(No Model.) 2 Sheets—Sheet 1.

W. T. FERGUSON.

PORTABLE PHOTOGRAPHIC DARK ROOM.

No. 571,085. Patented Nov. 10, 1896.

FIG. 1.

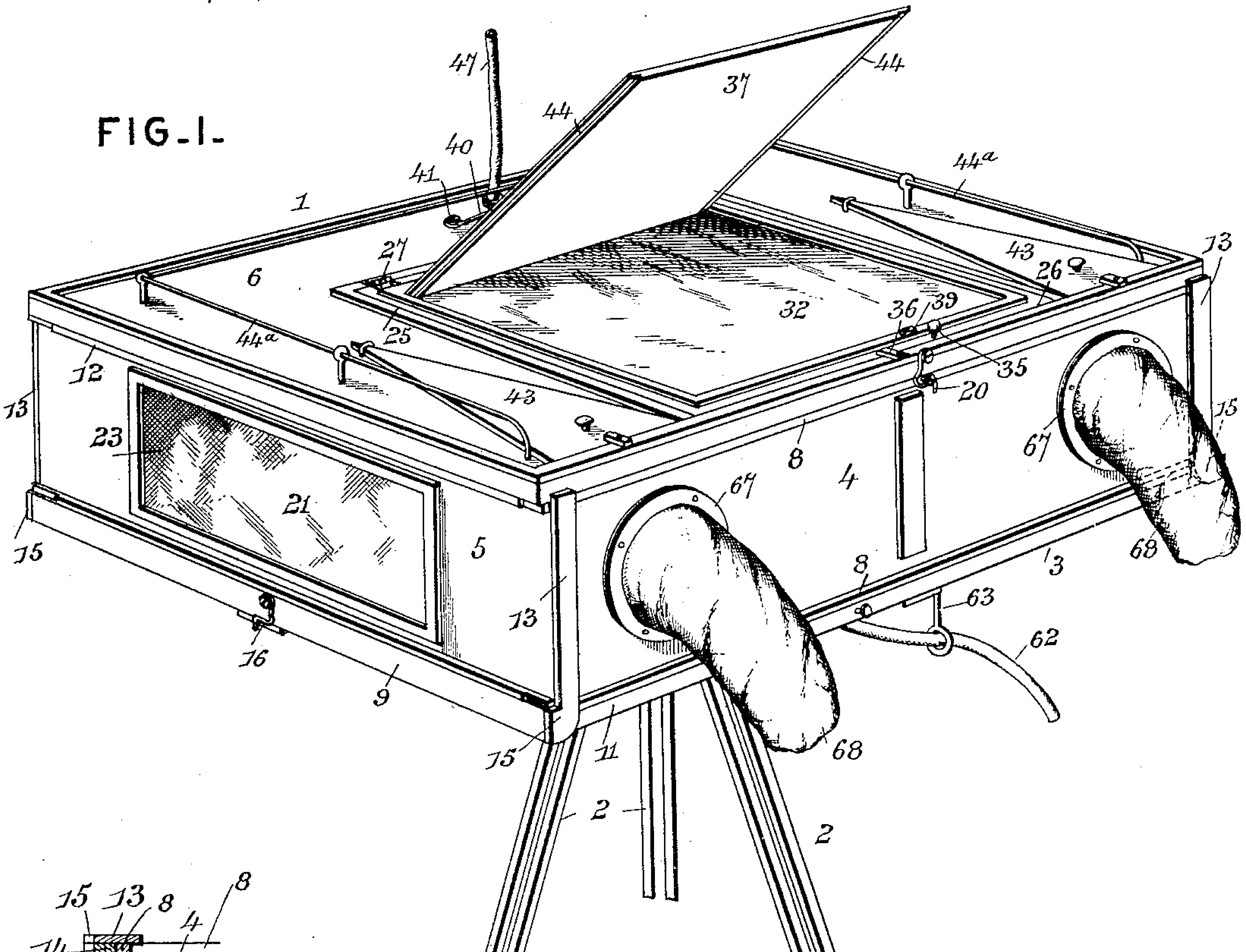


FIG. 8.

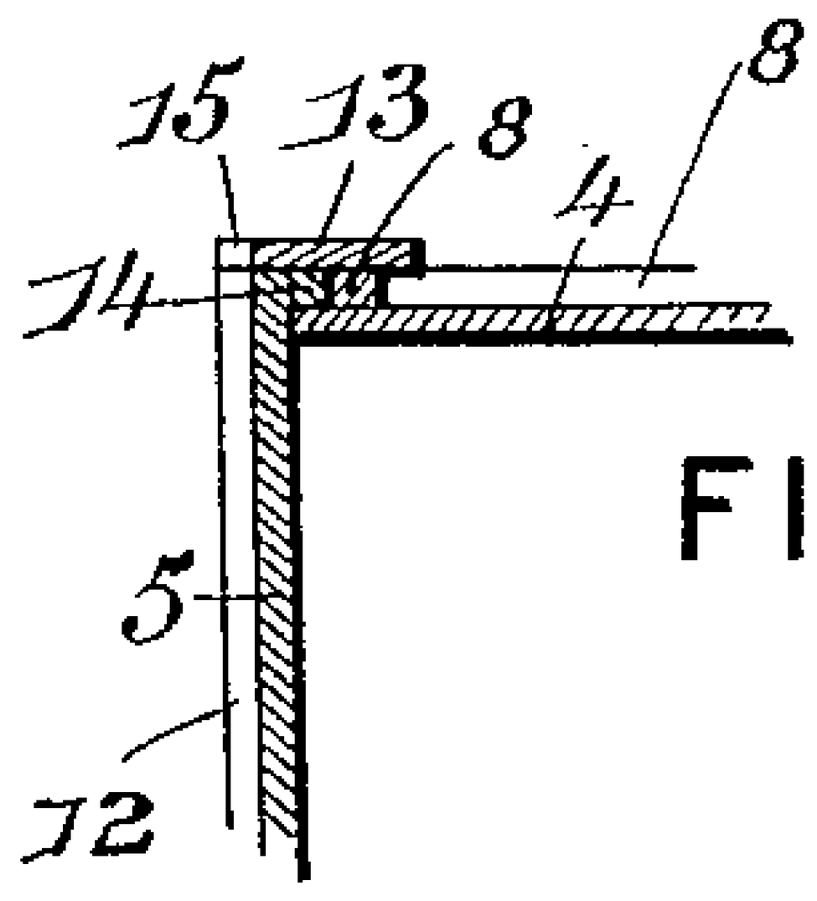
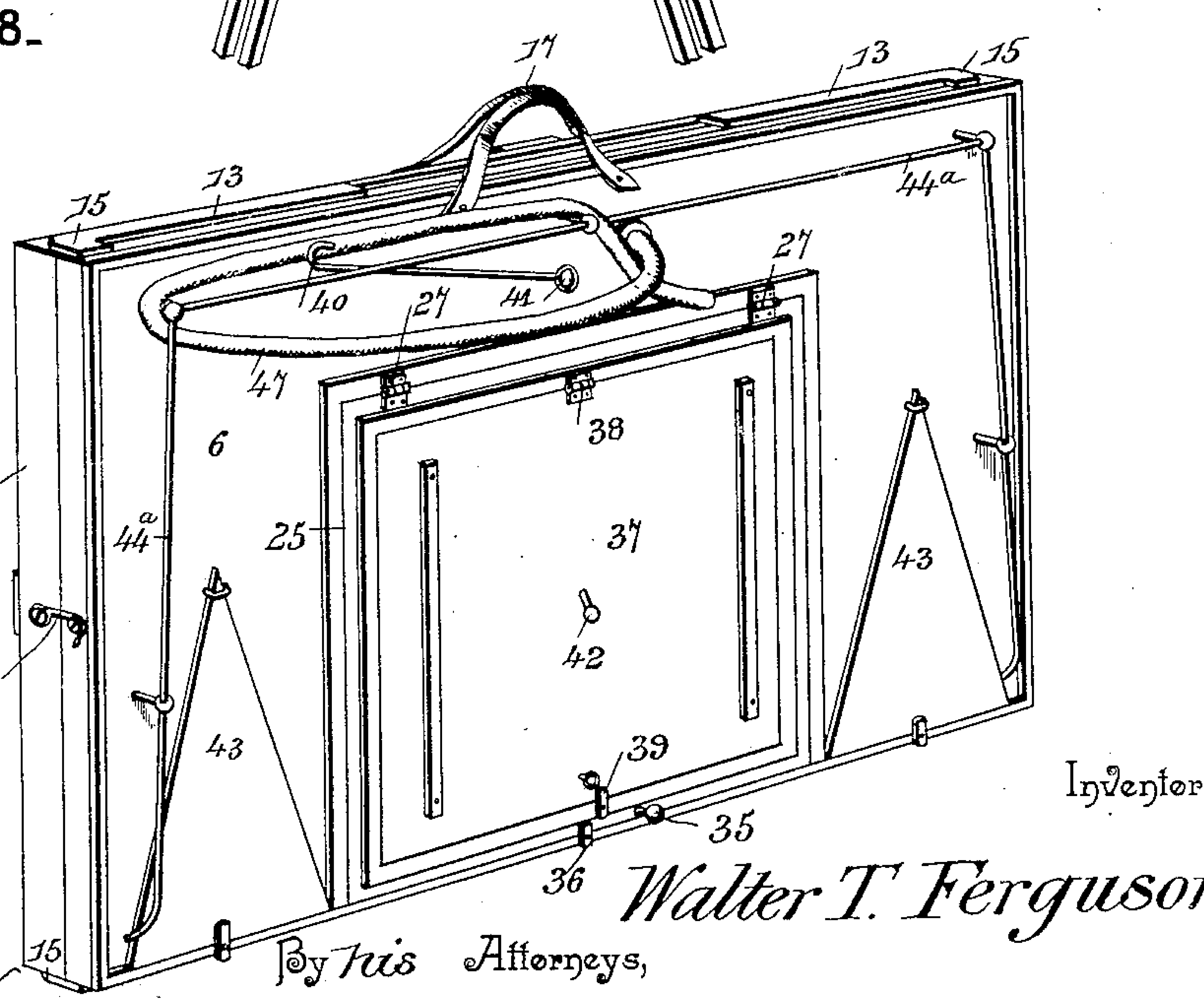


FIG. 6.



Witnesses
Jas. K. McCathran
D. P. Wolhaupter

Inventor
Walter T. Ferguson
By his Attorneys,
C. A. Snow & Co.

(No Model.) 2 Sheets—Sheet 2.

W. T. FERGUSON.

PORTABLE PHOTOGRAPHIC DARK ROOM.

No. 571,085. Patented Nov. 10, 1896.

FIG. 2.

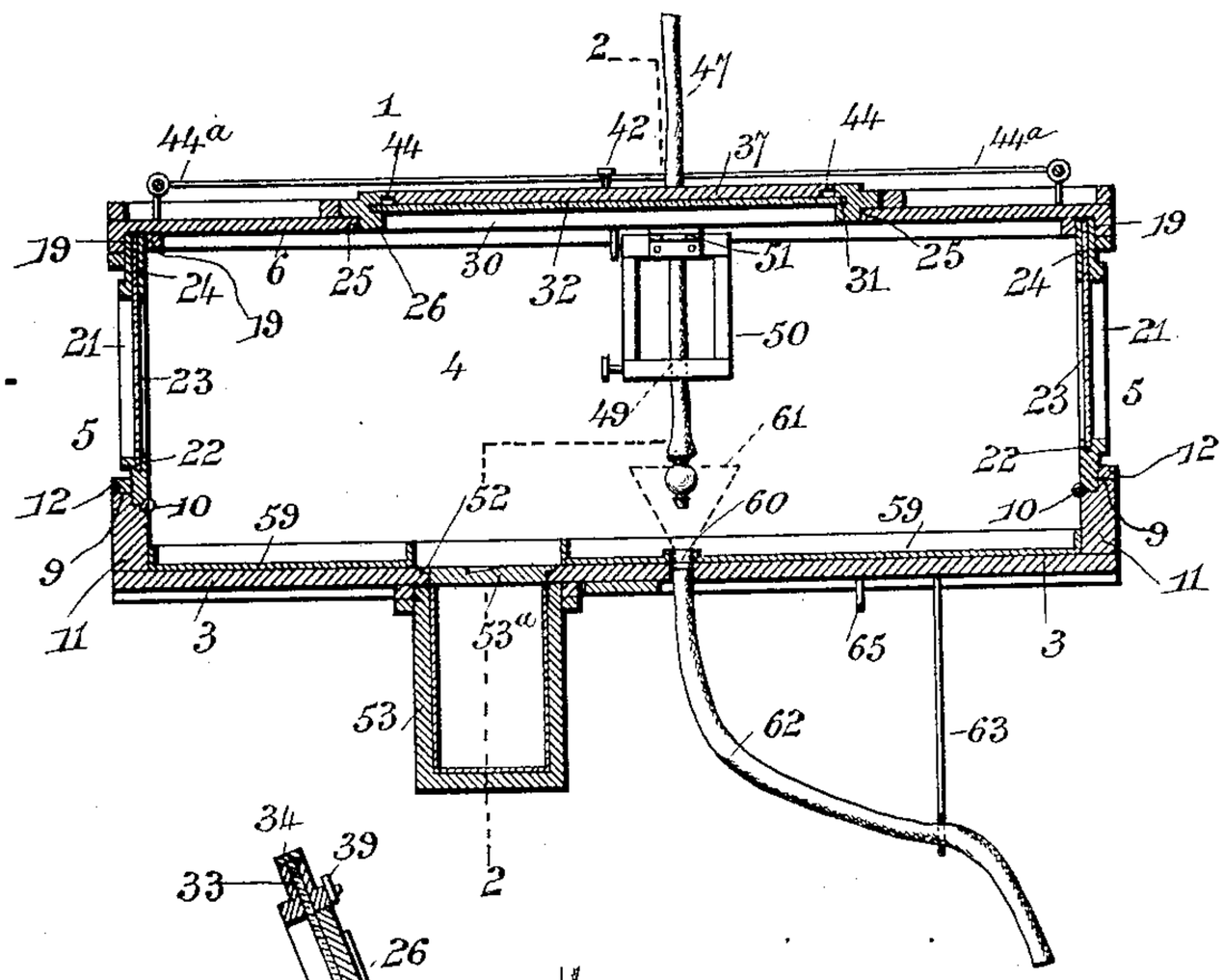


FIG. 3.

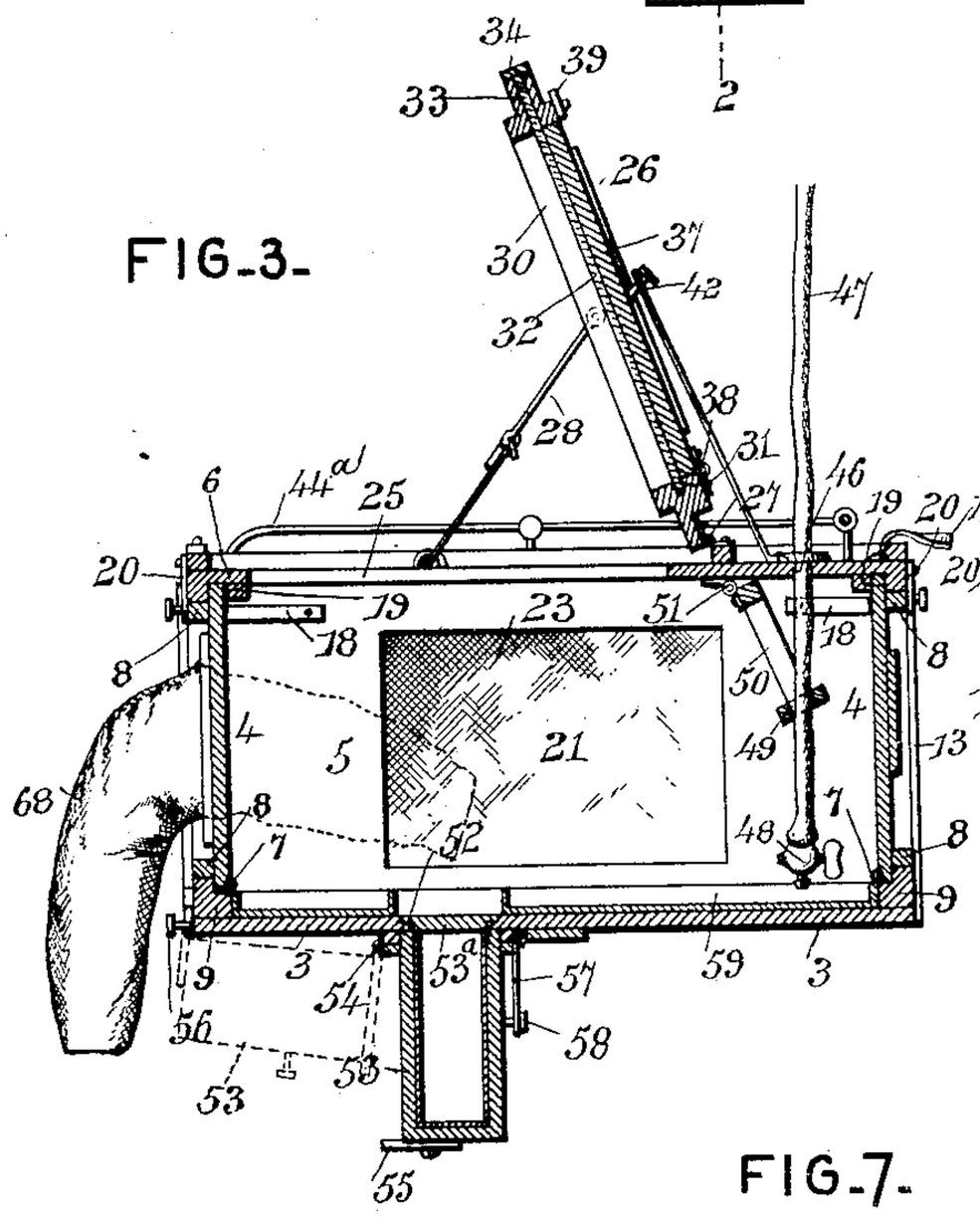


FIG. 4.

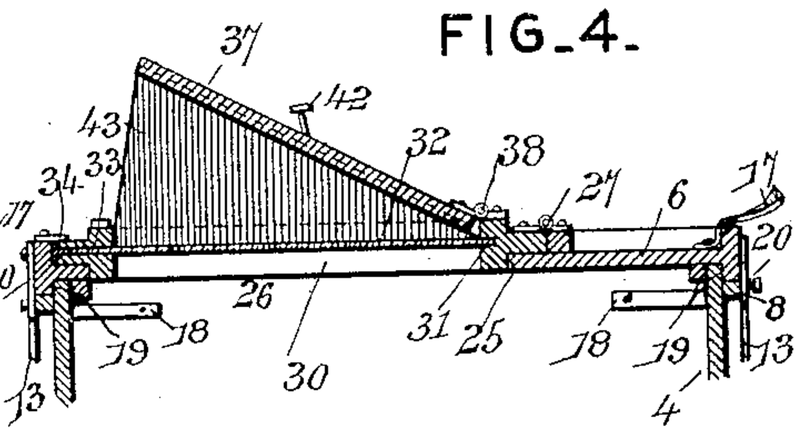


FIG. 5.

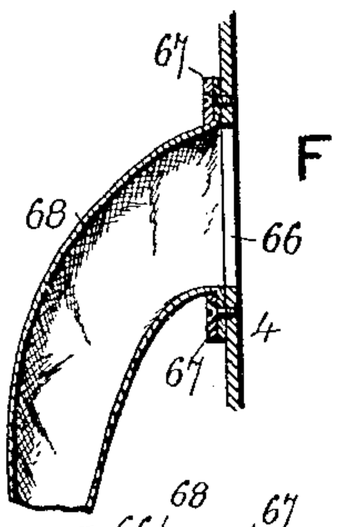
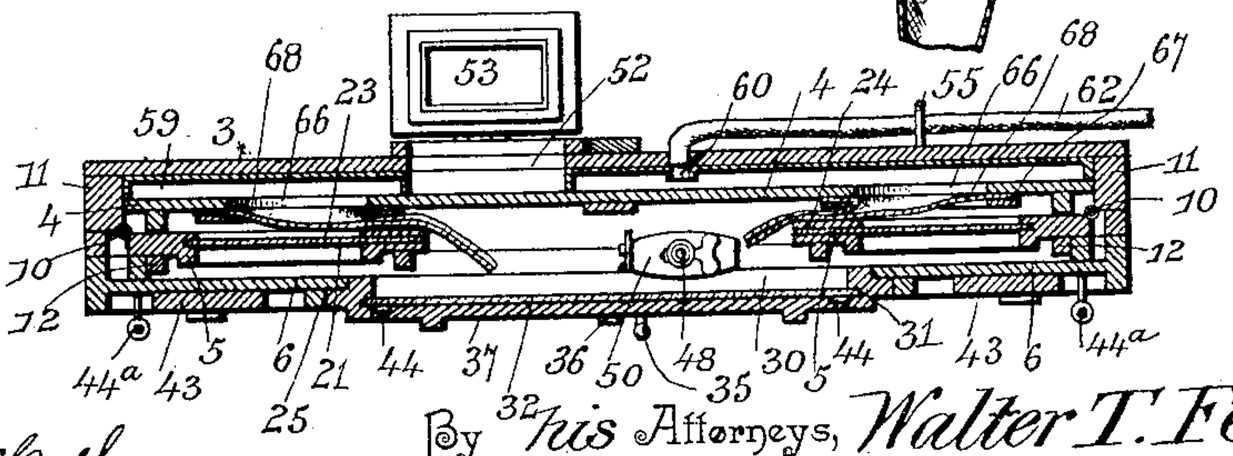


FIG. 7.



Witnesses
Jas. E. McCathran
L. C. Wolhampter.

Inventor
By his Attorneys, Walter T. Ferguson
& Co.

UNITED STATES PATENT OFFICE.

WALTER T. FERGUSON, OF BICKLEY MILLS, VIRGINIA.

PORTABLE PHOTOGRAPHIC DARK ROOM.

SPECIFICATION forming part of Letters Patent No. 571,085, dated November 10, 1896.

Application filed December 27, 1895. Serial No. 573,430. (No model.)

To all whom it may concern:

Be it known that I, WALTER T. FERGUSON, a citizen of the United States, residing at Bickley Mills, in the county of Russell and State of Virginia, have invented a new and useful Photographic Portable Dark Room, of which the following is a specification.

This invention relates to photographic folding dark rooms; and it has for its object to provide a portable dark room for photographic purposes which can be readily set up for use at any convenient point and also readily folded up into a small compass, so that the same can be carried from place to place by hand in the same manner as a camera.

To this end the main and primary object of the present invention is to provide a folding portable dark room that shall meet every requirement of the photographer for developing dry or wet plates, filling plate-holders, or handling any sensitized surface without the necessity of being closeted or shut up in the usual poorly-ventilated and otherwise objectionable "dark room," and in the accomplishment of these important objects the present invention is especially useful as a part of a traveling photographic outfit.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a perspective view of a portable dark room constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a transverse sectional view on the line 2 2 of Fig. 2. Fig. 4 is a detail sectional view on the same line of section as Fig. 3, showing the triangular side shades for the hinged top window in position for outdoor use. Fig. 5 is an enlarged detail sectional view through one of the armholes and the sleeves employed in connection therewith. Fig. 6 is a perspective view of the dark room folded up for transportation. Fig. 7 is a central longitudinal sectional view of the dark room when in its folded condition. Fig. 8 is a detail sectional view at one corner of the box or cabinet.

Referring to the accompanying drawings, 1 designates a portable folding box or cabinet, adapted to be removably supported on a tripod or other suitable light support 2, and the said box 1 essentially consists of a thin flat bottom board 3, the opposite side and end boards 4 and 5, respectively, and a removable top board 6. The opposite side boards 4 are hinged at their lower edges by means of suitable hinges 7 to the opposite top edges of the bottom board 1, so that when the box or cabinet is not in use and is ready for transportation the said side boards can be readily folded inward over the top of the bottom board. The boards 4 are provided on their outer sides with the flange-strips 8, which are arranged parallel with the side and end edges of the boards 4, and when the latter are unfolded and swung upward the lower of said flange-strips 8 of the boards 4 will bear tightly on the joint-strips 9, projected upwardly from the opposite side and end edges of the bottom board 3 to form perfectly light-tight joints at the point of connection between the side boards and the bottom board when the former are straightened up to form the opposite inclosing sides of the box or cabinet.

The opposite end boards 5 of the box or cabinet are hinged at their lower edges by means of the hinges 10 to the end cleats 11, secured to the opposite end top edges of the bottom board 1, and which are of a width equaling the combined width or thickness of the side boards 4 and the flange-strips 8 projected from the outer sides thereof, so that when the side boards are folded inward over the top of the bottom board the hinged end boards can also be folded inward so as to rest flat on top of the folded side boards, as clearly illustrated in the drawings, thereby providing an arrangement for collapsing the box or cabinet within as small a compass as possible. The folding hinged end boards 5 are also provided on their outer sides and near their upper and lower edges with the flange-strips 12, the lower of which are adapted to bear tightly on the joint-strips 9 at the end edges of the bottom board when the end boards are unfolded to an upright position, thereby forming light-tight joints between the point of connection between the end boards and the bottom board. The said end boards 5 are further provided at their end edges with the corner cleats 13, which overlap the ends of

the side boards 4 when the side and end boards are in their upright positions, and within the angles formed at the ends of the boards 5 by the cleats 13 are fitted joint-strips 14, which register at one side of the flange-strips 8 at the opposite ends of the boards 4, thereby insuring perfectly light-tight joints at the corners of the box or cabinet, while the cleats 13 form braces for the said corners of the box or cabinet. The said corner cleats 13 are provided at one end with the short laterally-extending feet 15, which, when the side and end boards are folded down on the bottom board, are designed to overlap the side edges of the top board 6 at the corners thereof, so that such top board will be braced in its knockdown position on top of the folded side and end boards. With the side and end boards folded down over the bottom board and the top board placed in the position just described, the entire box or cabinet is ready for transportation, and when in this position the top board 6 is adapted to be fastened to the opposite ends of the bottom board by means of suitable catches 16. When the box or cabinet is in its knockdown or folded condition, the same is adapted to be conveniently carried about by means of a pair of flexible handles 17, secured, respectively, to the adjacent side edges of the top and bottom boards, as clearly illustrated in the drawings.

When the box or cabinet 1 is set up for use on top of the tripod or other suitable support 2, the folding side and end boards are held rigidly in their unfolded upright positions by means of the fastening-buttons 18, pivotally mounted at the inner side of one of the end boards 5 and adapted to be turned against the inner sides of the side boards 4 at one end thereof; but it will of course be understood that these fastening-buttons may be located at both ends of the box or cabinet instead of at one end, as illustrated. With the side and end boards of the box or cabinet fastened in their upright positions, the top board 6 is adapted to be secured on the top edges of such boards to form an inclosing top for the box or cabinet.

In order to insure a perfect light-tight connection with the folding side and end boards, the top board 6 is provided on its under side with a peripheral annular groove 19, which snugly receives and fits over the projecting top edges of the side and end boards 4 and 5, and when the top board has been fitted on top of the side and end boards the same is securely fastened in place by means of suitable latches 20, connecting the opposite side edges of the top board with the opposite folding side boards 4.

In order to assist in properly lighting the interior of the box or cabinet 1, the opposite end boards 5 are provided therein with the light-openings 21, which openings are provided in their edges with the grooves 22 to removably receive the orange or other suitably-colored glass panes 23. The grooves 22 in the opposite side edges of the openings 21 lead into slide-openings 24, formed in the top edges of the end boards 5 and communicating with the said openings 21, so that the glasses 23 can be readily removed and replaced at any time that it may be necessary. In addition to the glass panes 23, removably fitted in openings in opposite ends of the end boards 5, further provision for lighting the interior of the box or cabinet and for inspection thereof is made by providing the top board 6 with a flanged window-opening 25, within the flange of which opening is designed to be seated a hinged window-frame 26. The window-frame 26 is hinged at its rear edge by the hinges 27 to the top of the board 6 within the flanged seat of the opening 25, so that the window-frame can be readily raised and lowered in manipulating and adjusting the position of the articles contained within the box or cabinet when preparing for developing or other operations.

The hinged window-frame 26 has connected to its under side and at one end a folding jointed brace 28, which, when the window-frame is elevated, serves as a support to hold the same open, and which will fold down with the said frame, so as to allow the same to snugly register within the flanged seat of the window-opening 25. The hinged window-frame 26 is provided therein with a light-opening 30, having in its edges the grooves 31 to removably receive the orange or other suitably-colored glass pane 32. The grooves 31 in opposite edges of the opening 30 lead into a slide-opening 33, formed in the front unhinged edge of the frame 26 and communicating with the said opening 30, so that the glass 32 can be readily removed and replaced at any time desired, and when the glass 32 is in place the slide-opening 33 in the front edge of the frame 26 is closed by a flanged plug-strip 34, removably fitted therein to exclude actinic rays at that point.

The photographer in using the box or cabinet has the entire interior of the apparatus fully exposed to view through the window consisting of the frame 26 and the colored glass pane 32, which window can be readily raised and lowered by grasping the finger-knob 35 attached to its front edge, and which may be locked over the window-opening 25 by means of a suitable turn-buckle 36; but in using the said window it is desirable to properly shade the same, which is accomplished by the use of a shade-door 37. The shade-door 37 is designed to snugly register within the light-opening 30 on top of the glass 32, and is hinged at one edge, as at 38, to the rear edge of the said light-opening 30.

The free edge of the shade-door 37 is adapted to be engaged by the turn-buckle 39 for fastening the door within the opening 30 while the box or cabinet is being transported. When the box or cabinet is set up for use in a room, the said door 37 is held partly open by means of a suitable hook 40, pivotally attached at

one end, as at 41, to the top board 6 and adapted to detachably engage over the inclined pin or stud 42, projected from the outer side of the said door 37. When the door 37 is held partly open by the hook 40, it will be observed that by reason of the separate hinging of the said door and of the window-frame the latter can be readily raised and lowered without disturbing the connection of the hook with the said pin or stud 42. For outdoor work the shade-door 37 is supplemented by the triangular side shades 43, which when not in use are suitably fastened on top of the board 6 at opposite ends of the window thereof, as illustrated in the drawings. When set up for use, the said side shades 43 are fitted within opposite ends of the light-opening 30, and the upper edges of said side shades register within the rabbets 44, formed in the opposite end edges of the shade-door 37, and as thus positioned the said side shades 43 not only serve as additional shades for the window, but also as supports for the shade-door 37.

The top board 6 is further provided with an offstanding wire rack 44ª, arranged adjacent to the opposite end edges and one side edge, said rack affording a convenient support for the drying of wet plates when such plates are being developed within the box or cabinet, and to provide for the introduction of water within the box or cabinet for developing purposes the said top board has fitted therein at 46 a water-tube 47. The water-tube 47 extends to a suitable point of water supply, preferably a bucket arranged above the box or cabinet, so that the water can be siphoned through the said tube, and at its inner extremity of said box or cabinet the water-tube has attached thereto a valved nozzle 48, providing means whereby the flow of water can be completely controlled by the operator. The portion of the tube 47 which enters the interior of the box or cabinet passes through the lower perforated bar 49 of the rectangular hinged or swinging tube-adjusting frame 50, which is hinged at its upper end, as at 51, to the under side of the top board 6. The swinging frame 50 allows the inner end of the tube 47 to be adjusted to any convenient position in washing plates and the like, and provides also for holding the said inner end of the tube back out of the way when not in use, and when the cabinet is folded up into a small compass, as described, the frame 50 folds up under the top board 6, so as to lie between the folded end boards entirely out of the way, so as not to interfere with the snug fitting of the top board on top of the folded side and end boards.

The bottom board of the box or cabinet 1 is provided therein at a suitable point with a flanged opening 52, adapted to removably receive a cover 53ª, which closes said opening when desired and which also forms a cover for the open upper end of the bath-box 53. The bath-box 53 is of suitable dimensions, so as to hold the bath-dish for the plates being developed or otherwise manipulated, and said bath-box is hinged at one edge, as at 54, to the under side of the bottom board 3, so that when not in use the same can be swung flat up against the said bottom board and held in such position by means of a hook 55, pivoted to the bottom of said box and adapted to engage over a pin or stud 56 at one side edge of the bottom board. When in use, the bath-box 53 is fastened with its open upper end directly below the flanged opening in the bottom board by means of a suitable supporting-hook 57, attached to the bottom board and adapted to engage a suitable pin or stud 58 at one side of the bath-box. With the opening 52 uncovered the bath-dish within the bath-box 53 can be conveniently employed, but with the cover 53ª in position the dark room may be opened up to do any outside work necessary without injuring the plate in the bath, as will be readily understood.

The bottom board 3 of the box or cabinet is preferably designed to have removably fitted thereon a tray 59, which is designed to catch all overflow and drippings and direct the same toward the discharge-opening 60, formed in the said bottom board, said tray having a flanged opening 59ª agreeing with the opening 52. A funnel 61 is designed to be fitted in the opening 60 and arranged within the box or cabinet so as to catch the drippings from the plates during manipulation and to conduct such drippings or overflow into the overflow-tube 62, suitably connected at one end with the discharge-opening 60 and loosely supporting in the lower end of a hanger-link 63, suspended from the bottom of the box or cabinet in order to dispose the discharging end of the tube 62 at one side of the opening 60 to prevent any light entering the cabinet at that point. When the box or cabinet is not in use, the tube 62 is held fast against the bottom of the board 3 by passing the same through a keeper-staple 65, fitted in the lower side of said bottom board, as illustrated in dotted lines in one of the figures of the drawings.

The dark room equipped as described is designed to accommodate both hands of the photographer, so that the different articles can be as readily manipulated as in an ordinary dark room, and to effect this result one of the side boards 4 is provided with a pair of armholes 66, disposed respectively near the ends of said side boards. The said armholes 66 have removably fitted over their outer edges, by means of the removable fastening-rings 67, the inner ends of the flexible opaque sleeves 68, which are made of any suitable opaque materal, so as to entirely exclude light. The said sleeves 68 are designed to be drawn over the wrist of the operator and to tightly fit the wrists, so that when the hands are passed through the armholes 66 no light will enter the box or cabinet, but the hands will be perfectly free to easily handle the plates and

manipulate the same in connection with the various chemicals employed in developing and fixing the plates.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described portable folding dark room will be readily apparent to those skilled in the art, and it will be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In a portable dark room, a collapsible box or cabinet consisting of a flat bottom board, inwardly-folding side boards hinged to opposite side edges of the bottom board, inwardly-folding end boards hinged to the opposite end edges of the bottom boards and provided on their opposite end edges with corner-cleats having at one end short laterally-extending feet, and a removable top board provided in its under side with a peripheral annular groove to receive the projecting top edges of the side and end boards, said top board being also adapted to rest on the side and end boards, when folded, inside of the plane of the short feet of the corner-cleats, substantially as set forth.

2. In a portable dark room, a collapsible box or cabinet consisting of a flat bottom board provided at its opposite side and end edges with joint-strips and at its opposite ends with end cleats, inwardly-folding side boards hinged to the opposite side edges of the bottom board and provided on their outer sides with flanged strips the lower of which are adapted to bear on said joint-strips, inwardly-folding end boards hinged to said opposite end cleats of the bottom board and provided on their outer sides with flange-strips the lower of which bear against said joint-strips, and at their opposite end edges with corner-cleats adapted to overlap the ends of the side boards when in their upright positions, said corner-cleats being provided at one end with short laterally-extending feet, and a removable top board provided on its under side with a peripheral annular groove adapted to receive the projecting top edges of the side and end boards, said top board being also adapted to rest on the side and end boards, when folded, inside of the plane of the short feet of the corner-cleats, said box or cabinet being provided with handles at one edge of its top and bottom boards, suitably-arranged light-openings, and a pair of light-protected armholes, substantially as set forth.

3. In a portable dark room, a collapsible box or cabinet consisting of a bottom board, oppositely inwardly-folding side and end boards, and a removable top board, one of said side boards having a pair of light-protected armholes, and said end boards being provided therein with light-openings having in their top edges slide-openings, and colored-glass panes slidably fitted in said light-openings and adapted to be moved in either direction through the slide-openings in the top edges of said end boards, said slide-openings being covered by the top board when the box or cabinet is set up, substantially as set forth.

4. In a portable dark room, a box or cabinet provided in one side with a pair of light-protected armholes and in the top with a window-opening, a window-frame working over said opening and hinged at one side of the same, said window-frame having a glass-covered light-opening, a shade-door hinged at one edge to one side of the window-frame and working over said light-opening, and a suitable support for holding the shade-door in an elevated position when the window-frame is lowered, substantially as set forth.

5. In a portable dark room, a box or cabinet provided in one side with a pair of light-protected armholes and in the top with a flanged window-opening, a window-frame working over said window-opening and hinged at one side of the same, said window-frame being provided with a light-opening and in its unhinged edge with a slide-opening communicating with said light-opening, a colored glass pane removably fitted in said light-opening, a flanged plug-strip removably fitted in said slide-opening, and an adjustable shade-door hinged to said window-frame, substantially as set forth.

6. In a portable dark room, a box or cabinet provided in one side with a pair of light-protected armholes and in the top with a flanged window-opening, a window-frame working over said opening and hinged at one side of the same, said window-frame having a glass-covered light-opening, a shade-door working over and within said light-opening and hinged at one edge to one side of the window-frame, a suitable support for holding the shade-door in an elevated position, and triangular side shades adapted to be removably fitted under the opposite ends of the shade-door at opposite ends of the light-opening of said window-frame, substantially as set forth.

7. In a portable dark room, the combination of the box or cabinet having suitable armholes and light-openings, a swinging frame hinged at its upper end to the under side of the top board of the box or cabinet and provided with a lower perforated bar, a water-tube fitted in the top board of the box or cabinet and having its lower end extended through the perforation in the lower bar of said frame, and a suitable overflow-pipe connection with the bottom of said box or cabinet, substantially as set forth.

8. In a portable dark room, a collapsible box or cabinet provided in its bottom with an opening, a bath-box hinged to the bottom of the box or cabinet below the opening therein, and fastening means for securing the bath-box against the bottom of the box or cabinet

and in an upright position directly below said opening, substantially as set forth.

9. In a portable dark room, a collapsible box or cabinet provided with suitably-arranged light-openings and a flanged opening in its bottom, a flanged drip-collecting tray fitted in the bottom of the box or cabinet and of an area equaling the same, a bath-box hinged at one edge to the bottom of the box or cabinet below said flanged opening, a cover adapted to removably register in said flanged opening, and fastening means for securing the bath-box against the bottom of the box or cabinet, and also in an upright position directly below said flanged opening, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

W. T. FERGUSON.

Witnesses:
W. H. FERGUSON,
HARVEY G. KAISER.