

R. C. BECKER.
MAGAZINE CAMERA.

(Application filed Apr. 27, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

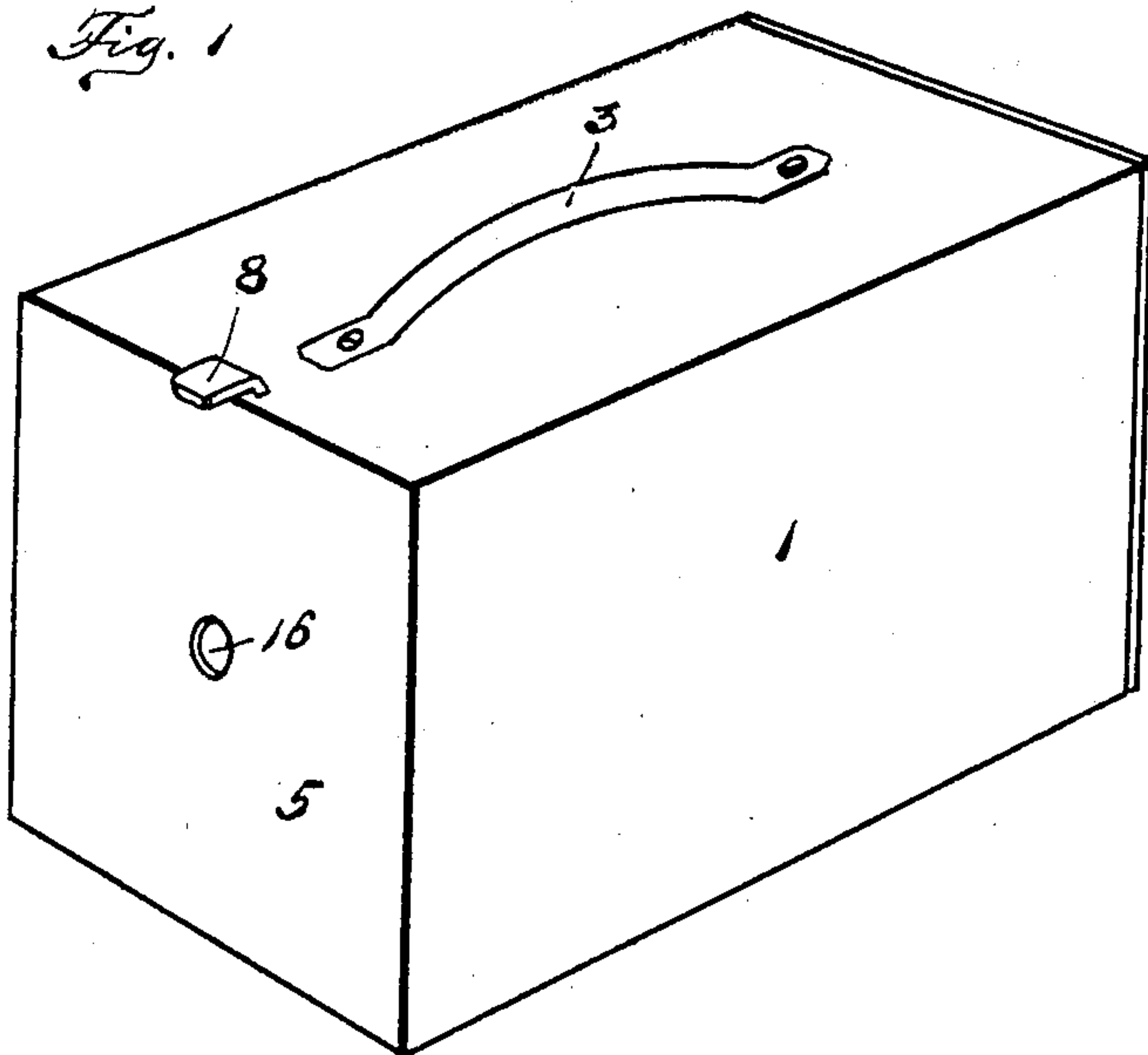


Fig. 3.

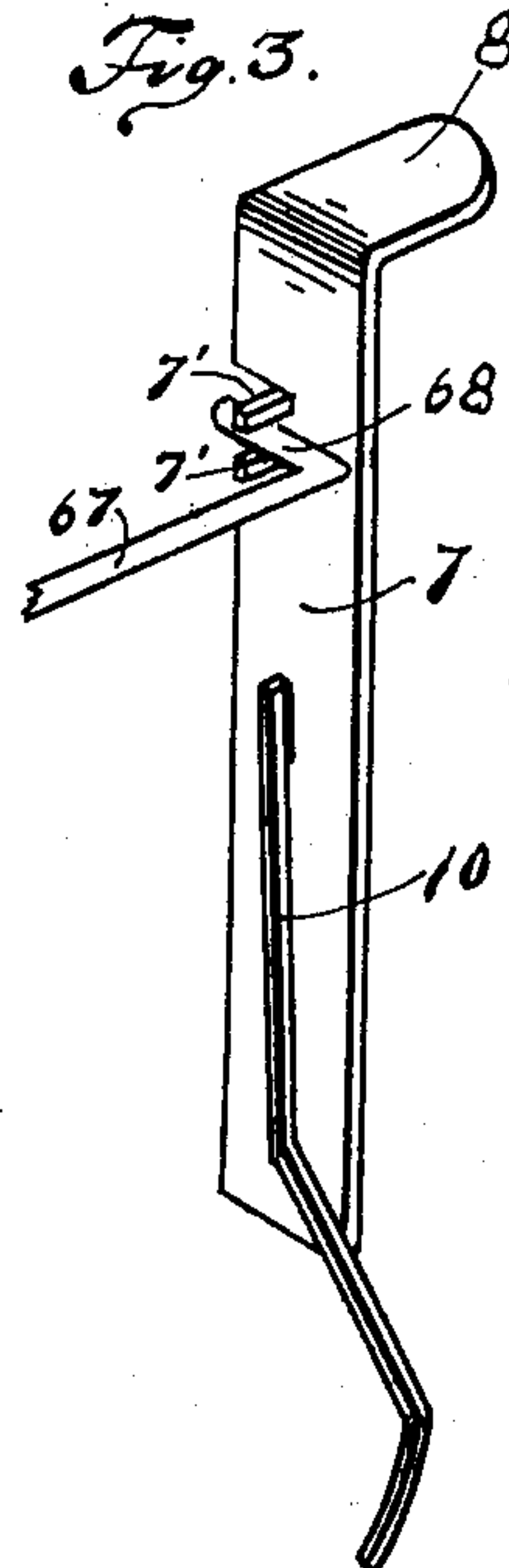


Fig. 2.

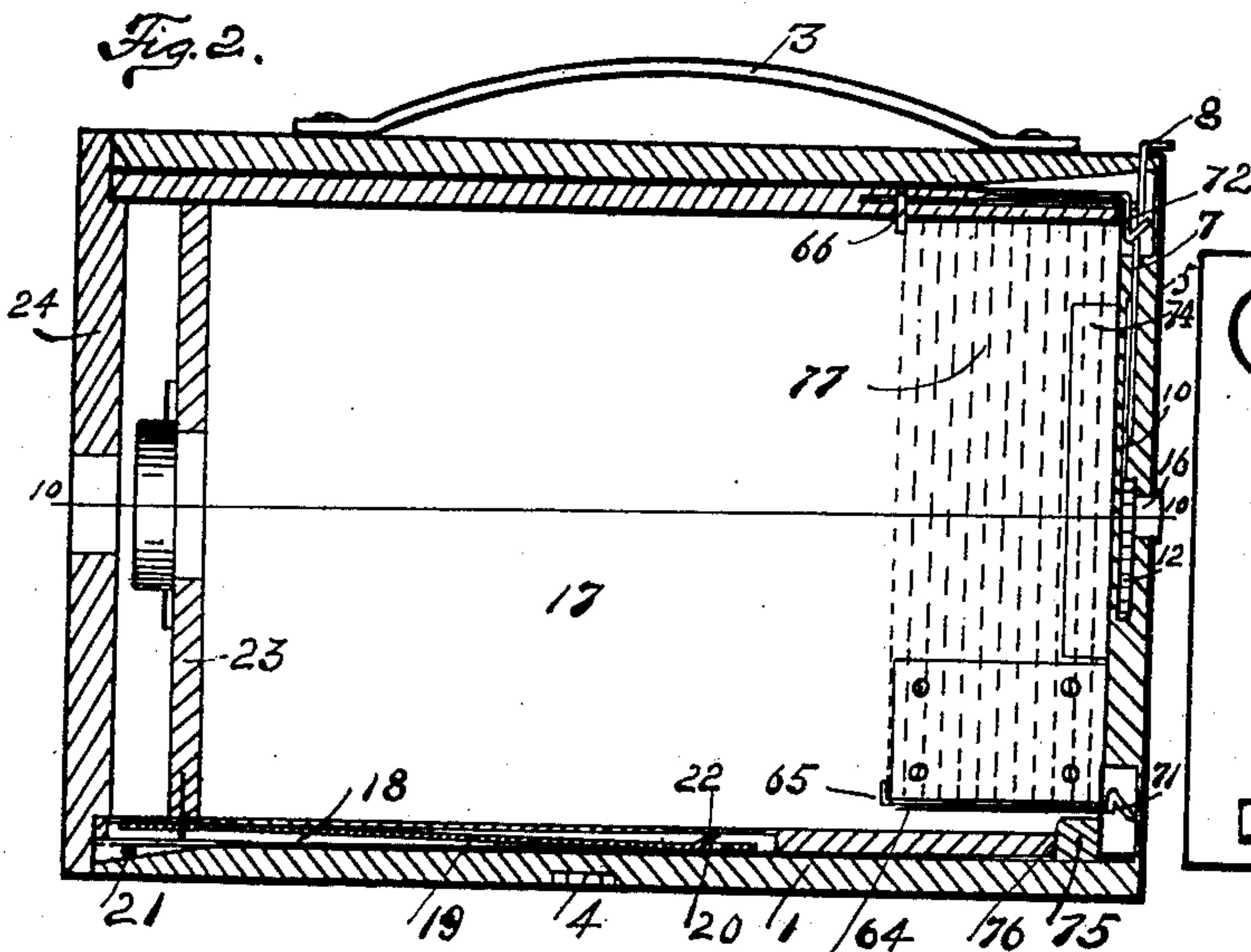
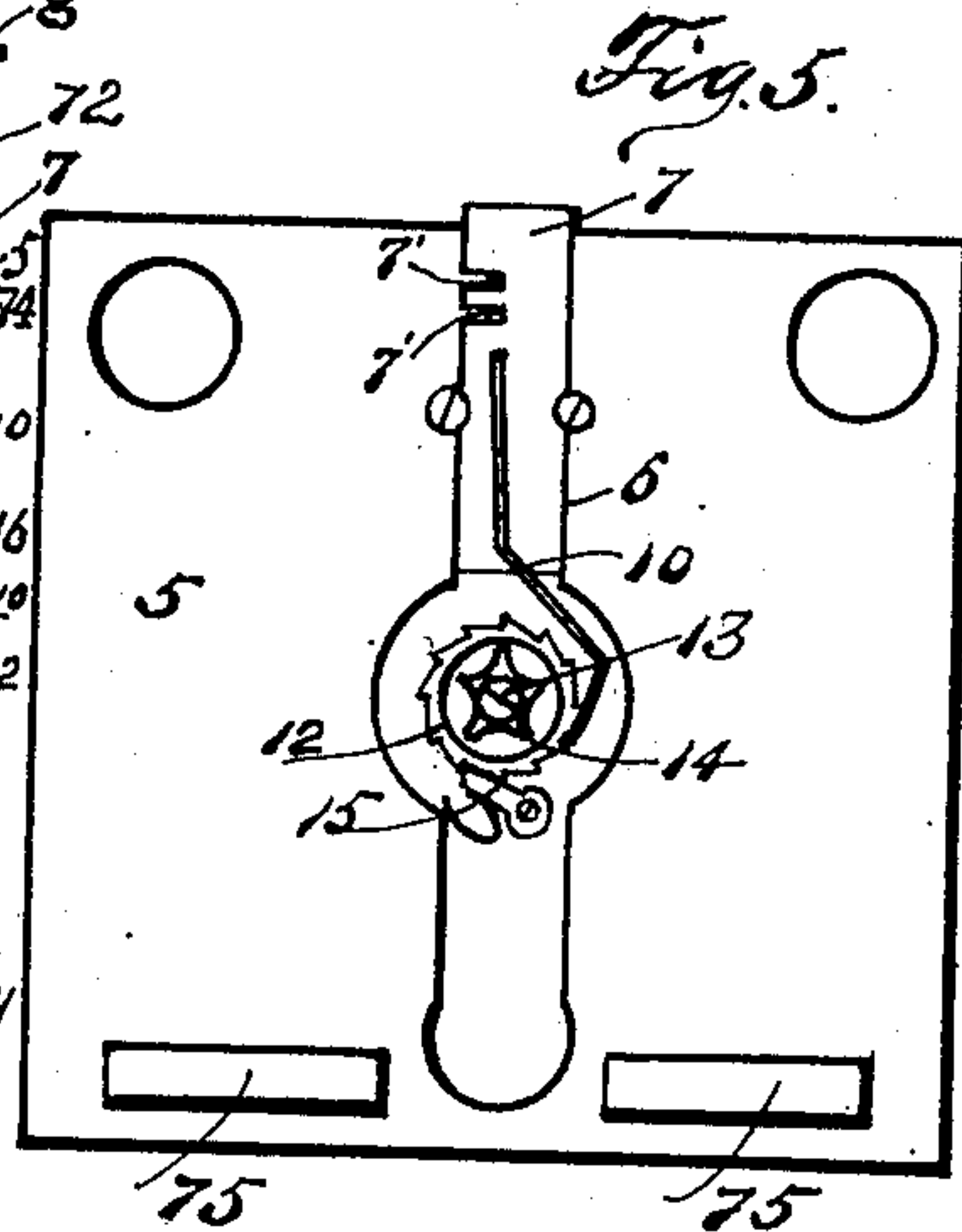


Fig. 5.



Witnesses

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2 Sheets—Sheet 2.

(No Model.) *Fig. 4.*

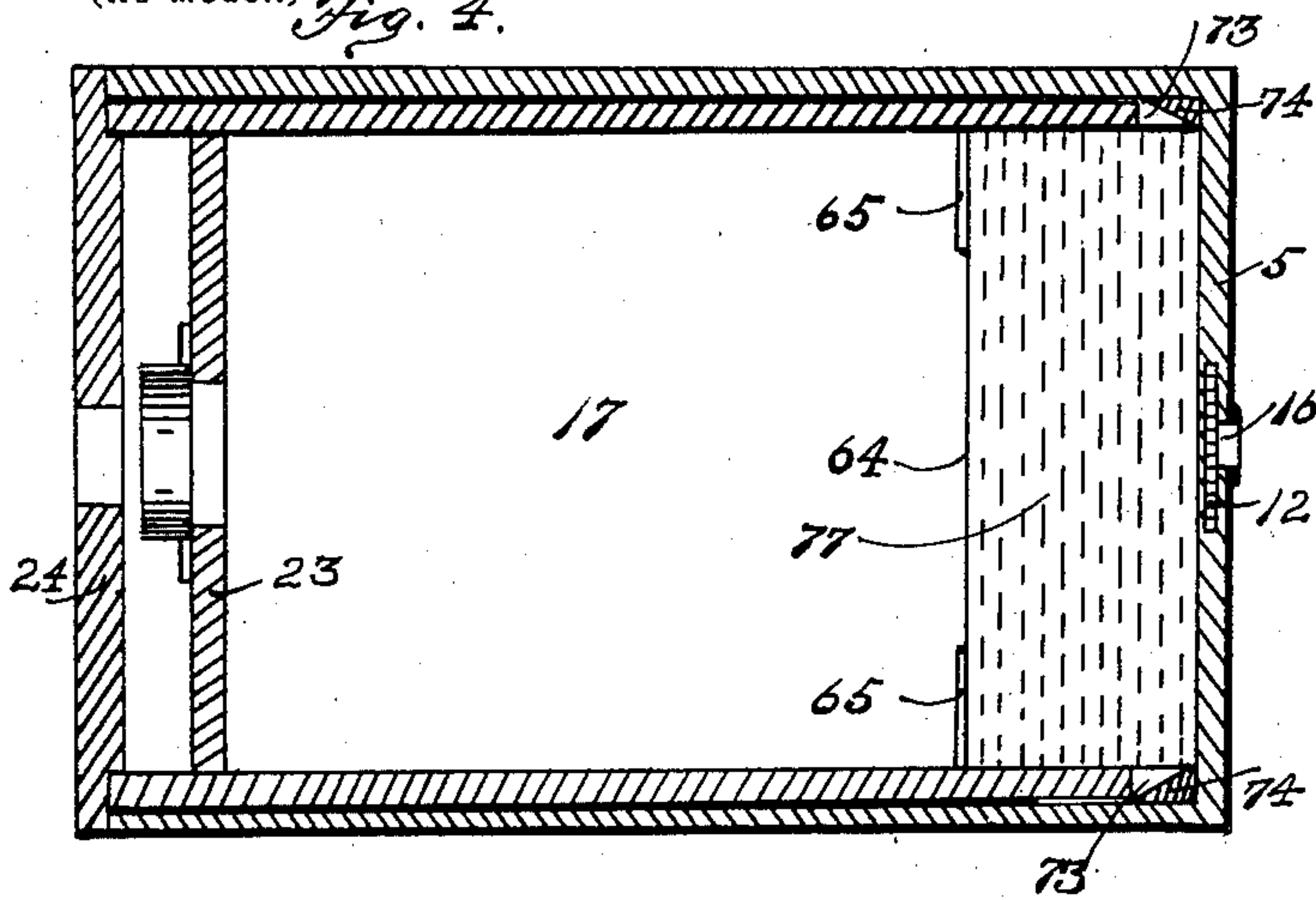


Fig. 11.

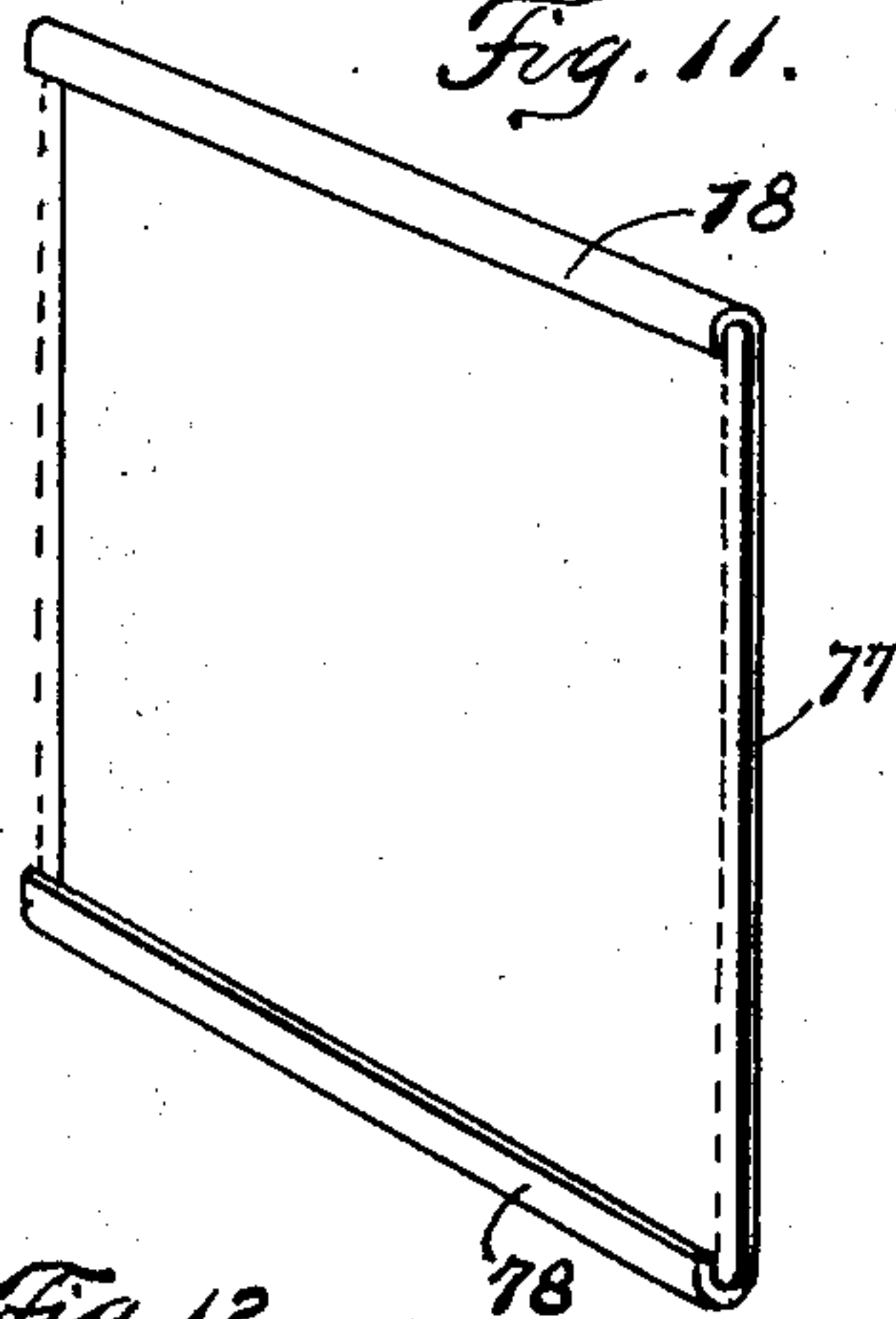


Fig. 12.

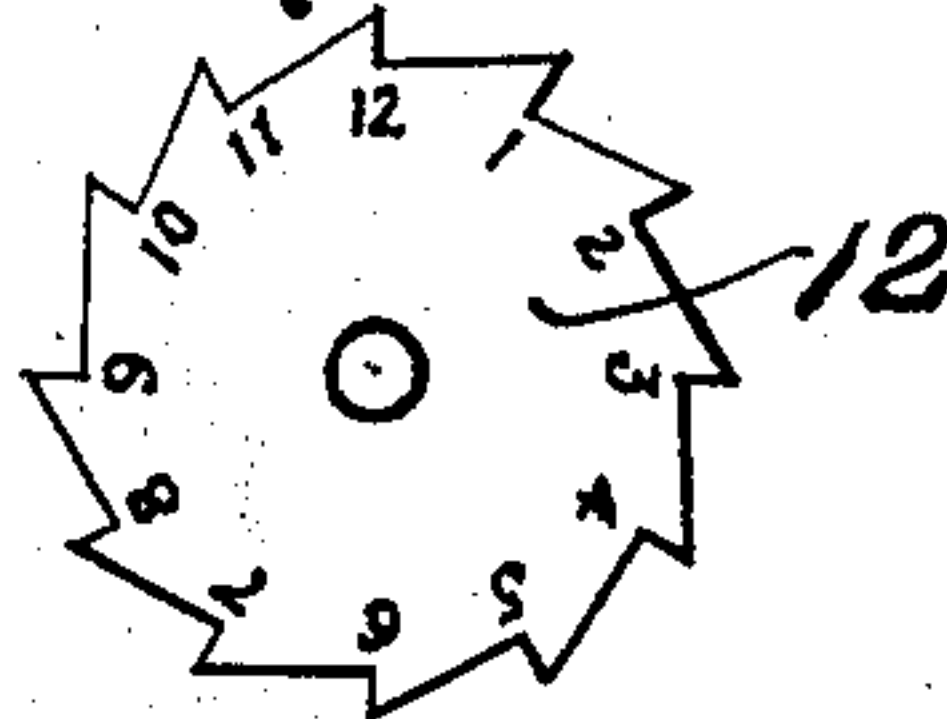


Fig. 10.

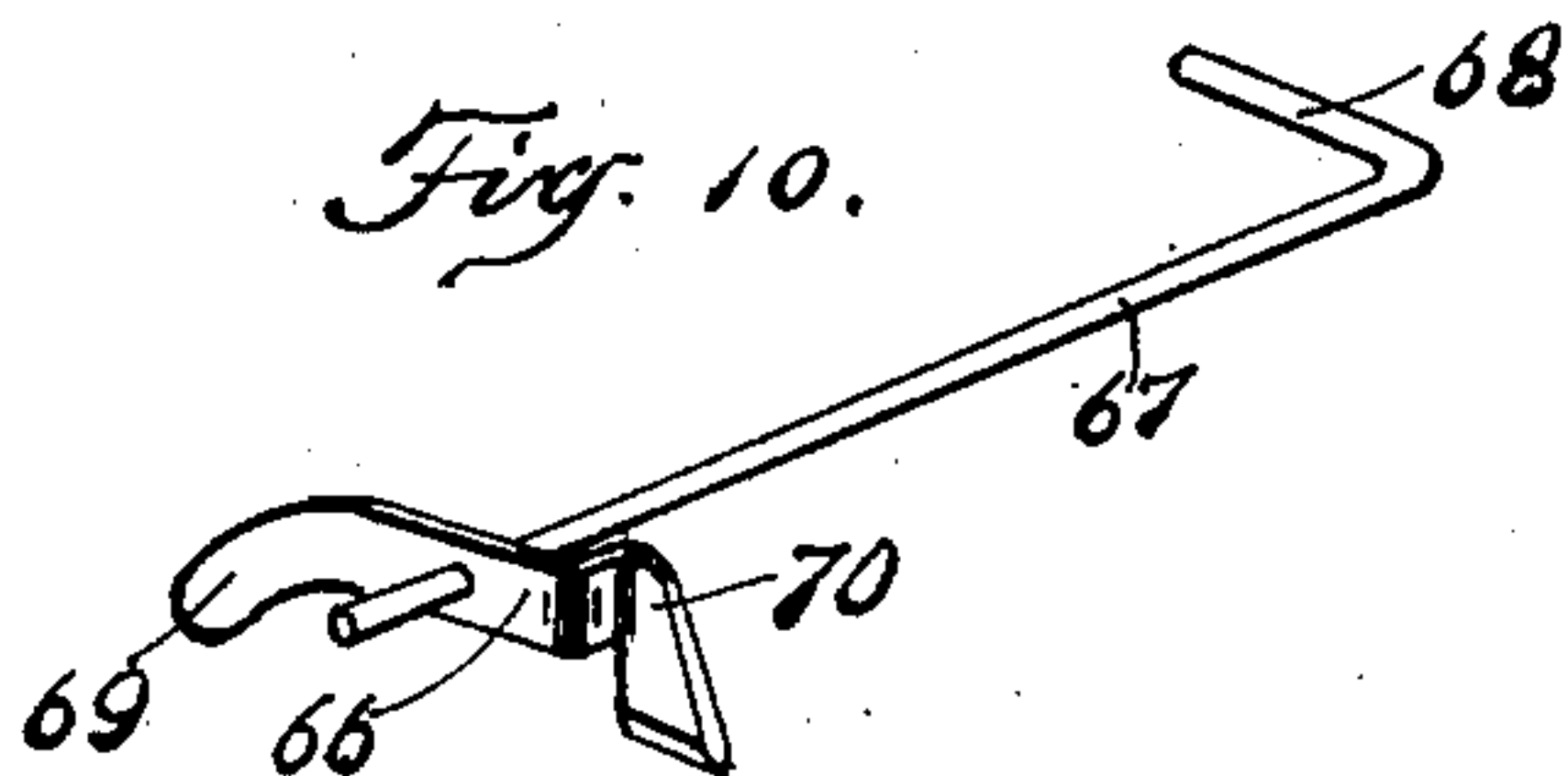


Fig. 6.

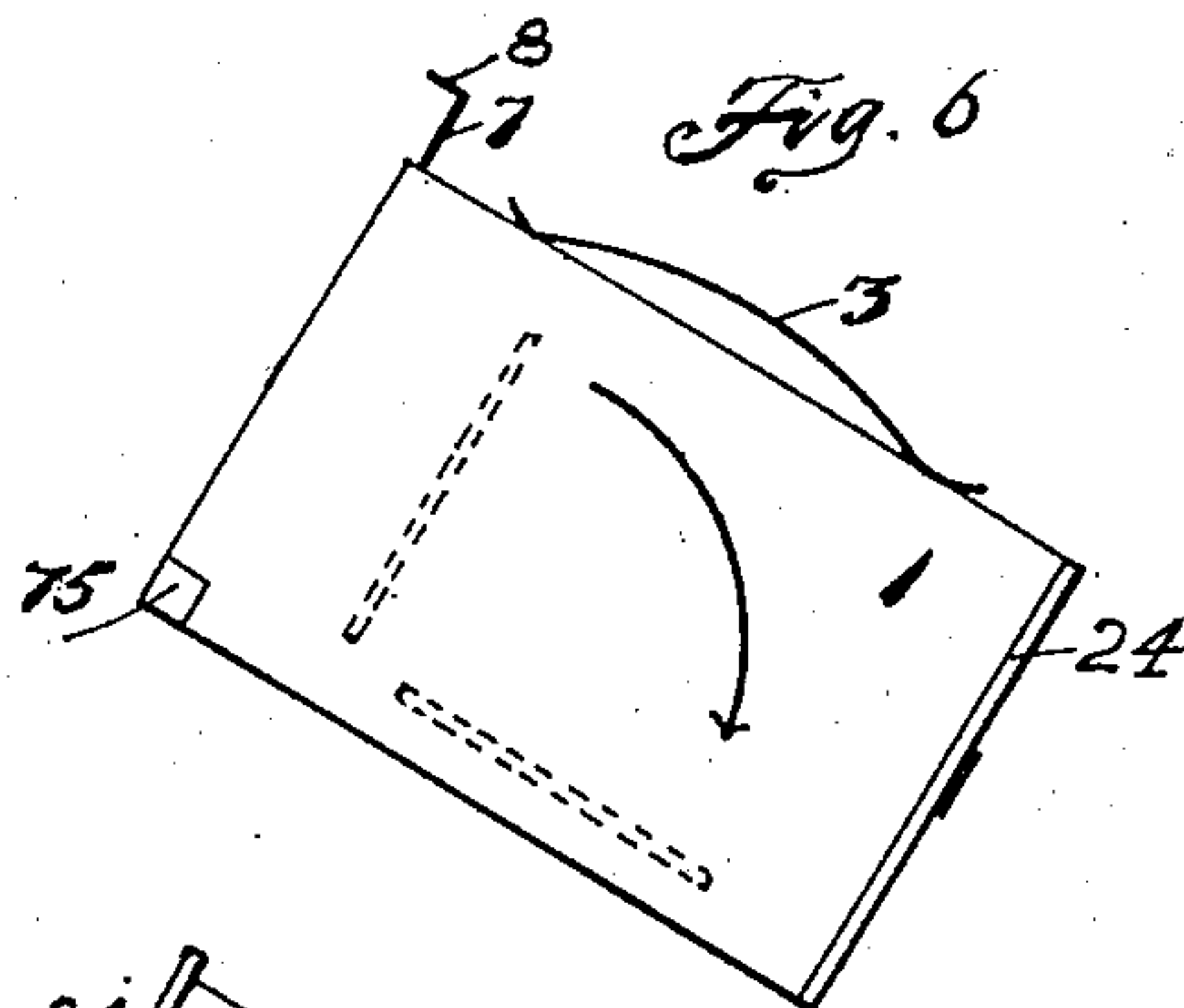


Fig. 7.

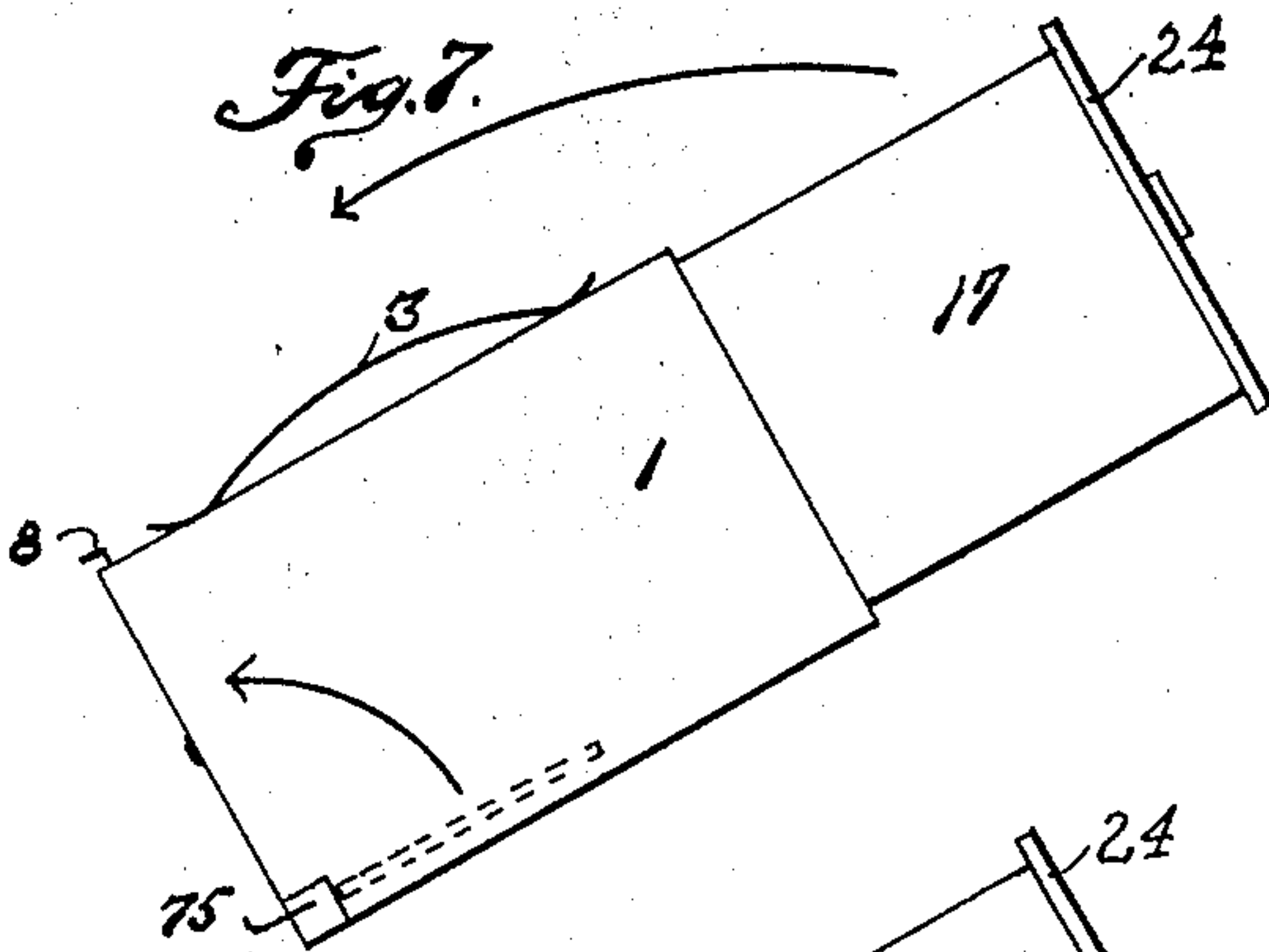


Fig. 8.

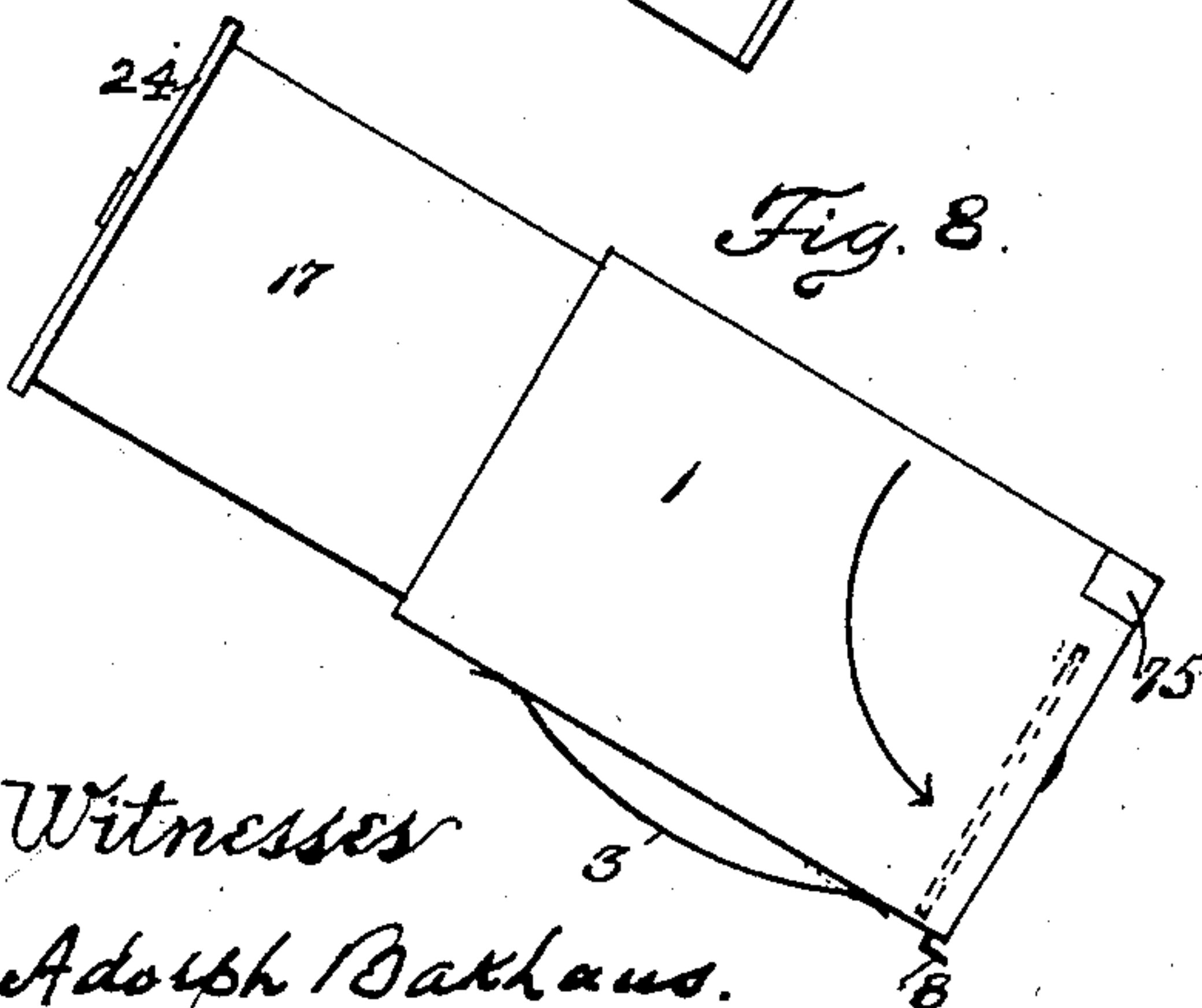
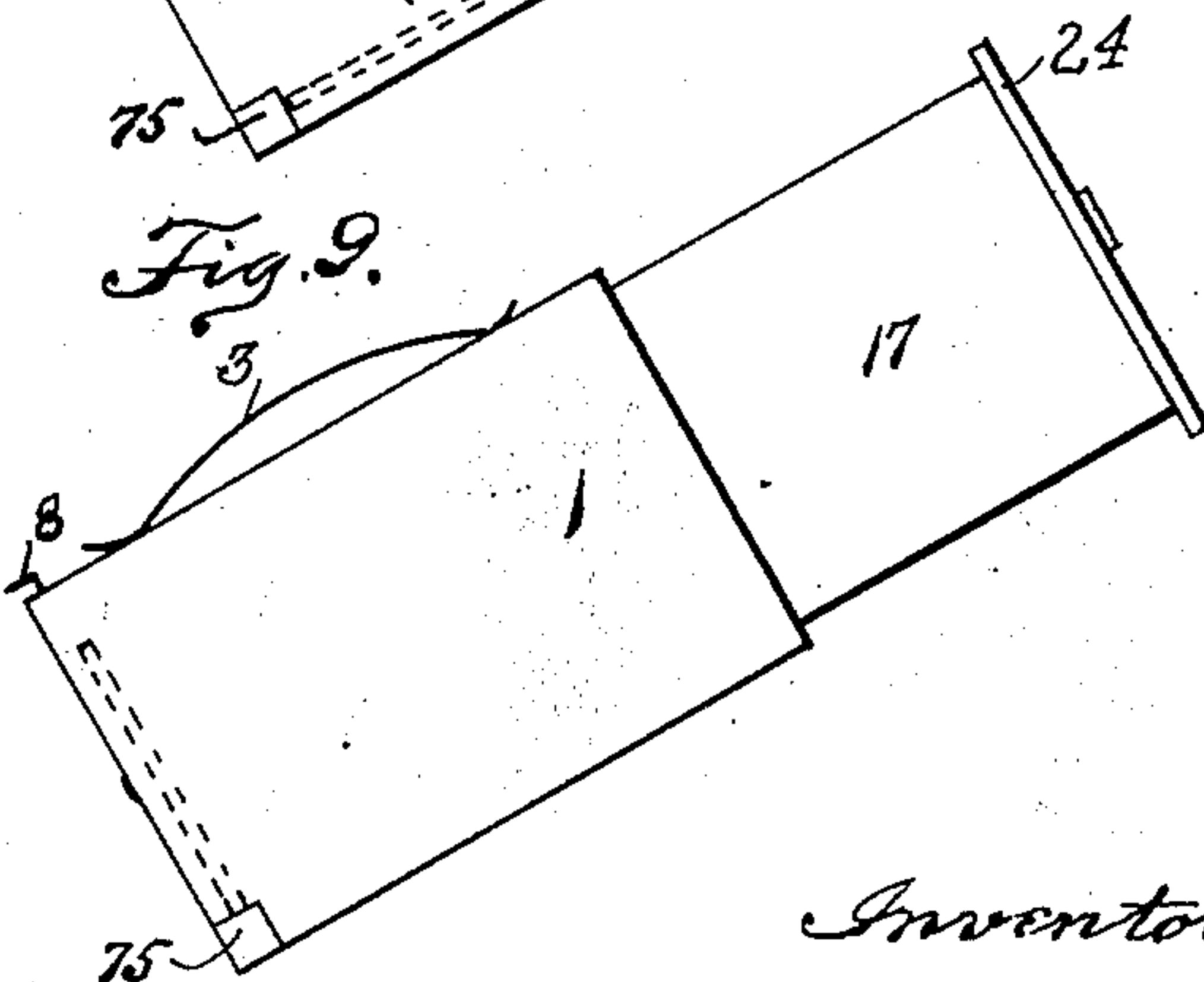


Fig. 9.



Witnesses

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UNITED STATES PATENT OFFICE.

RUDOLPH CHAS. BECKER, OF SPRINGFIELD, OHIO.

MAGAZINE-CAMERA.

SPECIFICATION forming part of Letters Patent No. 652,502, dated June 26, 1900.

Application filed April 27, 1899. Serial No. 714,769. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH CHAS. BECKER, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Magazine-Cameras; and I do 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.

My invention relates to hand-cameras of the magazine type; and the object is to provide a simple, inexpensive, and convenient camera of this character.

To this end the invention consists in the construction, combination, and arrangement of the several parts of the device, as will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings the same reference characters indicate the same parts of the invention.

Figure 1 is a rear perspective view of my improved camera. Fig. 2 is a central longitudinal section. Fig. 3 is an enlarged detail view of the separable connection between the slide 7 and the rear end of the rock-shaft 67. Fig. 4 is a horizontal section on the line 10 10 of Fig. 2. Fig. 5 is a front elevation of the inside face of the back of the camera-box. Fig. 6 shows the first position of the camera in the act of changing an exposed plate. Fig. 7 shows the second position, and Fig. 8 the third position. Fig. 9 is the fourth and last position. Fig. 10 is a detail perspective view of the plate-releasing lever. Fig. 11 is a similar view of one of the plate-carriers with the sensitive plate shown in dotted lines. Fig. 12 is a detail view of the ratchet-wheel indicator.

1 denotes the camera-box, which is closed on all sides except the front, which is left open to receive the magazine 2. The camera-box is provided with a strap handle 3 and a socket-nut 4 to secure it to a tripod when desired.

5 denotes the back of the camera-box, and its inner face is formed with a vertical groove 6, in which is mounted a reciprocating plate 7, the upper end of which extends through the top of the box and terminates in a thumb-clip 8, by means of which the slide is manipu-

lated. The inner face of this slide 7 carries a spring-pawl 10, which engages a ratchet-wheel 12, journaled on a screw-stud 13 and provided with a star-shaped friction spring-washer 14, and 15 denotes the usual spring-actuated retaining-pawl for preventing the reverse movement of the ratchet-wheel. Of course it will be understood that the movement of the slide is limited to one tooth of the ratchet-wheel, and the inner face of said wheel is provided with a series of numbers corresponding to the number of teeth on the ratchet-wheel and also to the number of plate-carriers which the magazine is capable of holding, and 16 denotes the visual orifice in the back of the box, through which these numbers are consecutively presented to view.

17 represents the magazine, and it is of the same general shape as the camera-box, in which it snugly slides. The bottom of the magazine is provided with a longitudinal recess 18, in which is fixed a retaining-spring 19, the free end of which is formed with an orifice 20 to engage the stud-pin 21, fixed in its path in the bottom of the camera-box, and the metal which is punched or stamped up from this orifice 20 forms a diagonal tongue 22, which slides over the stud-pin when the magazine is pushed back into the box, and when it is drawn out in the act of changing a plate the orifice so encompasses the stud and prevents the magazine being accidentally pulled out too far, while to remove the magazine entirely (which of course must be done in the dark room) the spring 19 is pressed inwardly by hand, so as to clear the stud, and thus permit the magazine to be removed from the box when desired.

23 denotes the lens-board, which is recessed in the front of the magazine, parallel with and in the rear of the front board 24.

Referring now to the magazine, 64 denotes a bridge arranged parallel with the bottom thereof and raised a sufficient distance above it to permit the passage of a plate-carrier, and the forward edge of said bridge is provided with two vertical lugs 65 65, which form limit-stops for the lower edge of the plate-carrier containing a plate in "focus," and therefore in position for exposure. Immediately above these lugs and in the top of the magazine is a releasing-lever 66, extending transversely

across the path of the upper edge of the forward carrier. This lever 66 is fixed on the forward end of a longitudinal rock-shaft 67, journaled in the top of the magazine, and its rear end terminates in a lateral crank-arm 68, the free end of which extends between two ears 7' 7', formed on the inner face of the slide 7, carried by the carrier-box, and as the slide is raised and lowered or pulled out and pushed in again an oscillating movement is imparted to the lever 66. One arm of this lever 66 terminates in a curved finger 69 and the opposite arm in a right-angular finger 70, the end of which is beveled to a knife-edge and lies in a plane parallel with and in the rear of the finger 69 and removed from it a distance corresponding to the thickness of a plate-carrier, the arrangement being such that when the magazine is loaded the upper edge of the foremost carrier when in position for exposure will rest against the curved finger 69, the finger 70 being raised out of the path of the carrier. After the plate is exposed and it is desired to replace it with the next unexposed plate which lies immediately behind it the shaft 67 is turned a short distance on its axis, (which is done in the act of drawing the slide 7 outwardly,) thereby reversing the position of the lever 66 and causing its beveled finger 70 to be inserted behind the first carrier and in front of the second carrier, and as this is being done the finger 69 is raised above the edge of the foremost carrier, and the camera being tilted forward the carrier falls with the plate face downward on the bottom of the magazine, for a purpose to be hereinafter more fully explained, and the next succeeding plate takes its front place in the magazine. Upon a reverse movement of the slide 7 the finger 69 is again projected in front of the foremost carrier and the finger 70 raised above it, in which position the plate is ready for exposure. To the bottom face of the bridge 64 is fixed a spring-clip 71, and corresponding clips 72 72 are fixed to the top of the magazine.

73 73 denote recesses formed in the rear edges of the side walls of the magazine to receive the beveled-face centering-blocks 74 74, fixed in the inside of the vertical corners of the back of the camera-box, and 75 75 denote gage-blocks fixed in the bottom corner of the box and which project into a corresponding recess 76 in the rear edge of the bottom of the magazine.

77 77 denote the plate carriers or holders, one of which is shown in detail in Fig. 11, and each holder consists of a thin metal plate, (preferably aluminium on account of its lightness,) having a curved flange 78 formed on its upper and lower edges to receive the sensitive plate, which is slipped in and removed from the carrier or holder from the side.

To load the camera, the magazine is withdrawn from the box and held in an inclined position, with the lens-board down and the

curved finger 69 turned downward in the path of the plate-holders. The plate-holders having been previously loaded are now inserted one at a time, with the lower edge of the first holder resting against the lugs 65 65 on the forward edge of the bridge 64 and its upper edge resting against the curved finger 69 on the releasing-lever 66 and the remaining holders following in regular order, the last one being held against the preceding ones by the spring-clips 71 72 72, and the ratchet-wheel indicator 12 having been set at "12" the magazine is replaced in the box, care being taken to have the spring 19 on the bottom of the magazine clear the stud-pin 21 in the bottom of the box and to have the lateral arm 68 on the rock-shaft 67 enter between the parallel ears 7' 7' on the slide 7. The camera is now ready for making an exposure, and when the exposure has been made it is now necessary to exchange the exposed plate and present an unexposed plate in its place, which result is attained in the following manner: The camera is first tilted forward, with the front slightly lower than the rear end, as shown in Fig. 6, and the slide 7 pulled out and then pushed back again. The outward movement of the slide raises the finger 69 and releases the upper edge of the foremost holder containing the exposed plate, which falls forward, face downward, on the bottom of the magazine and in front of the bridge, and at the same time the finger 70 is projected in front of the next plate-holder. The return movement of the slide 7 raises the finger 70 and lowers the finger 69 in front of the plate-holder and at the same time registers the exposure by turning the ratchet-wheel indicator one tooth and exposing the figure "1" to view. The above operation is best performed by holding the side of the camera with the right hand against the operator's body and manipulating the slide 7 with the left hand. The next operation is to tilt the front of the camera upward and then draw out the magazine, as shown in Fig. 7. This movement allows the exposed holder to slide from the bottom of the magazine through or under the bridge 64 and onto the bottom of the camera-box, with the rear edge of the holder resting against the gage-blocks 75, as clearly shown in Fig. 7. The camera is now moved in the direction of the arrow shown in Fig. 7 until it assumes the position shown in Fig. 8, which causes the loose plate-holder to fall on the back of the box between the beveled centering-blocks 74 74 and below the gage-blocks 75, as shown. The camera is now restored to the position shown in Fig. 7, which causes the loose plate-holder to assume the position shown in Fig. 9, and while in this position the magazine is now pushed into the box, thereby causing the spring-clips 71 and 72 72 to snap over the upper and lower edges of the plate-holder and draw it up against those remaining in the magazine, at the same time pushing them all forward, so as to press the

foremost one against the lugs 65 65 and the curved arm 69 and in the correct focal position for exposure. This operation is repeated for each exposed plate and while apparently somewhat complicated in description in reality is extremely simple in operation, requiring but a few seconds to make the change.

The accompanying drawings show my invention in the best form now known to me; but many changes in the details may be made within the skill of a good mechanic without departing from the spirit of my invention as set forth in the claims hereunto appended.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. In a magazine-camera, a camera-box, the gage-blocks, 75, and the centering-blocks, 74 74, fixed in the back corners of said box, in combination with the plate-holder, 77, the sliding magazine, and the spring-clips, 71 and 72 72, fixed to said magazine, substantially as and for the purpose set forth.

2. In a magazine-camera, a camera-box, in combination with a sliding magazine, the bridge, 64, fixed above the bottom of the mag-

azine and carrying the spring-clip, 71 substantially as and for the purpose set forth.

3. In a magazine-camera, the camera-box, and the slide, 7, carried by said box, in combination with the sliding magazine, the plate-releasing lever, 66, carried by the magazine and operatively connected to said slide, the spring-clips, 72 72, fixed to the top of said magazine, and in the rear of said lever, 66, the bridge, 64, fixed above the bottom of said magazine, the lugs, 65 65, fixed to the forward edge of said bridge, and the spring-clip, 71, fixed to the rear edge of said bridge, substantially as and for the purpose set forth.

4. In a magazine-camera, the camera-box, and the stud-pin, 21, fixed therein, in combination with the sliding magazine, the retaining-spring, 19, carried by said magazine and formed at its free end with the orifice, 20, and diagonal tongue, 22, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

RUDOLPH CHAS. BECKER.

Witnesses:

J. K. MOWER,
PETE GAUGHAN.