

O. C. COURTRIGHT & A. D. MIKA.
PHOTOGRAPHIC PRINTING CABINET.

APPLICATION FILED APR. 25, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

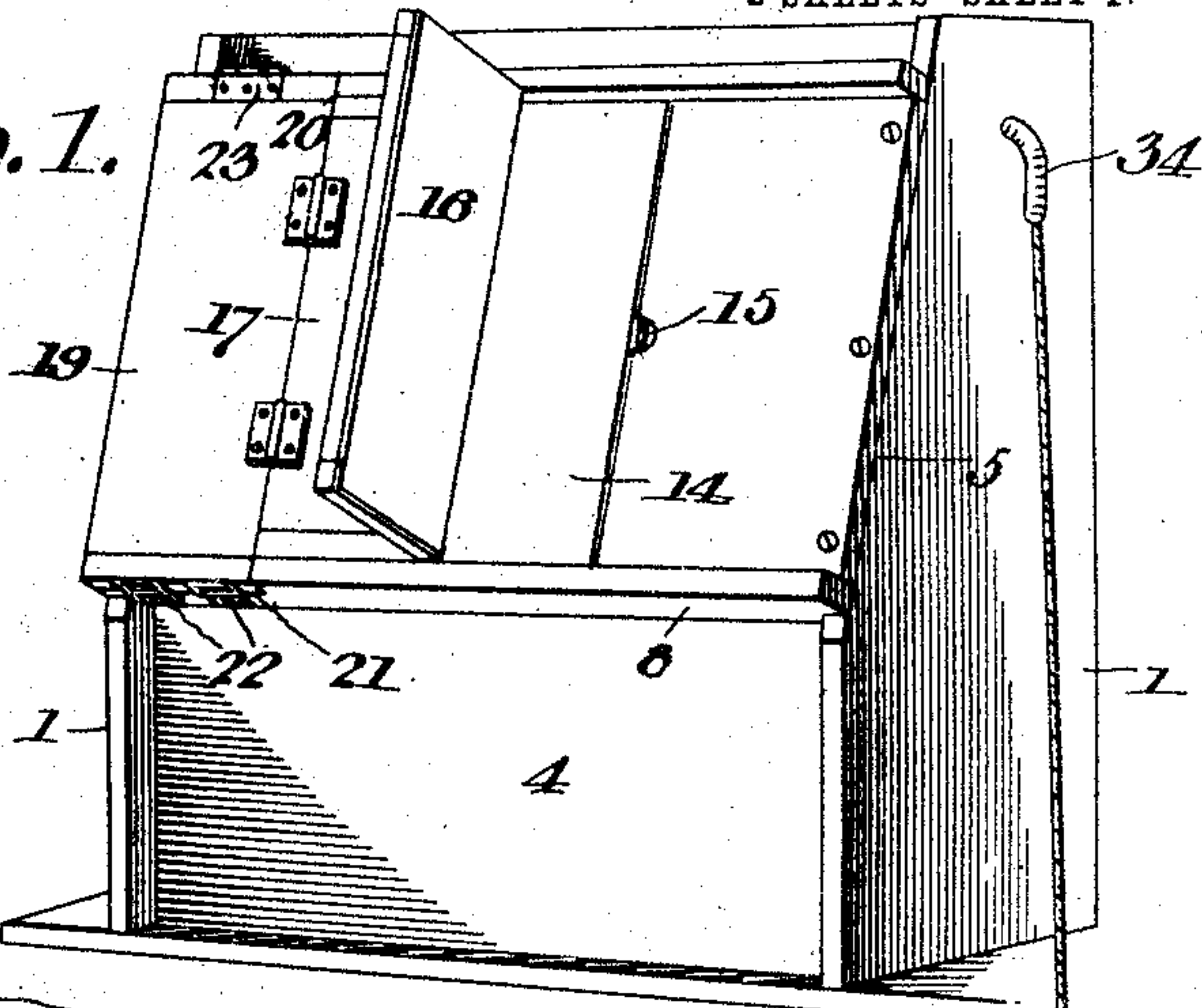


Fig. 5.

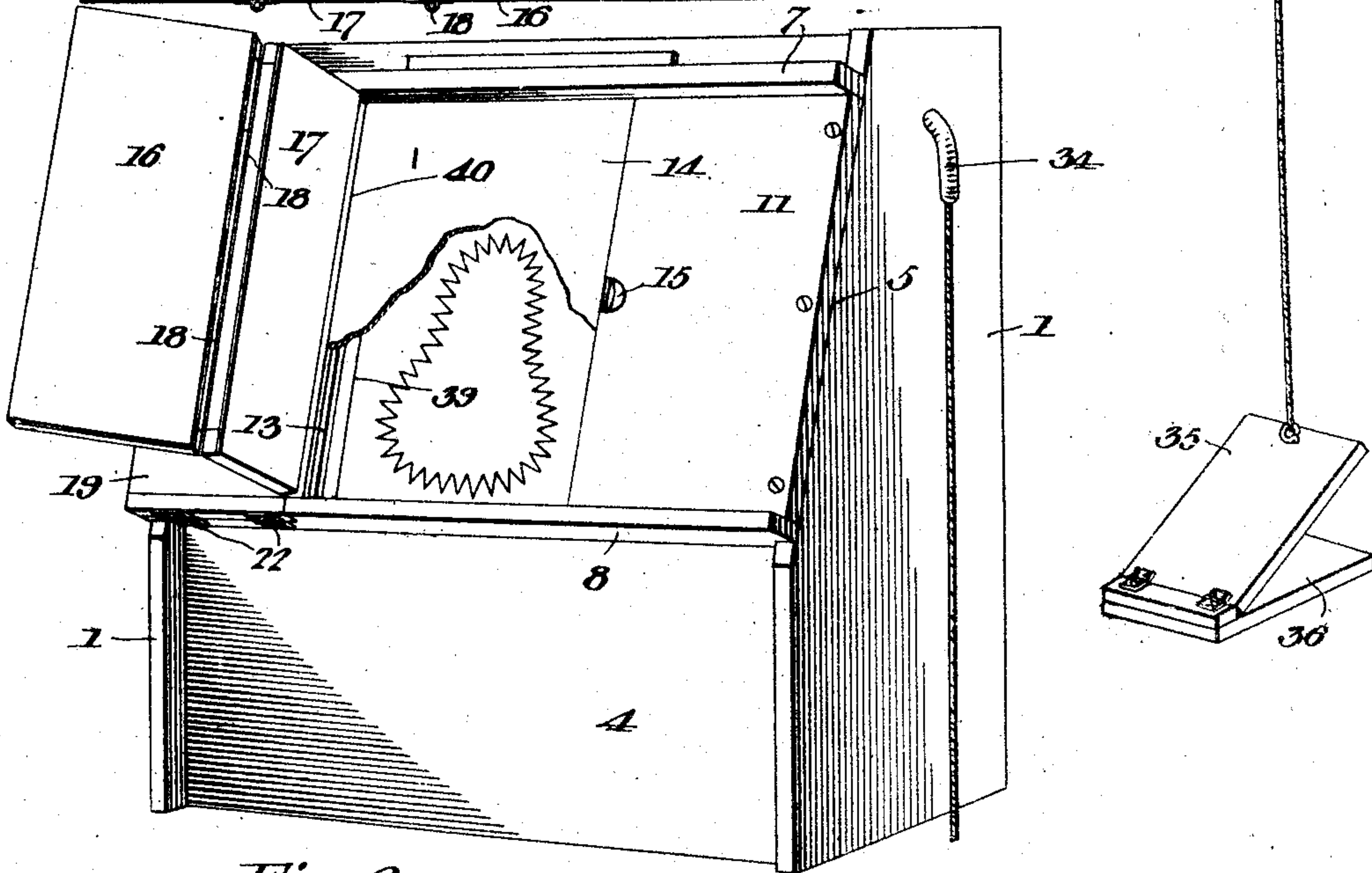
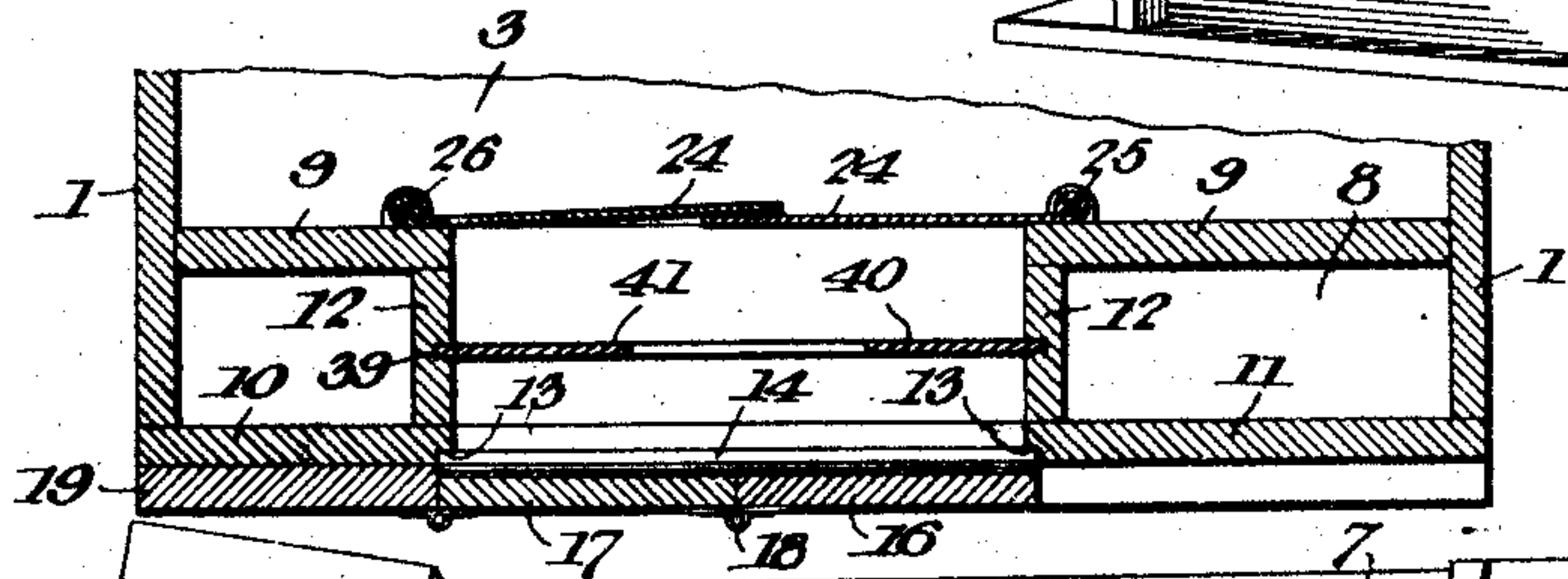


Fig. 2.

Otho C. Courtright and
Albert D. Mika, Inventors.

Witnesses
E. J. Stewart
H. A. Shepard

by C. A. Snow & Co.,
Attorneys

O. C. COURTRIGHT & A. D. MIKA.
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2 SHEETS—SHEET 2.

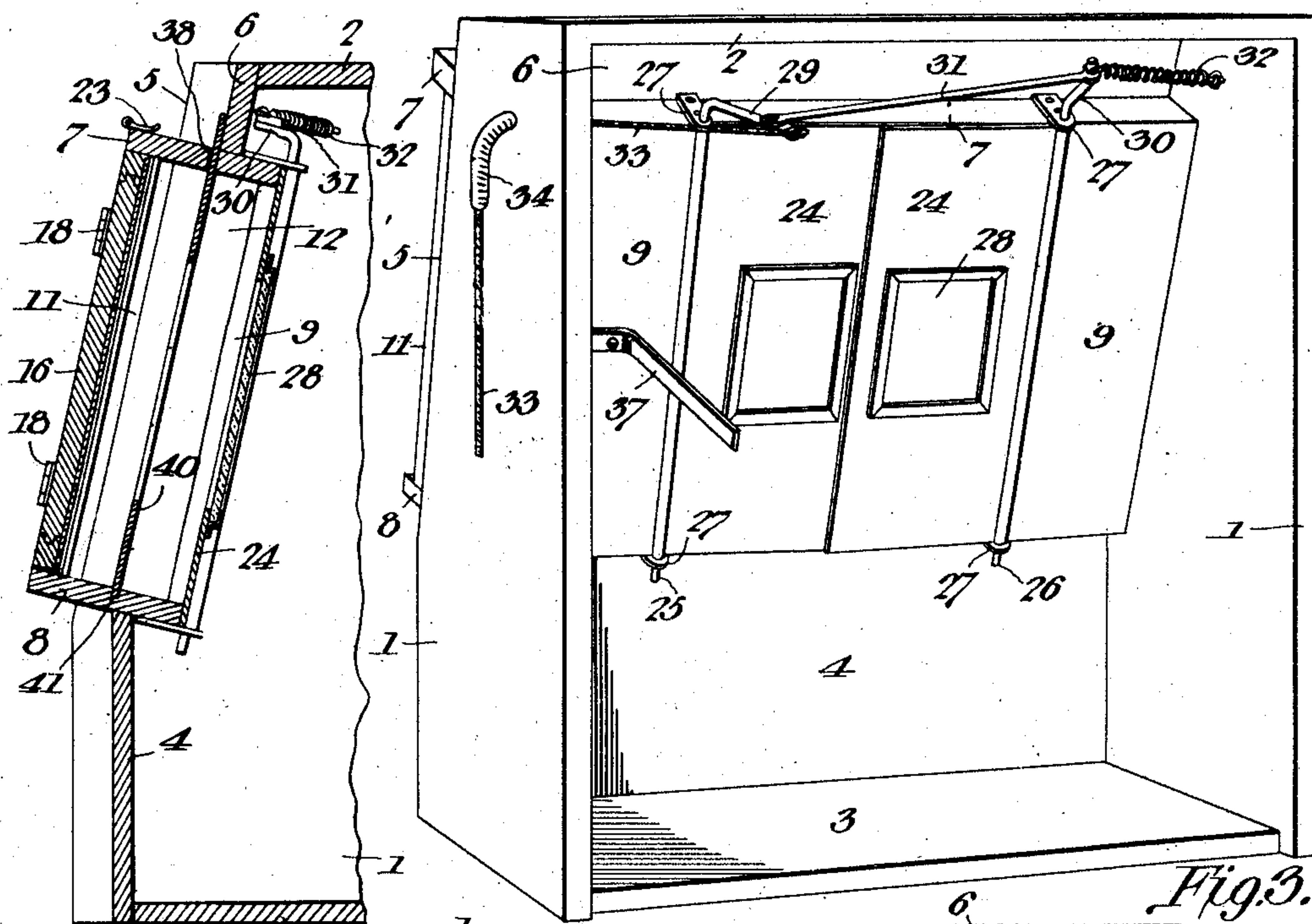


Fig. 4.

Fig. 3.

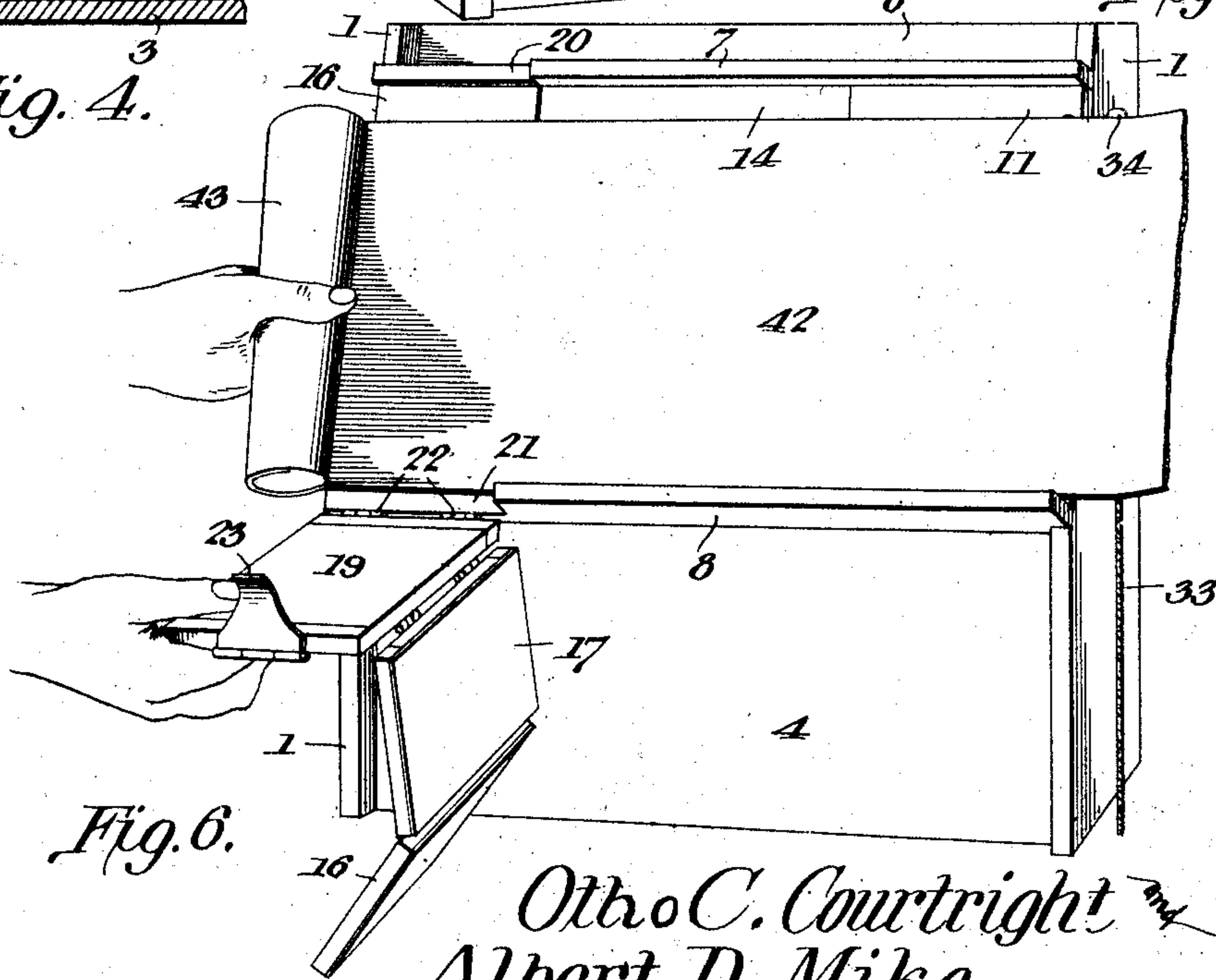


Fig. 6.

Otho C. Courtright
Albert D. Mika,

Inventors.

by *C. A. Snow & Co.*
Attorneys

Witnesses

E. H. Stewart
H. W. Shepard

UNITED STATES PATENT OFFICE.

OTHO C. COURTRIGHT AND ALBERT D. MIKA, OF FORT MADISON, IOWA.

PHOTOGRAPHIC-PRINTING CABINET.

No. 815,267.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed April 25, 1905. Serial No. 257,390.

To all whom it may concern:

Be it known that we, OTHO C. COURTRIGHT and ALBERT D. MIKA, citizens of the United States, residing at Fort Madison, in the county of Lee and State of Iowa, have invented a new and useful Photographic-Printing Cabinet, of which the following is a specification.

This invention relates to photographic-printing frames, and is particularly designed to facilitate the handling of the printing-paper and to enable the centering of the negatives upon the print-paper without liability of the latter becoming light-struck.

Other objects reside in the provision of means to enable the convenient printing of panoramic views, to facilitate the application of vignetting cards, and to enable the quick exposing of the negative and cutting off of the light therefrom in a prompt and effective manner, so as to avoid overexposures when using quick-printing paper such as Velox, Argo, and the like.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a photographic-printing frame embodying the features of the present invention. Fig. 2 is a similar view, enlarged, showing the paper-holder folded back to disclose the position of a vignetting-card. Fig. 3 is a perspective view of the front of the frame. Fig. 4 is a vertical sectional view of the device. Fig. 5 is a horizontal sectional view. Fig. 6 is a perspective view showing the manner of using the device for printing panoramic views.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

The present printing-frame is in the nature of a box having an open front for the reception of the light and closed at the back by permanent wall portions and removable paper-holding means to enable the application and removal of the printing-paper and includes opposite upright sides 1, a top 2, a bottom 3, and a permanent lower rear or back section 4, which is set in slightly from the rear edges of the sides 1 and extends about one-third of the height of the frame. From about the upper edge of the permanent back

4 the rear edges of the sides 1 incline upwardly and forwardly, as indicated at 5. A relatively short permanent back member 6 extends between the sides 1, which produces an opening between the top edge of the back member 4 and the lower edge of the back member 6. Within the opening thus formed in the back of the main frame there is a plate-holding frame made up of a top 7, fitted snugly against the lower edge of the part 6 at substantially right angles to the inclined edge 5 of the sides of the main frame and projecting in rear of said edge and in front of the top back section 6. A bottom 8 is fitted snugly against the top of the lower back section 4 and projects in front of the latter and in rear of the inclined back edges of the main frame. The front of the frame is partially closed by means of permanent spaced front members 9, and the back is partially closed by corresponding permanent back members 10 and 11, whereby the front and back of the plate-holding frame are open centrally to admit light from one side of the device and to permit of the introduction and removal of negatives and printing-paper at the back of the device. Upright side members 12 extend between the front and back members 9 and 10 and 9 and 11 and also between the top and bottom members 7 and 8.

As best shown in Fig. 5 of the drawings, it will be noted that the inner edges of the permanent back members 10 and 11 are provided with corresponding rabbeted portions 13, forming seats or flanges against which a negative 14 is adapted to be placed, so as to prevent displacement of the negative forwardly through the exposure-opening bounded by the top and bottom members 7 and 8 and the side members 12 of the plate-holding frame. The middle portion of the seat or rabbet 13 of the back member 11 is interrupted by a finger-notch 15 in the rear or exposed face of the part 11 to enable the convenient removal of the negative from the seat in which it is fitted.

It will here be explained that the depth of the seat or rabbet 13 is substantially the thickness of the negative in order that the rear face of the latter may lie flush with the back of the frame.

The means for holding the negative in its seat includes a back made up of a pair of members 16 and 17, which are of a size to fit easily between the top 7 and bottom 8 and to overlap the space or opening between the per-

manent back members 10 and 11, said members 16 and 17 being hinged together, as at 18. The foldable back member 17 is in turn hinged to a third back member 19, the latter being longer than each of the members 16 and 17 and the rear edges of the top and bottom 7 and 8 being notched or cut away, as indicated at 20 and 21, to accommodate the member 19, the latter being hinged at its lower edge, as at 22, to the bottom member 8 and normally held against the adjacent permanent back member 10 by means of a spring-clip 23, designed to snap over the top 7, so as to rigidly and detachably hold the member in place.

The front of the exposure-opening through the plate-holding frame of the present device is controlled by a pair of doors or shutter members 24, which have their hinged edges provided with the respective pintle-rods 25 and 26, piercing suitable bearing ears or hinge members 27, secured to the top and bottom members 7 and 8 and projected slightly in advance of the latter. Each of these doors is provided with a sight-opening having a ruby-colored glass 28 to exclude actinic rays from the negative and at the same time to admit sufficient light to said negative to enable the examination of the negative without affecting the print-paper. At the upper end of the pintle-rod 25 there is a crank-arm 29 extending forwardly, and another crank-arm 30 is provided upon the upper end of the pintle-rod 26 and extending inwardly from the top 7, the two crank-arms being connected by a suitable connecting-rod 31. A helical spring 32 is connected to the crank-arm 30 and to the adjacent side 1 of the main frame, while an actuating-cord 33 is connected to the crank 29 and passes outwardly through the adjacent side 1, there being a downturned elbow-guide 34 piercing the main frame of the device and receiving the cord, so as to prevent binding thereof when working through the frame. The spring 32 normally and yieldably maintains the doors or shutters 24 closed, and these doors or shutters may be opened by manipulation of the cord 33.

For convenience in controlling the cord 33 there is a treadle 35, having the lower end of the cord connected thereto, said treadle being hinged to a base 36, which rests upon the floor, to which it may be anchored in a suitable manner. The opening of the doors or shutters under the influence of the controlling-cord 33 is limited by a stop 37 in the nature of an angle-bracket secured to the front of the part 9 and disposed in the opening path of the shutter.

In practice the present device is placed upon any elevated support, as shown in Fig. 1, preferably a window-sill, with the open front directed outwardly, there of course being a curtain or other closure to the window to exclude the light from the room during the

fitting of the print-paper in the frame. The movable back made up of the parts 16 and 17 is then opened, as in Fig. 2, and the negative 14 placed in the seat formed by the rabbets 13, as best shown in Fig. 5. The print-paper is then cut to the desired size and placed against the negative, which is flush with the back of the frame, after which the movable back or back closure is folded flat against the paper, so as to hold the same in contact with the negative, the front face of the back closure of course being lined with felt or other material in the usual manner of printing-frames. With the parts thus assembled pressure upon the treadle 35 will quickly and positively open the shutter made up of the doors 24, so as to quickly and positively admit light simultaneously to all parts of the negative and through the latter to the print-paper. By having the shutter members swing open instead of sliding the admission of light to the negative is practically simultaneous throughout its entire area, whereby all parts of the printing-paper will be exposed for the same interval of time, which insures a uniformity of the print without any liability of overexposure of any portion thereof. After the exposure has been continued for the desired interval the foot is removed from the treadle and the shutter is promptly closed by the spring 32, whereupon the print may be quickly removed from the printing-frame by opening the back closure. The curtain or other closure for the window is of course drawn prior to opening the shutter, and before or after the curtain has been drawn the operator may view the position of the negative upon the print-paper by means of the ruby light, which is admitted through the ruby glasses 28 of the shutter, so as to enable convenient centering of the paper upon the negative.

To enable the use of a vignetting slide or card, the top 7 of the plate-holding frame is provided with a slot 38 in rear of the permanent back portion 6 of the main frame, the inner faces of the parts 12 being provided with corresponding grooves or guideways 39, communicating with the ends of the slot 38, for the reception of the vignetting card or slide 40, the bottom 8 of the plate-holding frame being provided with a groove or seat 41 for the reception of the lower end of the card.

As the present invention is particularly designed for printing fast paper, such as Velox, Argo, &c., it is an important feature that the sides, top, and bottom of the main frame project somewhat in front of the exposure-opening, so as to form a guard or shield to prevent the sun's rays from falling directly upon the negative, and the plate-holding frame is also inclined slightly from the vertical, so as to further guard against receiving the rays of sunlight directly upon the negative.

In printing a series of pictures upon a single sheet of paper, particularly panoramic views, the entire back closure is opened, as shown in Fig. 6, and the free end portion 42 of a roll of paper 43 is placed across the back of the device, with its lower edge supported upon the ledge afforded by the rear projected portion of the part 8, after which the closure is returned to its normal position, so as to hold the paper in place flat against the negative. After each exposure the negative is removed, another negative inserted in place thereof, and the print-paper shifted so as to bring the margins of the first print and the new negative into alinement in order that the second print may form a continuation of the first print, these operations being successively continued throughout the entire series of pictures. The ruby glasses 28 of the shutter members are of particular importance in printing panoramic views, as they enable the careful examination of the negative through the print-paper from the back of the device to enable the fitting of one edge of the previous print to the adjacent edge of the negative to be exposed without danger of the paper becoming light-struck, thereby facilitating the handling of the paper and insuring a proper engagement and obviating overlapping of the successive views.

While the operation of the present device has been described in connection with ordinary sunlight, it is of course capable of being used with electric or other artificial light with good results.

Having thus described the invention, what is claimed is—

1. A printing-frame open at the front and having a back provided with an exposure-opening, negative and paper holding means associated with the opening, and a light-excluding shield extending around the top and sides of the opening and projecting in front thereof.

2. A photographic-printing frame having a negative-receiving seat adapted to support a negative flush with the back of the frame, and a paper-supporting ledge extending across the bottom and extended at one side of the seat at the back of the frame.

3. A photographic-printing frame having a negative-receiving seat adapted to support a negative flush with the back of the frame, a paper-supporting ledge extending across the bottom and extended at one side of the seat along the back of the frame, a removable paper-holding back, and a shutter at the front of the frame.

4. A photographic-printing frame having a negative-receiving seat adapted to support a negative flush with the back of the frame, a paper-supporting ledge extending across the bottom and extended at one side of the seat along the back of the frame, and a paper-

holding back adapted to close across the negative-receiving seat and capable of being moved clear of the upper side of the paper-supporting ledge.

5. A photographic-printing frame having a negative-receiving seat adapted to support a negative flush with the back of the frame, a paper-supporting ledge extending across the bottom of the seat and projected at one side thereof along the back of the frame, and a foldable paper-holding back hinged to the frame at the opposite side of the seat and adapted to lie across the seat and also capable of being swung clear of the upper side of the paper-supporting ledge.

6. A photographic-printing frame having a negative-receiving seat adapted to hold a negative flush with the back of the frame, a paper-supporting ledge extending across the bottom of the seat with one end projected beyond the seat, and a paper-holding back adapted to fold across the seat with one end projected across the other end of the paper-supporting ledge and hinged to the frame.

7. In a photographic-printing frame, the combination of an upright main frame which is open at its front and is provided with a forwardly-inclined back portion, the inclined back portion of the frame being provided with an exposing-opening, a plate-holding frame fitted in the opening and conforming to the inclination of the inclined portion of the back, swinging shutter members mounted upon the front of the plate-holding frame, controlling means piercing one side of the main frame for simultaneously opening the shutters, a negative-receiving seat at the back of the plate-holding frame adapted to support a negative flush with the back of the frame, a paper-supporting ledge across the bottom of the seat and projected at one side thereof, and a foldable paper-holding back capable of extending across the negative-receiving seat with one end projected beyond the seat and also projected across the adjacent end of the ledge and hinged to the back of the frame.

8. A printing-frame open at the front and having a back provided with an exposure-opening, negative and paper holding means associated with the opening, and a light-excluding shield extending around the top and sides of the opening and projecting in front thereof, the portion of the back having the exposure-opening being inclined upwardly and forwardly.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

OTHO C. COURTRIGHT.

ALBERT D. MIKA.

Witnesses:

J. M. RISSU,

GEO. E. ROGERS.