

No. 711,891.

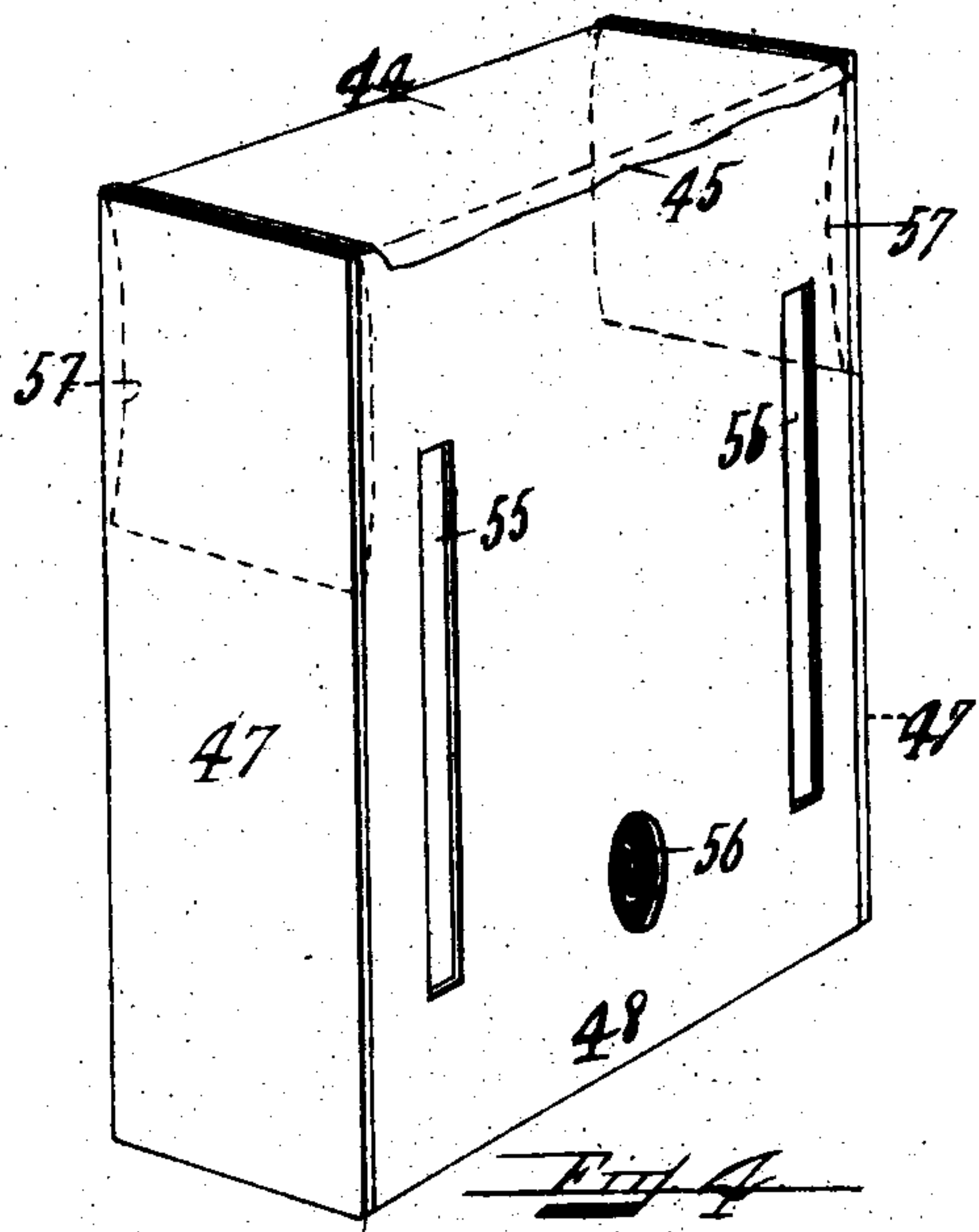
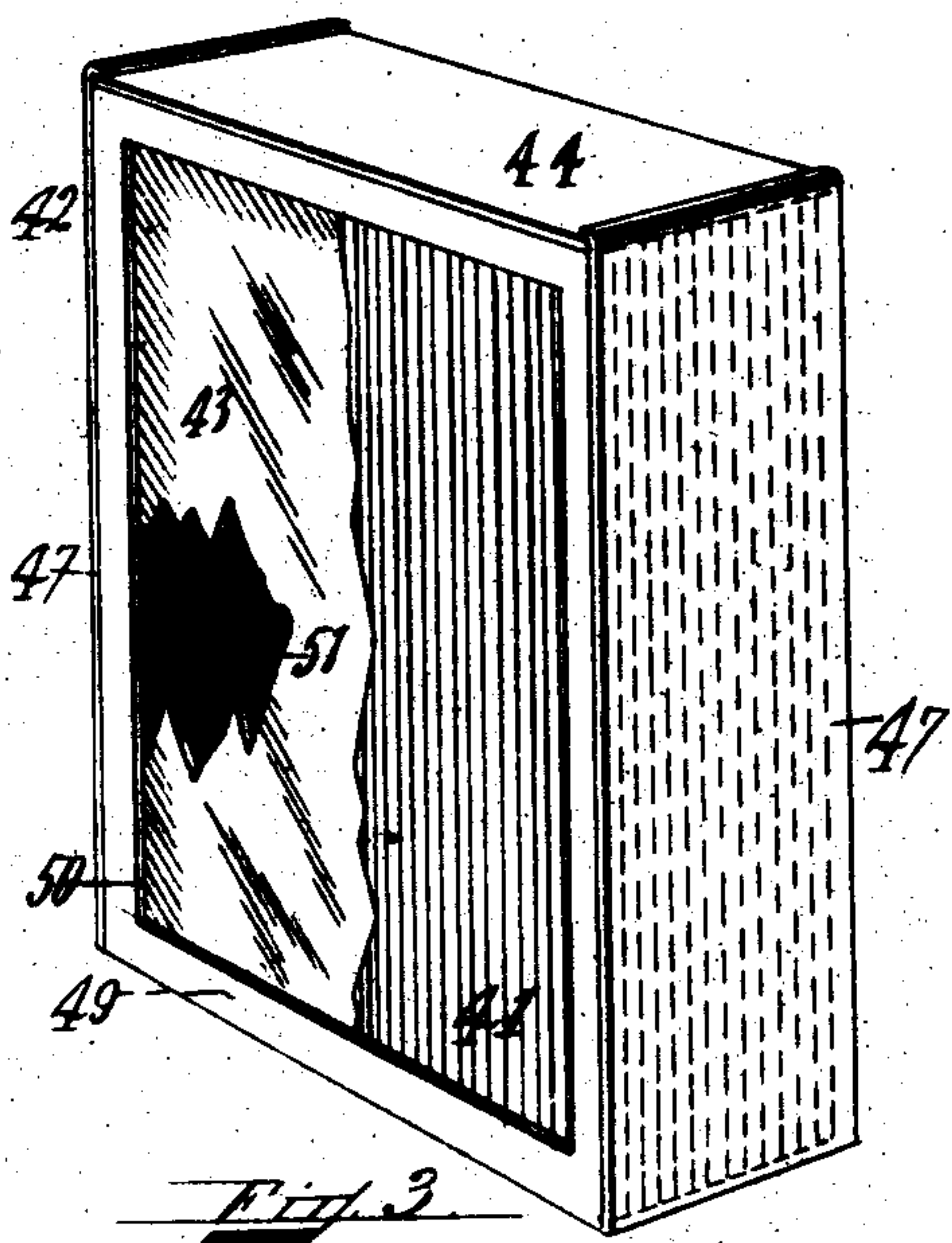
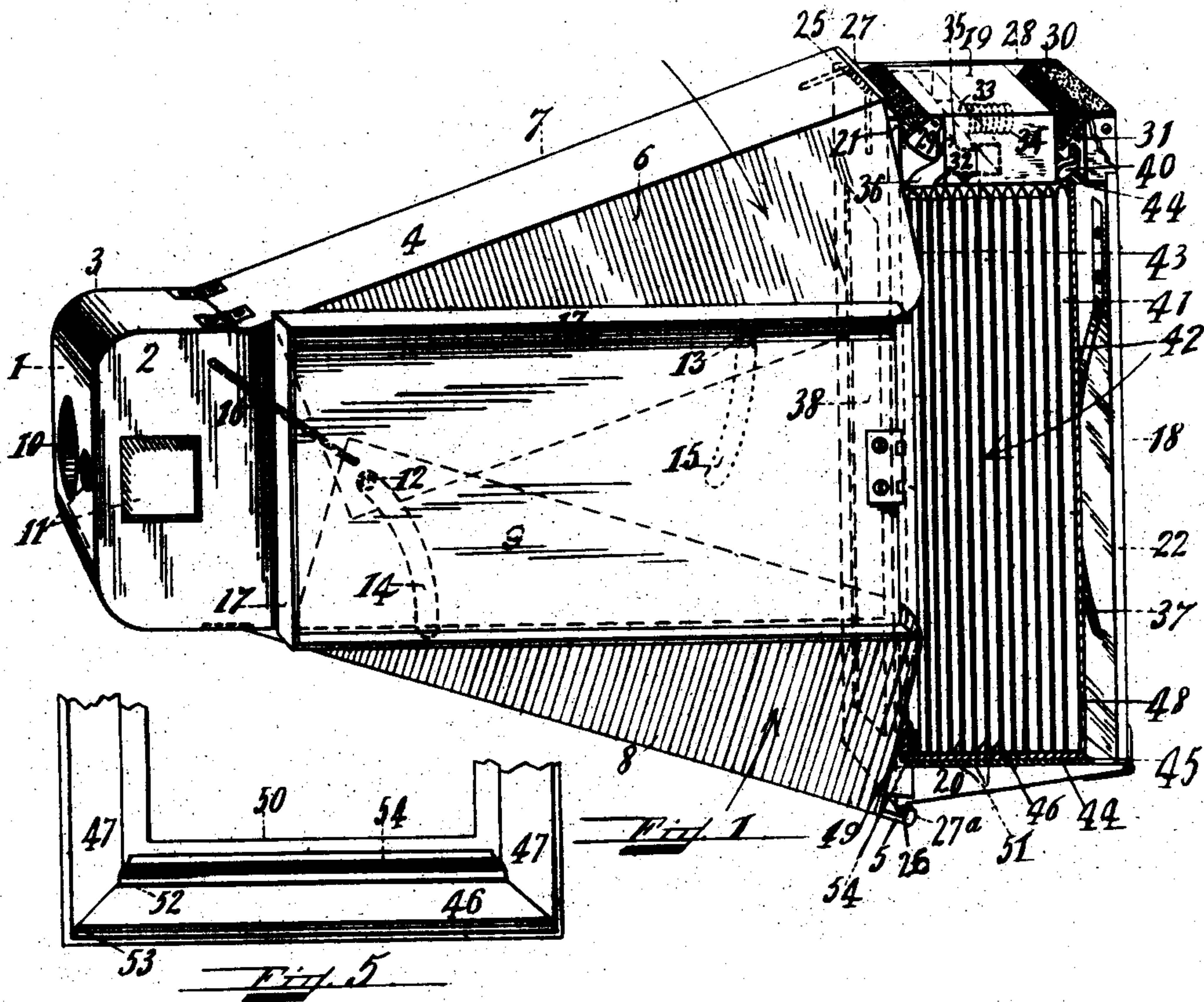
Patented Oct. 21, 1902.

A. C. BUTLER.  
CAMERA.

(Application filed Mar. 15, 1902.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:  
G. H. Langford

Inventor:  
Arthur Cecil Butler  
by N. L. Frothingham,  
his attorney

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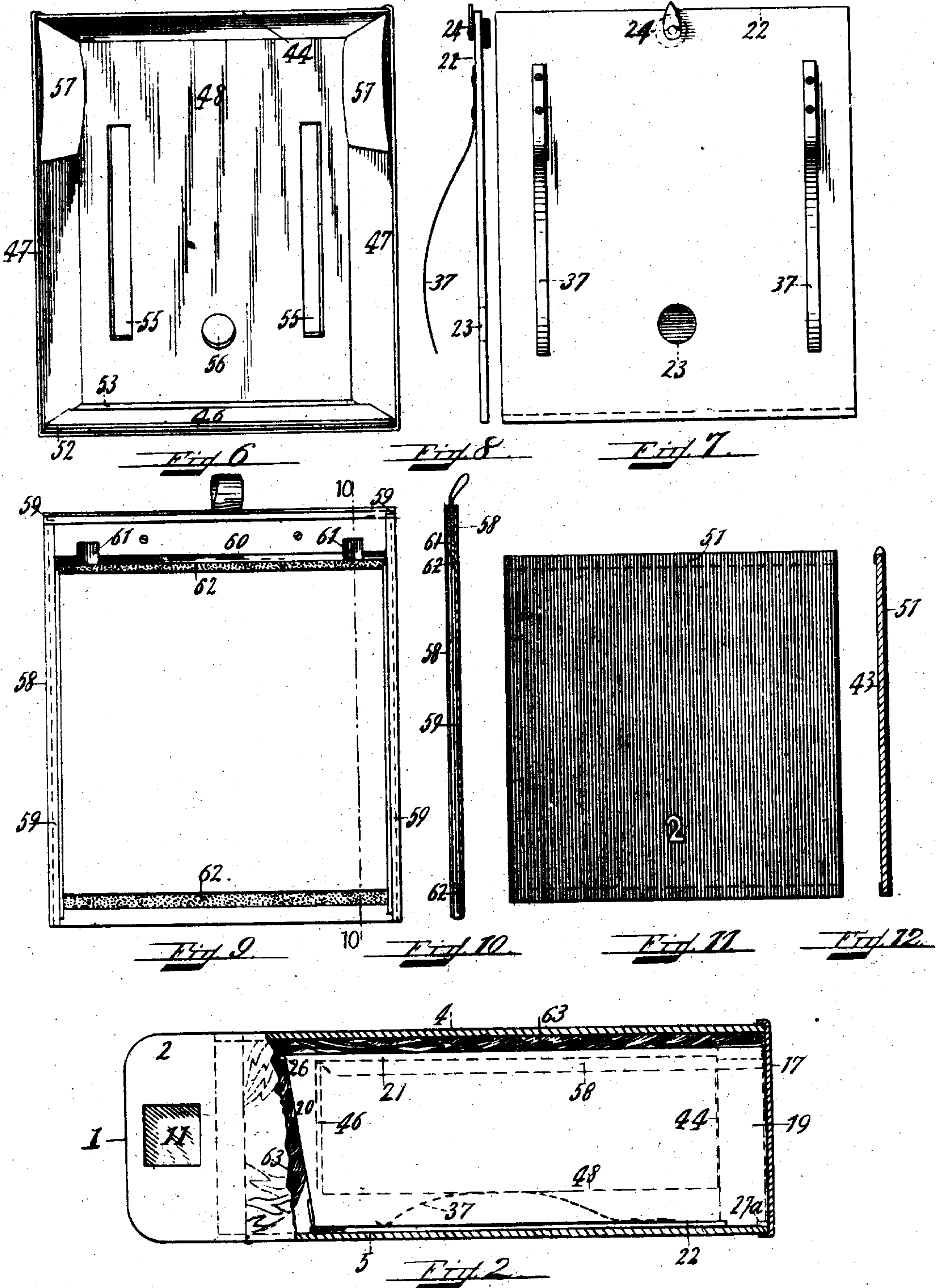
A. C. BUTLER.

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(Application filed Mar. 15, 1902.)

2 Sheets—Sheet 2

(No Model.)



Witnesses:  
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Inventor:  
Arthur Cecil Butler,  
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his attorney.



# UNITED STATES PATENT OFFICE.

ARTHUR CECIL BUTLER, OF WOLLASTON, MASSACHUSETTS.

## CAMERA.

SPECIFICATION forming part of Letters Patent No. 711,891, dated October 21, 1902.

Application filed March 15, 1902. Serial No. 98,355. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR CECIL BUTLER, a subject of the King of Great Britain and Ireland, residing at Wollaston, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Cameras, of which the following is a specification, reference being had therein to the accompanying drawings, which form a part of the said specification.

The invention relates to improvements in cameras, and has for its object to provide a folding pocket-camera which is simple, strong, and durable in its construction and easy to be manipulated, and one in which a magazine plate-holder is included as one of the foldable parts thereof.

The folding pocket-camera which embodies my invention will comfortably carry a dozen plates of at least three and one-fourth inches by three and one-fourth inches or three and one-fourth inches by four and one-fourth inches in size. It is entirely complete in itself and can be used in the field without the use of dark slides or other similar encumbrances, and it is so compact when folded up that it may be readily carried in a coat-pocket of the ordinary size, notwithstanding that the magazine-holder has contained within it a dozen plates of the size above mentioned.

The general construction of the camera is such that there is ample room for a double lens, (not shown,) which may be made to screw out and be focused for short ranges, if required. There is also sufficient room for the view-finder and a drop-shutter (not shown) of different speeds in front or at the back of the lens.

The invention consists, broadly, of a foldable pocket-camera which comprises or includes a magazine plate-holder as one of its foldable parts and which may be operated without the use of dark slides or other similar devices and is complete in itself.

The invention further consists of a supplemental box containing the plates in combination with the said magazine, the said box being especially adapted for use in connection with the said magazine.

The invention further consists of the plate

itself, which is especially adapted for use with the said magazine.

The invention further consists of a plate-transferrer in combination with the said magazine and adapted to transfer a plate from the front of the pack of plates and deposit it in the rear of the said pack one plate at a time.

The invention further consists of the novel features of construction hereinafter set forth and described, and more particularly pointed out in the claims hereto appended.

Referring to the drawings, Figure 1 is a perspective view of the camera unfolded, the side of the magazine and the side and cover of the box containing the plates being removed, the said cover being inserted under the bottom of said box and the dummy plate in the rear of the said box. Fig. 2 is a plan view of the camera closed or folded, the top and the overlapping sides being partially broken away. Fig. 3 is a perspective view of the plate-box looking toward the front and side. Fig. 4 is a perspective view of the said box looking toward the rear and side. Fig. 5 is a perspective view of a portion of the said box with the back removed. Fig. 6 is a perspective view of the said box with the front removed. Fig. 7 is a plan view of the back of the magazine. Fig. 8 is an edge view of the same. Fig. 9 is a perspective view of the plate-transferrer. Fig. 10 is a view of a vertical section of the same, taken on the line 10 10 of Fig. 9. Fig. 11 is a plan view of the plate, and Fig. 12 is a view of a vertical section of the same.

Like numbers refer to like parts throughout the several views.

1 denotes the front portion of the camera, slightly rounded and box-shaped.

2 and 3 denote, respectively, the top and bottom, similar in shape and extending the full length of the camera. The bottom 3 is not shown in the drawings, as it is concealed by the top and intervening parts.

4 and 5 denote the sides hinged to the front, which are similar in construction and box-shaped and provided, respectively, with inwardly-extending portions 6 and 7 and 8 and 9. The inwardly-extending portions 6 and 7



overlap the inwardly-extending portions 8 and 9 when the camera is closed.

The front of the camera is provided with the ordinary lens and shutter, (not shown,) lens-aperture 10, and view-finder 11.

The top, bottom, and front of the camera are preferably made of wood and the sides of aluminium, the inwardly-extending portions of which are preferably made integral with the remaining portion thereof. The outward movement or spread of the sides is limited by means of the pins 12 and 13, located on the part 6 and operating in the slots 14 and 15, respectively, the slot 14 being located in the part 8 and the slot 15 in the under side of the top 2.

16 is a spiral spring, one end of which is fastened to the front 1 on the inside. The other end is fastened to the part 8.

17 is a lid or cover made preferably of aluminium and hinged to the top to form a cover for the back of the camera when closed.

The sides 4 and 5, together with their inwardly-extending portions and the cover, may be covered with any suitable material, such as leather and the like, and form in connection with the front, top, and bottom a box compact in form and admirably adapted to contain the operating parts.

18 is the magazine plate-holder, hinged to the side 4 and substantially in the shape of a box, comprising a top 19, bottom 20, front 21, and back 22, and sides. (Not shown.) The top and bottom of the magazine are preferably made of wood and the front, back, and sides of aluminium. The back 22 is hinged to the bottom and adapted to swing downwardly and provided with an aperture 23, covered with red colored glass or celluloid.

24 is a button provided with a tang operating in a grooved recess in the top of the magazine for keeping the back in a closed position when desired.

25 is a spring secured to the side 4, having one of its ends exerting a continuous pressure against the top of the magazine.

26 is a projection extending along the lower edge of the magazine and adapted to engage a shoulder or ledge 27<sup>a</sup>, extending along the edge of the side 5, thereby limiting the outward movement of the magazine.

27 and 28 are longitudinal slots in the top of the magazine, and 29 and 30 are light-excluding shutters covered with plush or velvet or other suitable material and hinged to the said top and adapted to operate within the said slots 27 and 28, respectively, as hereinafter set forth.

31 is an arched spring extending along the rear of the shutter 30, the force of which spring tends to constantly press the shutter toward the front, and 32 is an arm extending part way across the top of the magazine and working within the same. The rear portion of this arm is in the shape of a pin or projection 33, around which is coiled a compression-spring 34. The forward part of the said arm

is composed of two branches, an upwardly-extending branch 35, which presses directly against the shutter 29, and a downwardly-projecting branch 36. The force of the spring 34 presses the part 35 toward the front, thereby forcing the shutter 29 toward the front, and the part 36 rests upon the top of a portion of the plates 43 43, as indicated in Fig. 1, to prevent them from slipping out of place into the slot 27 if the camera were tilted to such an extent that the plates were turned upside down. The back of the magazine is provided on the inside with flat arched springs 37 37, which are adapted to continually press the pack of plates in the magazine forward toward the exposure-opening 38 in the front of the magazine, as hereinafter set forth.

40 is a barbed spring or catch secured to the rear portion of the top of the magazine and projecting downwardly and resting upon the top of the rear plate of the pack or upon the dummy plate 41, as the case may be, and yet adapted to yield and be pressed backward, as hereinafter stated. There is a similar catch or spring located on the rear portion of the top of the magazine and on a line with the catch 40, but not shown in the drawings. The under side of the top of the magazine located back of the slot 28 is covered with velvet or plush or other suitable material for the purpose of excluding light.

42 denotes the plate-box, made preferably of pasteboard and containing a pack of a dozen plates 43 43 and a dummy plate 41. In Fig. 1 the dummy plate is located at the rear of the pack and in Fig. 3 it is located at the front of the pack and lies close to the front of the box, so that the light is entirely excluded. The plate-box is composed of a removable top 44, provided with a flap or extension 45, gummed on the under side, a bottom 46, sides 47 47, back 48, and front 49, provided with an exposure-opening 50. The plates rest flat against each other in the box, and each one is wrapped in a stiffish dark-colored paper 51 or other like substance, preferably black and impervious to light, which entirely covers the back and overlaps the top and bottom edges of the plate, as shown in Figs. 11 and 12.

52 and 53 are grooves having a width of about one-half that of one of the plates extending along the front and rear, respectively, of the bottom 46 of the said box on the inside, and 54 is a shoulder slightly cut away, curved at its upper part and extending along the front of the bottom of the box on the inside. The shoulder 54 may be termed a "guiding-shoulder" and is for the purpose of allowing the lower end of the plate-transferrer, hereinafter described, to pass by and beyond the upturned edge of the paper 51 without striking the same. The grooves 52 and 53 permit the lower edge of the transferrer to pass by and extend slightly beyond the lower edge of the plate to prevent any possibility of the light reaching the plate.



55 55 denote slots in the back of the box, and 56 is an aperture in the said back registering with the numbers located on the back of the plates and likewise registering with the said covered aperture 23 in the back of the magazine, so that the operator is able to see how many plates have been exposed.

57 57 denote a padding or stuffing made of some suitable springing or yielding material, such as stiffish paper or other like material, extending from the top part way down the sides on the inside. This paper tends to keep the plates in proper position and allows the outside edges of the transferrer to pass between the sides of the box and the side edge of the plate.

58 denotes the plate-transferrer, preferably made of a single sheet of aluminium, smooth and plain on the side which is toward the front of the camera when being operated and provided on the opposite side with vertical grooves 59 59, extending from top to bottom.

60 is a flat piece of wood, having its outside edges inserted in the grooves and forming a portion of the upper part of the transferrer. This part of the transferrer is provided with the recesses 61 61, and it may be made of aluminium, if deemed preferable.

62 62 are strips of plush or velvet or the like material suitably secured to what may be called the "inside" of the transferrer for the purpose of excluding light, and the grooves are preferably lined with plush or velvet or other like material. When not in use, the transferrer is inserted in the magazine through the slot 27, and it can be folded up with the other parts of the camera.

The operation of the device, in so far as it has not been already disclosed, is as follows: The camera being closed, as shown in Fig. 2, when it is desired to use the same the lid or cover 17 is swung back against the top 2, as shown in Fig. 1, and the swinging sides 4 and 5 are spread out or opened like the covers of a book until stopped by the pins 12 and 13, working, respectively, in the slots 14 and 15. The magazine then swings out until the flange on the bottom of the magazine strikes the ledge or shoulder on the side 5, the spring 25 at the top of the magazine causing the outward or rearward movement of the said magazine. The front of the magazine is thus brought to a vertical position. The plate transferrer or extractor is then pulled out and the back 22 of the magazine swung down sufficiently to permit the insertion of the box of plates into the magazine. The said box is then pushed forward in the magazine until the front of the box rests against the front of the magazine. The removable lid or cover 44 of the box is then pulled out and inserted between the bottom of the box and the bottom of the magazine. The back of the magazine is then closed and fastened. The dummy plate in front of the first plate of the pack is then extracted by means of the plate-transferrer and transferred to the rear of the pack

of plates in the following manner: The transferrer is inserted in the forward slot in the top of the magazine and pressed downwardly between the front of the box and the first plate, thus forcing the shutter operating in said slot backward and causing the grooves of the edge of the transferrer to engage with or envelop the sides of the dummy. The transferrer is pressed downwardly until the top edge of the dummy strikes the horizontal piece of wood forming a ledge or shoulder in the upper part of the transferrer. The transferrer is then pulled out, drawing the dummy with it by means of the frictional contact between the edges of the sides of the dummy and the inner surfaces of the grooves in the extractor, the plush or velvet in the inside of said grooves increasing the frictional contact. The extractor, with the dummy, is then forced downwardly through the slot in the rear of the top of the magazine, the shutter being forced back by such movement until the barbed springs or catches enter the recesses and overlap the top edges of the dummy. The camera is now ready for use. When the first plate has been exposed, the transferrer is withdrawn, but without the dummy. The barbed springs or catch impinging upon or overlapping the top of the dummy hold it fast and it is left at the rear of the pack. The transferrer is then inserted downwardly in the forward slot of the top of the magazine and the exposed plate withdrawn in the same manner the dummy was withdrawn, only the back of the plate covered with the paper being exposed. The paper on the back of the plate may then be written on and any desired memoranda or notes placed thereon indicating the length of exposure, subject, &c. The exposed plate is then placed at the rear of the dummy, and so on until all the plates have been used. The spring on the back of the magazine operates in the slots in the back of the plate-box and presses continually and automatically forces the pack of plates and dummy toward the front of the magazine. The transferrer is then withdrawn, the back of the magazine opened, and the box containing the plates and dummy withdrawn, together with the cover of the box, which has previously been inserted into its place in the top of the box. The gum on the under side of the flap on the cover is moistened and stuck down on the back of the box and the box put away or left in the magazine until wanted. If it is desired to use the camera still further, a second box of plates similar to the first box is inserted into the magazine and operated upon as before. By means of the above construction, as will readily be seen, it is not necessary to use any dark slide or other similar incumbrance or any dark room to insert the plates into the magazine or transfer them from the magazine after they have been exposed and that any number of pictures can be taken in the field even after the first pack of plates has been exhausted, provided, of course, other boxes of



plates are on hand. If it is desired to use the camera further, the back of the magazine is closed and the magazine pushed toward the front of the camera in the direction of the arrow until it is parallel with the side 4. The sides 4 and 5 are then pressed toward each other in the direction of the arrows until they are parallel with each other, the spring aiding in drawing the side 5 toward the side 4. The lid or cover is then closed over the rear end of the camera and fastened by any suitable means. It is to be observed that the springs on the back of the magazine operating in the slots in the back of the plate-box not only force the plates continually toward the front, but create a space between the last plate of the pack and the back of the plate-box for the transferrer to enter or slide into when depositing a plate at the rear of the box. This is apparent, because the stiff paper on the plates forms a kind of spring and, together with the plates, would fill the box entirely were it not for the action of the springs on the back of the magazine. This spring action of the paper excludes the light from the plates when the box is in the daylight by pressing the dummy against the front and the rear plate against the back, thus showing the apertures at the front and rear of the box. The box of plates as it comes from the manufacturer is inclosed in an outer casing (not shown) for protection. This outer casing is made, preferably, of pasteboard and is similar to the ordinary cover in which plates are usually packed. It is, however, removed before the box containing the plates is inserted in the magazine. This outer casing or a similar casing of a new box of plates may be utilized again as a cover for the box of plates when removed from the magazine. The camera may be used without any bellows, because it is intended that its various parts will be so perfectly fitted together and assembled that it may be dispensed with. The ordinary bellows, however, has been shown in the drawings, as at 63 63, attached to the inside of the camera and the front of the magazine.

What I claim, and desire to secure by Letters Patent, is—

1. A folding camera, comprising a front provided with a lens, a top and bottom rigidly secured to the said front, swinging box-shaped sides, means for limiting the spread of the said sides, a foldable swinging magazine plate-holder, means for retaining the said magazine in a vertical position, and a plate-transferrer for withdrawing a plate in the front of the said magazine and depositing it at the rear of the other plates in the said magazine, one plate at a time.

2. In a camera the combination of a main magazine provided with means whereby a plurality of plates may be successively exposed without the use of individual dark slides, a removable supplemental magazine adapted to contain a plurality of plates provided individually with a backing impervious to light,

means whereby said plates may be successively transferred from the front to the rear of said supplemental magazine in conjunction with said first-mentioned means, and means whereby said supplemental magazine may be placed in and withdrawn from said main magazine.

3. In a camera, the combination of a main magazine adapted to receive a removable supplemental magazine containing a plurality of plates, said supplemental magazine being adapted to be opened at one edge and said main magazine being provided with openings adapted to aline with the forward and the rear portion of said supplemental magazine, movable light-proof shutters closing said openings respectively, a transferrer whereby the plates may be successively moved through said openings from the front to the rear of said supplemental magazine, and means whereby said supplemental magazine may be placed in and withdrawn from said main magazine.

4. In a camera, the combination of a main magazine adapted to receive a removable supplemental magazine containing a plurality of plates, said supplemental magazine being adapted to be opened at one edge, and said main magazine being provided with openings adapted to aline with the forward and the rear portion of said supplemental magazine, movable light-proof shutters closing said openings respectively, a transferrer whereby said plates may be successively moved through said openings from the front to the rear of said supplemental magazine, means adjacent to said forward opening and adapted to be actuated by said shutters whereby the plates in alinement therewith will normally be held within said supplemental magazine, and means whereby said supplemental magazine may be placed in and withdrawn from said main magazine.

5. In a camera, the combination of a main magazine adapted to receive a removable supplemental magazine containing a plurality of plates, said supplemental magazine being adapted to be opened at one edge, and said main magazine being provided with openings adapted to aline with the forward and the rear portion of said supplemental magazine, movable light-proof shutters closing said openings respectively, a transferrer whereby the plates may be successively moved through said openings from the front to the rear of said supplemental magazine, means adjacent to said forward openings and adapted to be actuated by said shutter whereby the plates in alinement therewith will be normally held within said supplemental magazine, means whereby the plate will be held within the rear of said supplemental magazine to permit the withdrawal of the said transferrer empty, and means whereby said supplemental magazine may be placed in and withdrawn from said main magazine.

6. In a camera, the combination of a main magazine adapted to receive a removable sup-



plemental magazine containing a plurality of plates, said supplemental magazine being adapted to be opened at one edge, and said main magazine being provided with openings adapted to aline with the forward and the rear portion of said supplemental magazine, movable light-proof shutters closing said openings respectively, a transferrer whereby the plates may be successively moved through said openings from the front to the rear of said supplemental magazine, a spring-controlled arm provided with a projection adjacent to said forward opening and adapted to be actuated by said shutter whereby the plates in alinement therewith will be normally held within said supplemental magazine, a spring-catch whereby the plate will be held within the rear of said supplemental magazine to permit the withdrawal of said transferrer empty, and means whereby said supplemental magazine may be placed in and withdrawn from said main magazine.

7. In a camera, the combination of a main magazine adapted to receive a removable supplemental magazine containing a plurality of plates, said supplemental magazine being adapted to be opened at one edge, and said main magazine being provided with openings adapted to aline with the forward and the rear portion of said supplemental magazine, movable light-proof shutters closing said openings respectively, a transferrer whereby the plates may be successively moved through said openings from the front to the rear of said supplemental magazine, and a removable back whereby said supplemental magazine may be placed in and removed from said main magazine.

8. In a camera, the combination of a main magazine adapted to receive a removable supplemental magazine containing a plurality of plates, said supplemental magazine being adapted to be opened at one side and having an exposure-opening and openings in the rear thereof, and said main magazine being provided with openings adapted to aline with the forward and the rear portions of said supplemental magazine, movable light-proof shutters closing said openings respectively, a transferrer whereby the plates may be successively moved through said openings from the front to the rear of said supplemental magazine, and a removable back provided with springs adapted to pass through the rear openings in said supplemental magazine whereby said supplemental magazine may be placed in and removed from said main magazine and the plates contained therein may be subjected to a constant pressure to force them toward the exposure-opening thereof.

9. In a camera, a supplemental magazine comprising a box provided with an exposure-opening and an open edge, said box being adapted to contain a plurality of plates individually provided with a backing impervious to light, and a slide for closing said exposure-opening.

10. In a camera, a supplemental magazine comprising a box provided with an exposure-opening and an open edge, said box being adapted to receive a plurality of plates individually inclosed except on the sensitized face by a flexible, removable cover impervious to light, said cover inclosing the edges of said plate, and a slide for closing said exposure-opening.

11. In a camera, a supplemental magazine comprising a box provided with an exposure-opening and an open edge, said box being adapted to receive a plurality of plates individually inclosed except on the sensitized face by a flexible, removable cover impervious to light, said cover inclosing the edges of said plate, a slide for closing said exposure-opening, and a removable cap for closing said edge.

12. In a camera, a supplemental magazine comprising a box provided with an exposure-opening, openings directly opposite said exposure-opening and an open edge, said box being adapted to receive a plurality of plates individually inclosed except on the sensitized face by a flexible, removable cover impervious to light, said cover inclosing the edges of said plate, a slide for closing said exposure-opening, and a removable cover for closing said edge.

13. In a camera, a supplemental magazine comprising a box provided with an exposure-opening, openings directly opposite said exposure-opening and an open edge, said box being adapted to receive a plurality of plates individually inclosed except on the sensitized face by a flexible, removable cover impervious to light, said cover inclosing the edges of said plate, a slide for closing said exposure-opening, a removable cover for closing said edge, and resilient side strips adapted to center the plates contained therein.

14. In a camera, a supplemental magazine comprising a box provided with an exposure-opening and an open edge, said box being adapted to receive a plurality of plates individually inclosed except on the sensitized face by a flexible, removable cover impervious to light, said cover inclosing the edges of said plate, and a slide for closing said exposure-opening, in combination with a main magazine adapted to receive said supplemental magazine and provided with means whereby said slide and said plates therein contained may be successively removed from the front to the rear thereof, and a transferrer comprising a slab adapted to cover the sensitized face of said plate, grooved side extensions adapted to inclose the opposite edges of the slide or plate, and means whereby light will be excluded from the plate while in said transferrer.

15. In a camera, a supplemental magazine comprising a box provided with an exposure-opening and an open edge, said box being adapted to receive a plurality of plates individually inclosed except on the sensitized face by a flexible, removable cover impervious to



light, said cover inclosing the edges of said plate, a slide for closing said exposure-opening, and a guiding-shoulder 54 in combination with a main magazine adapted to receive said  
5 supplemental magazine and provided with means whereby said slide and said plates therein contained may be successively removed from the front to the rear thereof, and  
10 a transferrer comprising a slab adapted to cover the sensitized face of said plate, grooved side extensions adapted to inclose opposite edges of the slide or plates, and means whereby light will be excluded from the plate while  
15 in said transferrer.  
16. In a camera, a plate-transferrer comprising a slab, vertical grooved extensions on op-

posite sides thereof, a cross-bar 60 extending between said extensions, strips 62 and a flexible lining to said grooves whereby light will be excluded from the plate while in said transferrer, and recesses in said cross-bar whereby a plate therein contained may be engaged to permit the withdrawal of the transferrer, substantially as described. 20

In witness whereof I have hereunto set my hand, this 11th day of March, 1902, in the presence of two witnesses. 25

ARTHUR CECIL BUTLER.

Witnesses:

N. L. FROTHINGHAM,  
A. A. ASHMAN.