the frame *n* and placed it in the slide-frame *i*, pushes the slide-frame *i* in the direction of the arrow, (see Fig. 3,) so that its other end 12 takes the opposite side of the camera, the springs 11 11 yielding, but causing the slide to set tight against the forward edge of the opening *h*, and placing the daguerreotype-plate in precisely the position that the object-glass previously occupied, and by the notch 22 the operator withdraws the slide *o*, uncovering the plate to be acted on by the light, as usual, the stop 19 preventing the slide *o* being entirely withdrawn, and when the plate has been exposed the proper time to the action of the light the slide is to be pushed back into place, cutting off all the light, and the slide *n* with the plate is to be removed, as before described, and the plate treated in any usual manner to complete the picture.

The advantages of this mode of constructing cameras over the old and usual methods are that in cameras that open at the top the light from a sky-light particularly is apt to enter the joint of the lid, that allows the glass to be removed and the plate to be put in; but in ours the top of the camera is perfectly tight, and the springs 11 11 force the frame *i* against the forward edge of the mortise through the box *e*, excluding all light but that passing through the lens.

The frame *i* may be made to slide vertically, if so required.

In the old cameras the ground glass had to be withdrawn and then the plate and frame put in, which occupied very much more time than in our arrangement, in which by merely sliding the frame *i* across the camera the ground glass is removed at the same time the daguerreotype-plate is put into place, and the speed with which daguerreotypes are taken is a great object, particularly with children, as they as well as others are apt to move if too much time is employed, thereby spoiling the picture.

The arrangement of the folding-trunk connection between the ends of the camera, made of leather or other fit material, is an advantage over the ordinary sliding camera, as there is no opening for admitting light, and, besides, the camera will shut up into so very much less space that it is very compact, which is a very essential requisite, particularly in packing for transit or for traveling operators.

It will be seen that the sizes and proportions must vary according to the plate to be used. Therefore we do not limit ourselves in this particular.

We are not aware that any of the parts hereinafter claimed have ever been so applied or used as we have applied, arranged, and combined them, although some of the parts, taken in themselves, are old. Therefore

We claim—

1. The construction of a camera-box, with a cross opening or mortise to receive a sliding frame that carries both an object-glass and the daguerreotype-plate, as described.

2. The construction and application of a sliding frame *i*, with a division to receive a frame carrying an oblong object-glass, so formed as to be placed either vertically or horizontally, as described and shown.

3. The construction of the slide *i*, so as to receive in the other division a daguerreotype-plate in a frame *n*, such frame *n* being pressed in place by springs 16 and held in place by blocks 17, taking notches in the frame *n*, as described and shown.

In witness whereof we have hereunto set our signatures this 24th day of April, 1851.

WILLM. LEWIS.
W. H. LEWIS.
HENRY T. LEWIS.

Witnesses:

W. SERRELL,
LEMUEL W. SERRELL.