

No. 767,021.

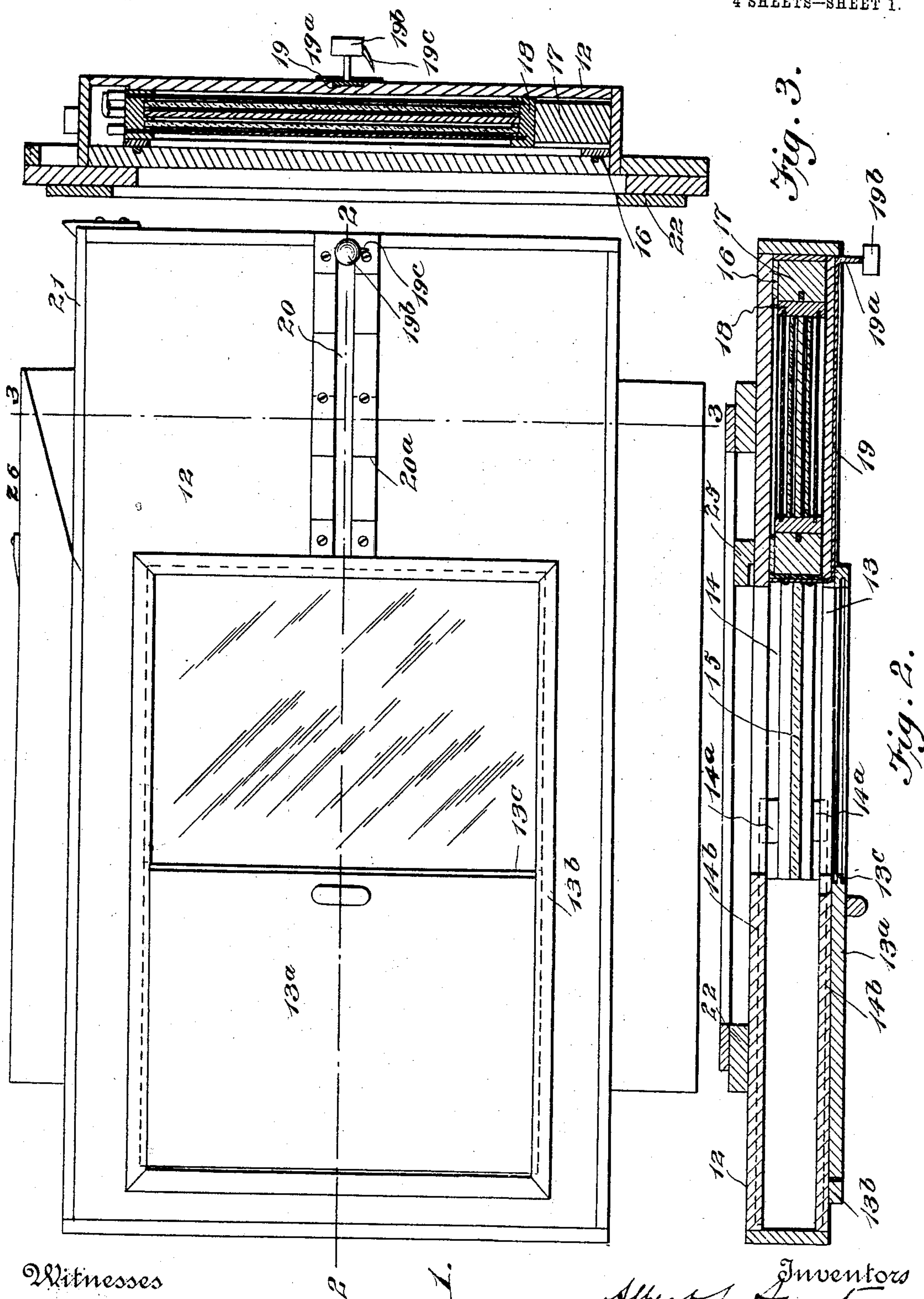
PATENTED AUG. 9, 1904.

A. L. SWARTZ & A. R. MARTIN.
MULTIPLYING ATTACHMENT FOR CAMERAS.

APPLICATION FILED DEC. 19, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses

Maud G. Corder
M. Schmidt

Inventors
Albert L. Swartz
Albert R. Martin
by Milo B. Stevens & Co.
Attorneys

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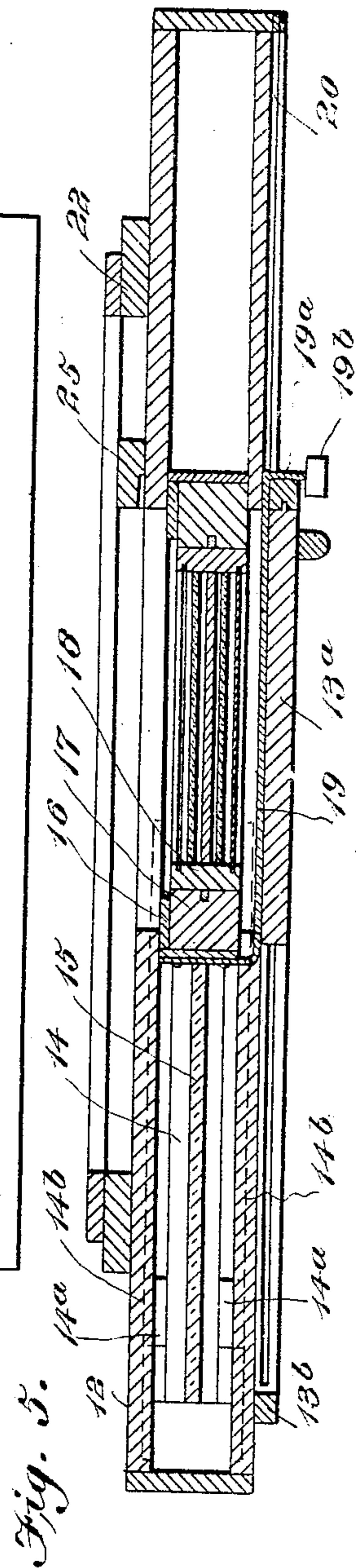
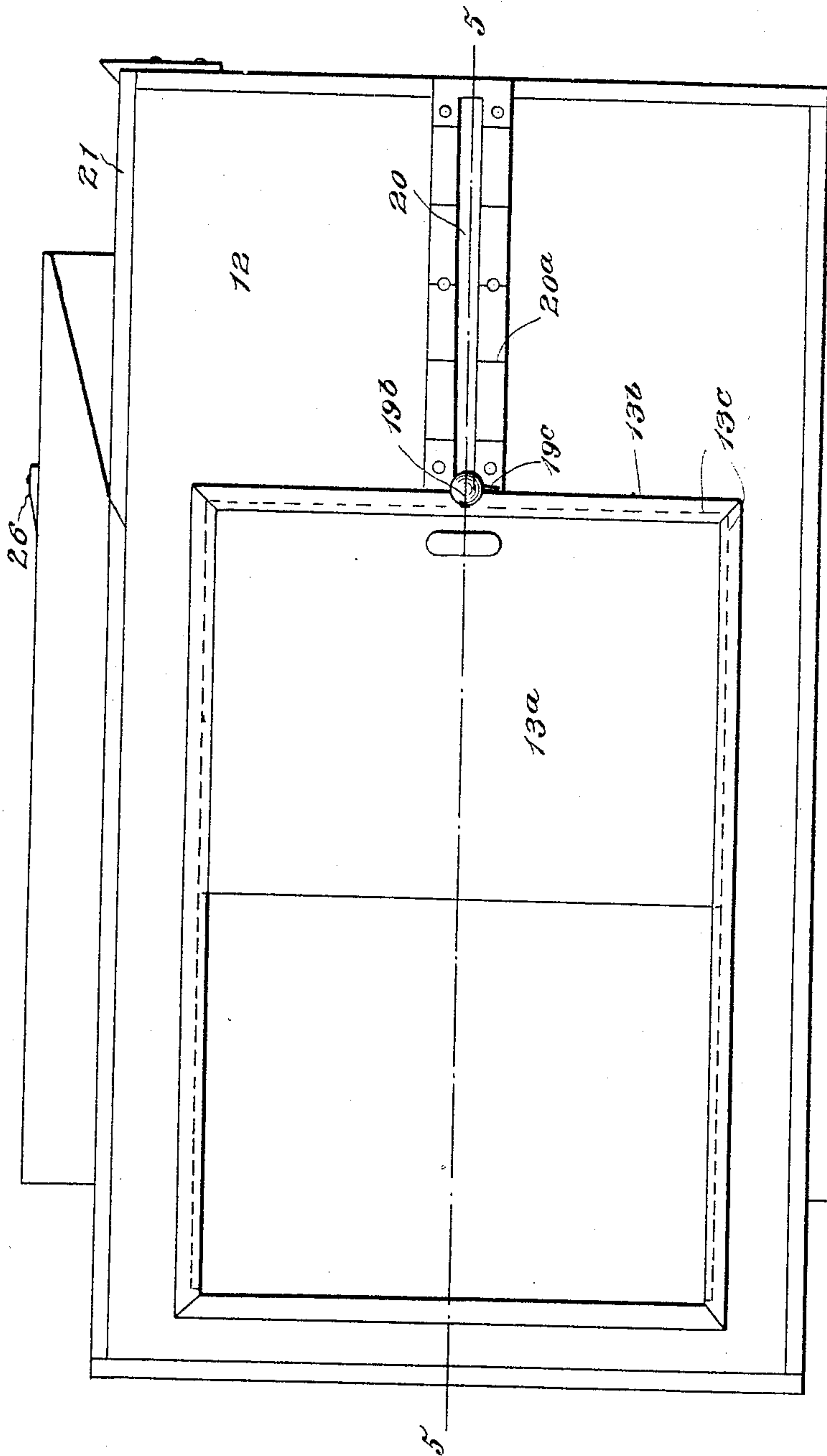
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4 SHEETS—SHEET 2.



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Maud E. Corder
M. A. Schmidt

Fig. 4.

Inventors
Albert L. Swartz
Albert R. Martin
by Milo B. Stevens & Co. Attorneys

No. 767,021.

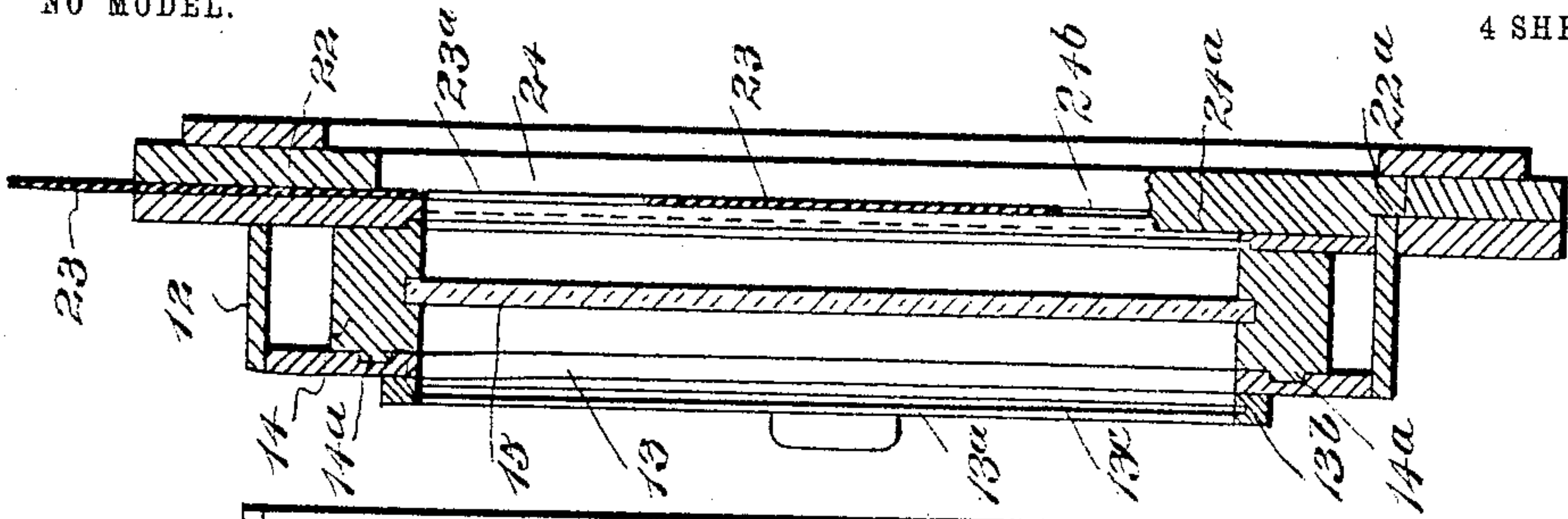
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4 SHEETS—SHEET 3.



1. fig.

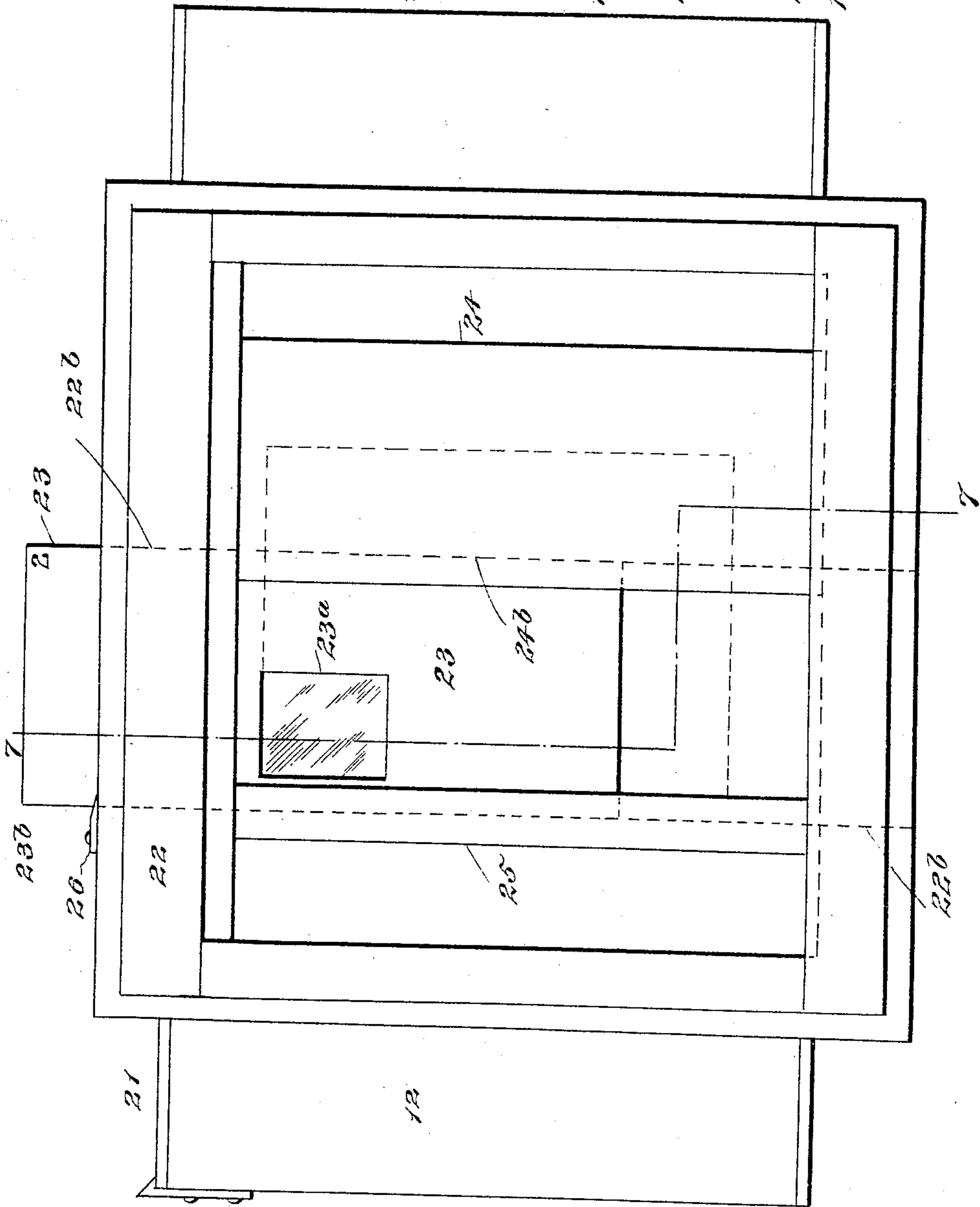


Fig. 6.

Witnesses

Maud E. Corder.
M. Schmidt

Inventors

Albert L. Swartz
Albert R. Martin
by Milo B. Stevens & Co
Attorneys

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4 SHEETS—SHEET 4.

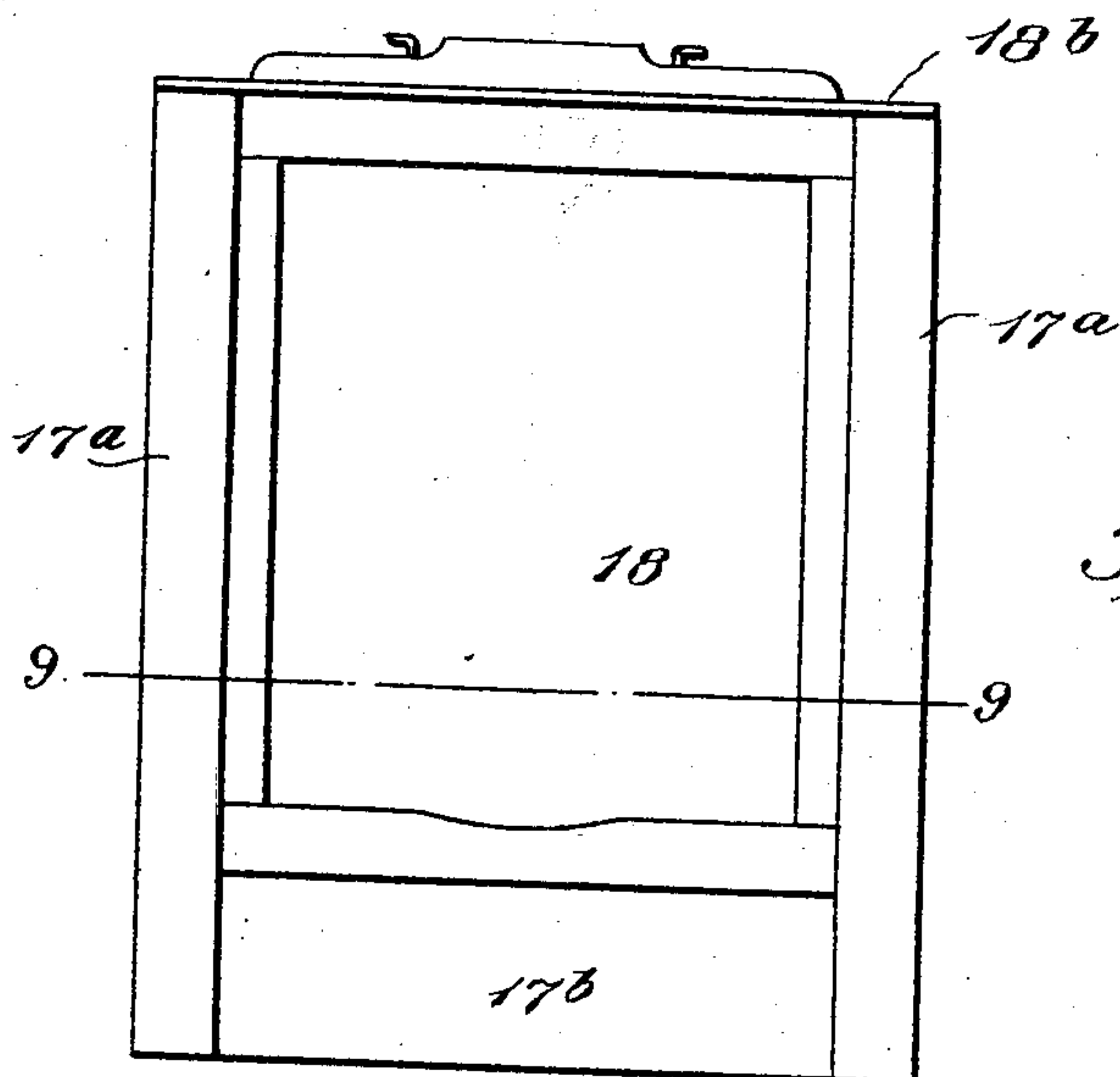


Fig. 8.

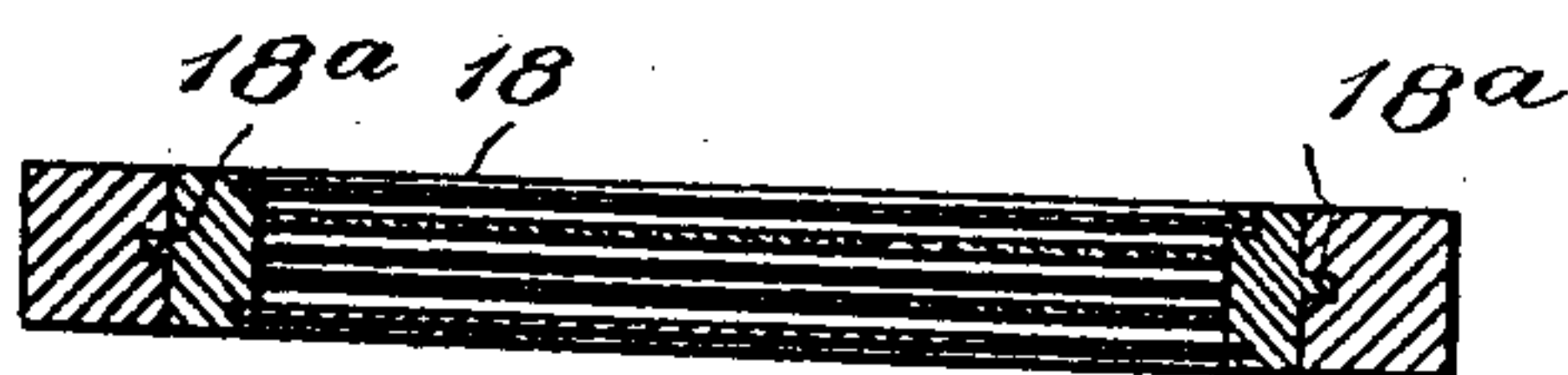


Fig. 9.

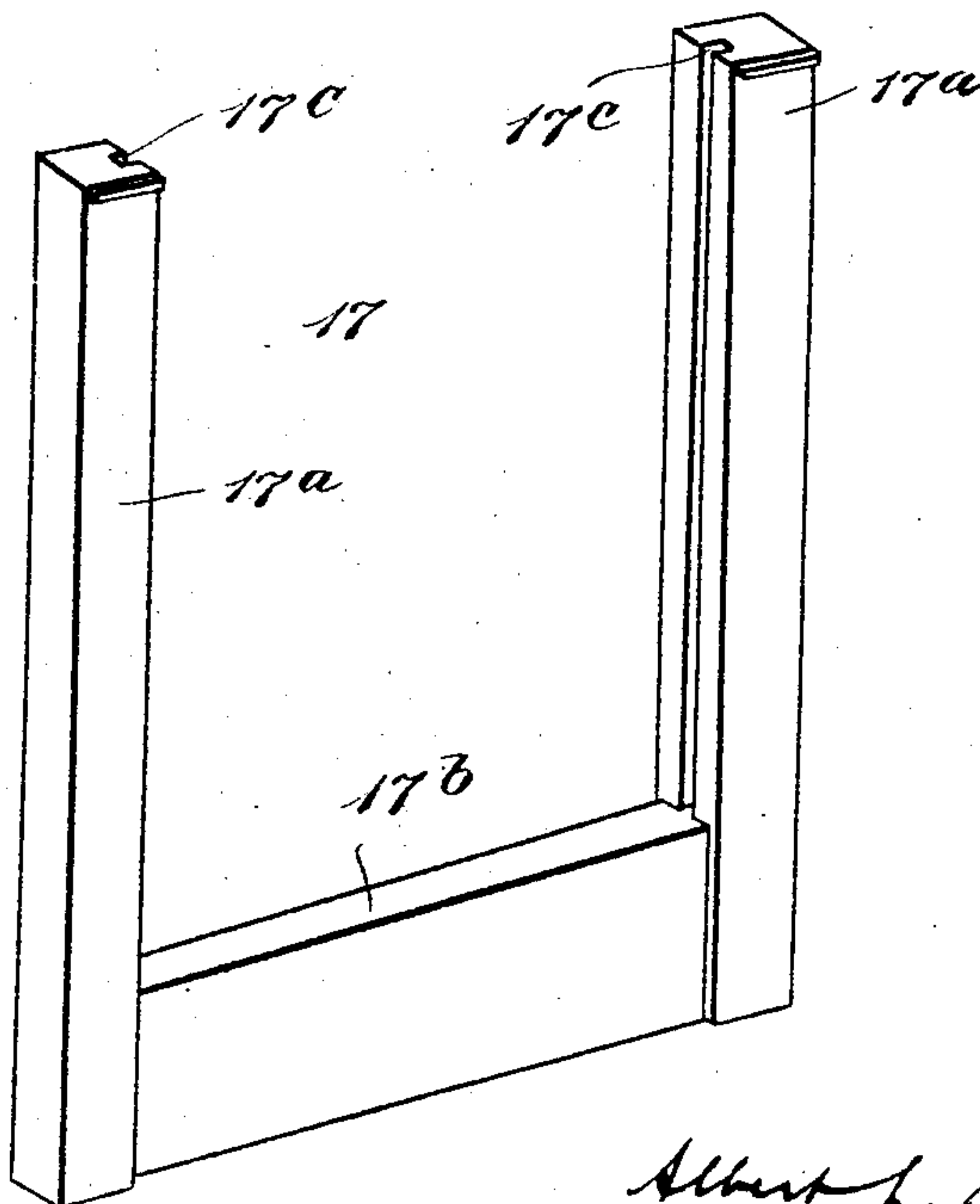


Fig. 10.

Witnesses

Maud E. Corder

M. A. Schmidt

Inventors

Albert L. Swartz
Albert R. Martin
by Milo B. Stevens & Co.
Attorneys

UNITED STATES PATENT OFFICE.

ALBERT L. SWARTZ AND ALBERT R. MARTIN, OF JUNCTION CITY, OREGON.

MULTIPLYING ATTACHMENT FOR CAMERAS.

SPECIFICATION forming part of Letters Patent No. 767,021, dated August 9, 1904.

Application filed December 19, 1903. Serial No. 185,889. (No model.)

To all whom it may concern:

Be it known that we, ALBERT L. SWARTZ and ALBERT R. MARTIN, citizens of the United States, residing at Junction City, in the county of Lane and State of Oregon, have invented certain new and useful Improvements in Multiplying Attachments for Cameras; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

Our invention relates particularly to an attachment for photographic cameras whereby a number of exposures may be made on one plate, so that what are known as "stamp-pictures" may be readily taken with an ordinary camera, but includes also novel features with respect to plate-holding devices and means to shift the ground glass and plate-holder with respect to the focal line.

A further object is to provide a frame for holding different-sized plate-holders, whereby smaller plates may be used than the particular camera is designed for and the use of kits therefore dispensed with.

The invention comprises a box which is secured to the rear end of the camera, said box containing a horizontally-slidable carriage in which a focusing-glass is secured and which also carries the plate-holder. The box has the usual exposure-opening, in which an apertured vertically-adjustable cut-out slide is placed. Proper manipulation of the plate-holder and cut-out slide exposes successive parts of the plate in both directions, so that several rows of pictures may be made with one plate. An index is provided for the plate-holder carriage and cut-out slide to facilitate the proper manipulation of the parts.

With these and other objects in view the invention consists in an arrangement and combination of parts hereinafter described and claimed, and shown in the accompanying drawings, in which—

Figure 1 is a rear elevation showing the focusing-glass in position for use. Fig. 2 is a horizontal section on the line 2 2 of Fig. 1.

Fig. 3 is a vertical section on the line 3 3 of Fig. 1. Fig. 4 is a rear elevation with the focusing-glass removed from the exposure-opening and the plate in proper position for exposure. Fig. 5 is a horizontal section on the line 5 5 of Fig. 4. Fig. 6 is a front elevation showing the attachment for taking stamp-pictures. Fig. 7 is a vertical section on the line 7 7 of Fig. 6. Fig. 8 is an elevation of the plate-holder and its frame. Fig. 9 is a horizontal section on the line 9 9 of Fig. 8. Fig. 10 is a perspective view of the frame for the plate-holder.

Referring specifically to the drawings, 12 indicates a box which is secured to the rear end of the camera in any suitable manner and has an exposure-opening 12^a in front. The rear side of the box has an opening 13, which registers with the exposure-opening and can be closed by a shutter 13^a, slidable in a frame 13^b, which is grooved to receive the tongues 13^c on the shutter. The tongues extend around three sides of the shutter, so that when it is closed a light-tight joint is had. Within the box is mounted a horizontally-slidable carriage 14, having a focusing-glass 15. The carriage fits snugly in the box and is provided with guide-ribs 14^a, fitting in grooves 14^b, formed in the walls of the box. A frame 16 is secured to the carriage adjacent to the focusing-glass, in which frame is supported a removable frame 17, which carries the plate-holder 18. A metal strip 19 is secured to one side of the frame 16 and has at its free end a pin 19^a, extending through a slot 20 in the rear side of the box. The slot has a scale 20^a along its edges. The pin 19^a is provided with a knob 19^b, which may be taken hold of to shift the carriage back and forth. The knob has a pointer 19^c to cooperate with the scale 20^a, as will be hereinafter described. The metal strip 19 also serves to exclude light through the slot. The upper edge of the box has an opening provided with a door 21, through access may be had to the carriage to insert or remove the plate-holder therein.

Around the exposure-opening 12^a a rectangular frame 22 is secured to support the cut-out slide 23 and a plate 24 for reducing the exposure-opening. The lower side of the

frame is grooved on the inside, as at 22^a, to receive the lower edge of the plate 24, and the face of the plate is thickened, as at 24^a, to fit snugly within the exposure-opening, where-
 5 by a light-tight joint is had. The upper and lower sides of the frame 22 have aligned vertical slots 22^b therethrough to receive the cut-out slide. The edges of the slide fit in grooves 24^b in the edge of the plate 24 and a strip 25
 10 at the opposite edge of the exposure-opening. The cut-out slide has an exposure-opening 23^a and notches 23^b along one of its edges. The notches are numbered and are adapted to be engaged by a catch 25, which is pivoted
 15 on the upper edge of the frame 22 for a purpose to be hereinafter described. It is obvious that the size of the picture and the number of exposures desired may be varied by changing the cut-out slide and the plate 24.
 20 The plate-holding frame 17 comprises sides 17^a, joined by a bottom piece 17^b. It is open at the top, so that the plate-holder, may be inserted. The sides are grooved on the inside, as at 17^c, to receive guide-ribs 18^a on opposite
 25 edges of the plate-holder. A rib 18^b extends across both faces of the plate-holder, near the top thereof, to exclude light from the plate when its side is removed.
 The object of the frame 17 is to utilize
 30 small-size plates and plate-holders, if necessary. Thus the carriage 14 will preferably be of a size to receive a large-size plate-holder. To use a smaller one, the frame 17 is inserted to reduce the opening and fit it to the
 35 smaller plate-holder. Obviously several such frames may be made to adapt the device to the ordinary plate sizes.
 In use the plate-holder is inserted in the carriage 14, the frame 17 being used, if neces-
 40 sary. The door 21 is then closed and the shutter 13 opened for focusing, the ground glass 15 being in proper position before the exposure-opening. After focusing, the shutter 13 is closed and the knob 19^b taken hold
 45 of and pushed along to the end of the slot 20, by which the carriage 14 is moved forward and the plate-holder is located in proper position before the exposure-opening. After the exposure is made the carriage is moved back
 50 to its original position, and the plate-holder can then be removed through the door 21.
 To take stamp-pictures, the plate 24 is placed in the frame 22 and the cut-out slide inserted through the slots 22^b. The slide is then ad-
 55 justed so that the catch 25 lies in slot 1. After focusing as before the carriage 14 is moved forward until the pointer 19^c coincides with 1 on the scale 20^a. The exposure is then made, after which the carriage is moved forward to the next position indicated by the
 60 pointer 19^c, and so on until one row of exposures has been made. The slide 23 is then

shoved down until the catch engages slot 2. The carriage is in the meantime returned to its original position, after which it is ready
 65 to be moved forward for another row of exposures, as before.

Having thus described our invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A camera attachment comprising a box having an exposure-opening in front and a registering opening in the back, a shutter to cover the latter opening, a carriage slidable in the box, a focusing-glass and a plate-holder
 75 carried thereby, and an adjustable apertured slide across the exposure-opening.

2. A camera attachment comprising a box having an exposure-opening in front and a registering opening in the rear, a carriage
 80 slidable in the box, a focusing-glass and a plate-holder carried thereby, a frame around the exposure-opening, a plate secured in the frame to reduce the opening, and an apertured slide adjustable across the opening.

3. A camera attachment comprising a box having an exposure-opening in front and a registering opening in the back, a carriage
 85 slidable in the box, a focusing-glass and a plate-holder carried thereby, and an apertured slide adjustable angularly with respect to the carriage, across the opening, and having an index to indicate its position.

4. A camera attachment comprising a box having an exposure-opening in front and a
 95 registering opening in the back, a horizontally-slidable carriage in the box, a focusing-glass and a plate-holder carried thereby, a frame around the exposure-opening having vertically-aligned slots, a plate secured in the
 100 frame to reduce the exposure-opening, a vertically-adjustable cut-out slide extending through the slots and across the opening.

5. A camera attachment comprising a box having an exposure-opening in front and a
 105 registering opening and a slot in the back, a scale along the edges of the slot, a horizontally-adjustable carriage in the box carrying a pointer for the scale, and a vertically-adjustable cut-out slide across the exposure-
 110 opening having a position-index.

6. A camera attachment comprising a box having an exposure-opening, a laterally-slidable carriage in the box, a removable frame having guide-grooves carried thereby, and a
 115 plate-holder in the frame having guide-ribs fitting in the grooves.

In testimony whereof we affix our signatures in presence of two witnesses.

ALBERT L. SWARTZ.
 ALBERT R. MARTIN.

Witnesses:

C. P. HOUSTON,
 JOHN H. STARR.