

No. 631,249.

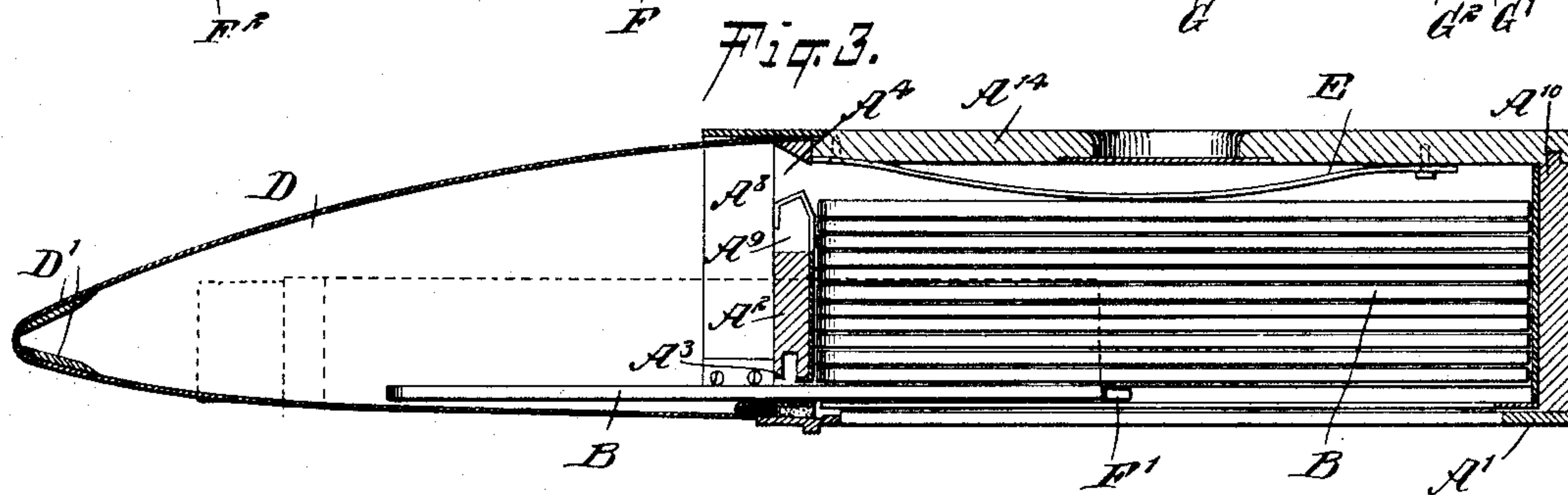
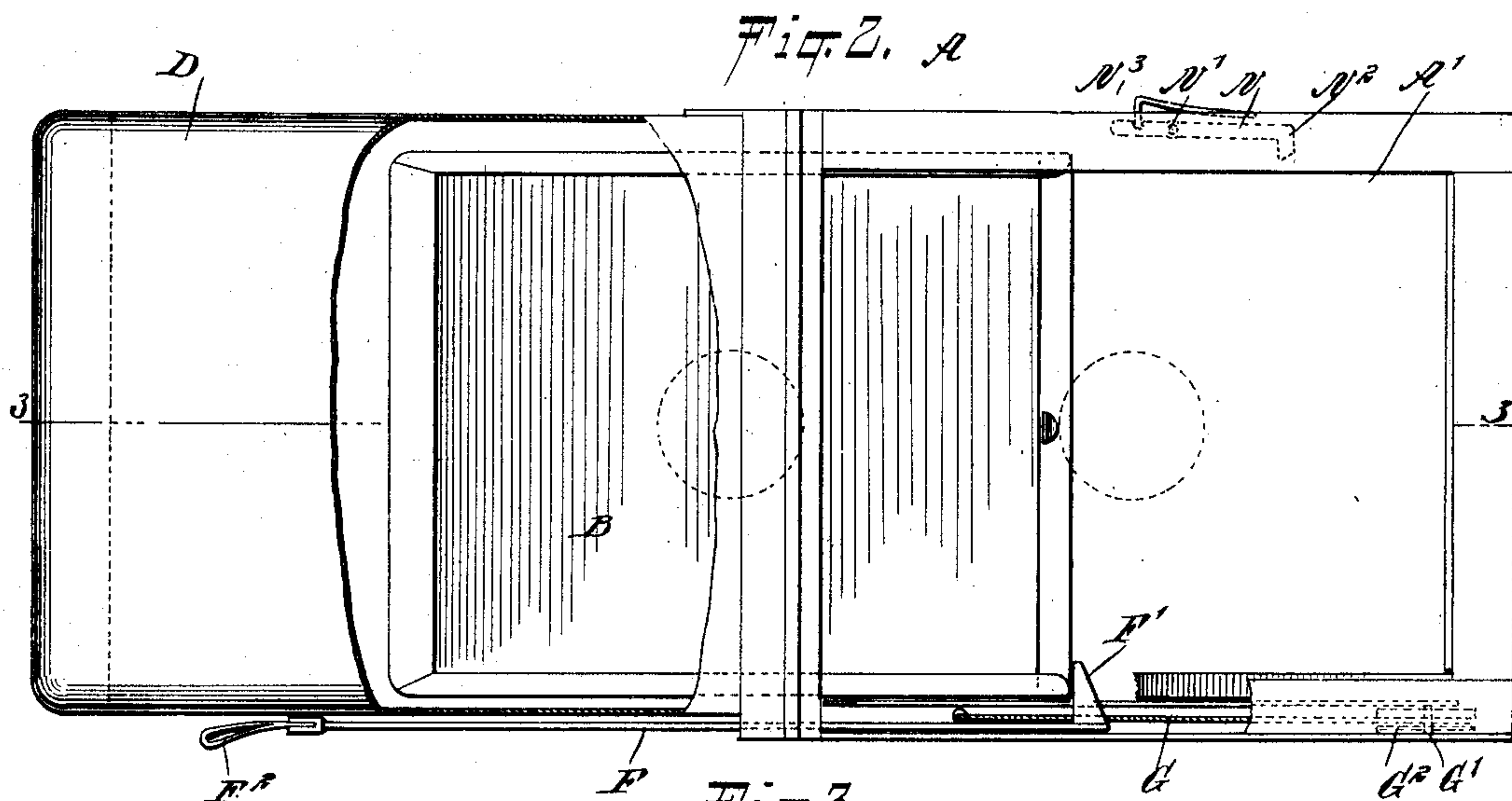
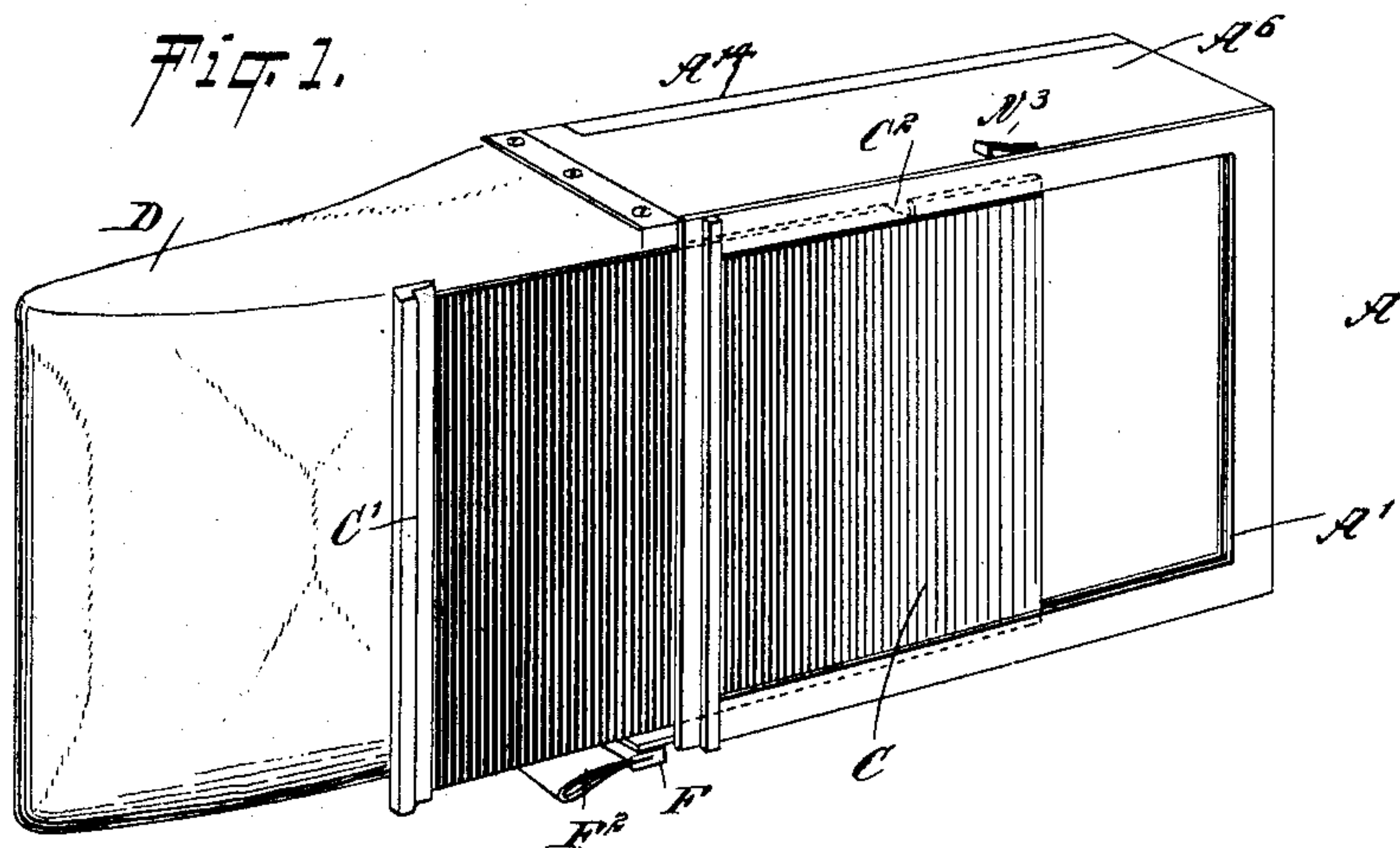
Patented Aug. 15, 1899.

W. F. FOLMER.
MAGAZINE PLATE HOLDER.

(Application filed Oct. 25, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:
William P. Gaebel.
Nevy Foster.



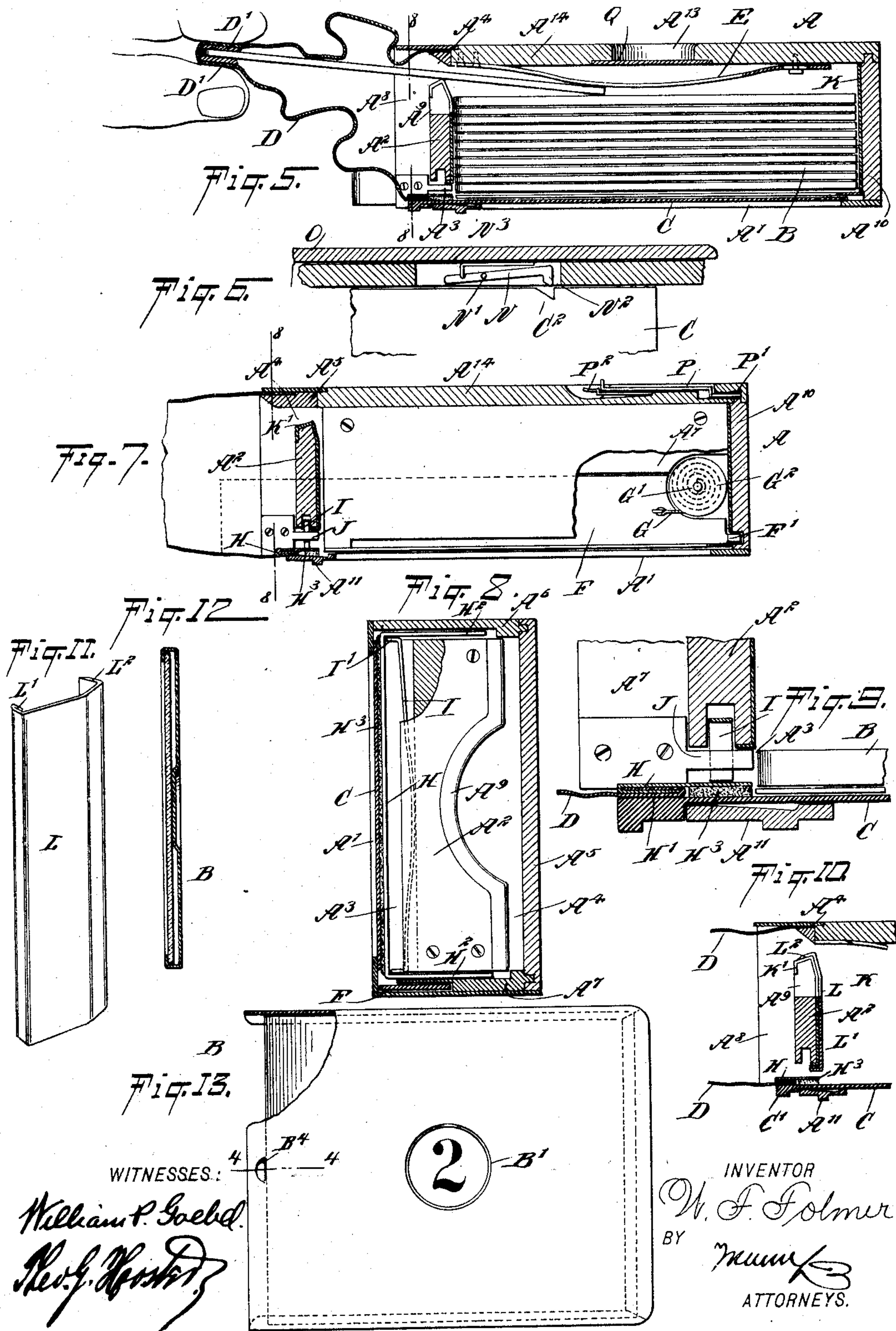
INVENTOR
W. F. Folmer
BY
Maurice B.
ATTORNEYS.

W. F. FOLMER.
MAGAZINE PLATE HOLDER.

(Application filed Oct. 25, 1898.)

(No Model.)

2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

WILLIAM F. FOLMER, OF NEW YORK, N. Y., ASSIGNOR TO THE FOLMER & SCHWING MANUFACTURING COMPANY, OF SAME PLACE.

MAGAZINE PLATE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 631,249, dated August 15, 1899.

Application filed October 25, 1898. Serial No. 694,540. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. FOLMER, of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Magazine Plate-Holders for Photographic Cameras, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved magazine plate-holder for convenient attachment to and removal from a photographic camera and arranged to permit the operator to make the desired exposure in the usual manner upon removing the slide, to remove the exposed plate or film and store it in the back of the holder, and at the same time automatically bring an unexposed plate or film into position for exposure, the various changes mentioned being possible in broad daylight without a dark room or the like and without danger of the plates or films becoming light-struck.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improvement with the slide partly withdrawn. Fig. 2 is an enlarged front elevation of the improvement with parts broken out and the exposed plate partly withdrawn from the front opening of the holder. Fig. 3 is a sectional plan view of the same on the line 3 3 in Fig. 2. Fig. 4 is a sectional plan view of part of a plate-holder on the line 4 4 of Fig. 13. Fig. 5 is a sectional plan view of the improvement with parts in a different position from that shown in Fig. 3. Fig. 6 is a sectional front elevation of part of the improvement, showing the locking device for the slide and the holder in position on the camera. Fig. 7 is a sectional plan view of the improvement, showing principally the spring-pressed holder-remover. Fig. 8 is a transverse section of the improvement on the lines 8 8 in Figs. 5 and 7, parts being broken out. Fig. 9 is an enlarged transverse side elevation of part of the improvement, showing the slide in a closed

position. Fig. 10 is a sectional plan view of a modified form of the improvement arranged for the use of films. Fig. 11 is a perspective view of the reducing-plate employed when using films. Fig. 12 is a cross-section of one of the plate-holders, and Fig. 13 is a rear face view of the same with parts broken out.

The improved magazine plate-holder is provided with a box A, preferably made rectangular and lined with sheet metal, to contain a number of plate or film holders B, located in front of one another, a slide C being movably held in the apertured front A' of the box to allow of making an exposure when desired upon withdrawing the slide, it being understood that the sensitive plate or film in the front holder B is the one exposed to the light passing through the lens of the camera. The side A² of the box A is cut out or formed with two vertically-disposed slots A³ A⁴, of which the slot A³ is adjacent to the front A', and through said slot the front plate-holder, with the exposed plate, is removed, as hereinafter more fully described, and through the rear slot A⁴ the removed and exposed plate-holder is passed back into the casing at the rear or back end thereof, as will be readily understood by reference to Fig. 5.

On the box A, at the side A², is arranged a bag D, the mouth of which is attached to this end of the box, so that the exposed plate during the transfer from the front to the rear passes into said bag and is taken hold of therein by the operator, as indicated in Fig. 5, to shift the plate back into the casing at the rear end thereof. The several plate-holders are always pushed forward to bring the front plate-holder into proper position for exposure, a spring E being preferably provided for this purpose to press against the rear plate-holder in the box, said spring being secured to the inner face of the back A⁵ of the box.

The side A² terminates a short distance from the ends of the front A', the back A⁵, the top A⁶, and the bottom A⁷, so as to form a place A⁸ adjacent to the back for guiding the inner free end of the removed plate-holder while in the bag and during the transfer from the front to a rearmost position in the box. The side A² is also cut out at its rear edge and near the middle thereof, as at A⁹, (see Figs. 5

and 8,) to permit the operator to readily push the plate-holder home into proper position in the back of the box.

In order to move the front plate-holder 5 after exposure out of the box through the slot A³ into the bag D, I provide a bar F, fitted to slide in suitable bearings in the bottom A⁷, the bar having a lug F' at its rear end for engaging the side edge of the front plate-holder 10 B adjacent to the side A¹⁰ of the box to permit the operator upon pulling the bar outward to draw the front plate-holder along, as will be readily understood by reference to Figs. 2 and 3. The bar F extends to the out- 15 side of the box at the side A² and is formed at its end with a pull F², adapted to be taken hold of by the operator's fingers, to move said bar outward to push the front plate-holder into the bag, as before mentioned. When 20 the plate-holder has passed into the bag, the operator, on taking hold of the outer end of the bag at opposite sides thereof, can readily engage the edge of the plate-holder and pull the latter completely out of the front of the 25 casing upon stretching the bag to its fullest extent, and while the operator has hold of the plate-holder in the manner described he can readily swing the plate-holder rearwardly to bring the front end of the plate-holder in 30 alinement with the slot A⁴ and then push the plate-holder inward by clasping the bag correspondingly and pushing the plate-holder home under the spring E. When the operator releases the pull F² of the bar F, then a band 35 or cord G, connected with said plate-holder close to the lug F', automatically returns said bar to its normal position, said band or cord G being connected with and winding on a spring-pressed shaft G', contained in a casing 40 G², attached to the bottom A⁷ of the box A close to the side A¹⁰. (See Fig. 7.) It is understood that the casing G² has an opening in its rim for the passage of the band or cord G to and from the casing. On drawing the 45 bar F outward the band G unwinds and winds up the spring connected with the shaft G', so that when the operator releases the bar the said shaft is rotated in the opposite direction by the force of the spring, and consequently 50 the band G is wound up and the bar F is drawn back to an innermost position. The lug F' normally extends in a recess cut in the side A¹⁰ (see Fig. 7) to permit the plate-holders to move forward, the front plate-holder being 55 in alinement with the lug F', so that on the next pulling out of the bar F this front plate-holder is pushed through the slot A³ into the bag D, as previously described.

The outer end of the bag D is lined at the 60 inside with two vertically-disposed and oppositely-arranged stiffening-plates D' to permit the operator to securely take hold of the plate upon pressing the outside of the bag, as will be readily understood by reference to Fig. 5. 65 The mouth of the bag has the rear side, the top, and the bottom rigidly secured to the corresponding parts of the box A, but the front

of the bag is secured in the doubled-up portion H' of a metallic plate H, extending in the rear of the solid portion A¹¹ of the front 70 A', said plate H being formed at the top and bottom with arms H², fitted to slide in suitable guideways formed on the inside of the top A⁶ and the bottom A⁷. (See Fig. 8.) The inner end of the plate H is covered in front 75 of the doubled-up portion H' with a strip H³ of felt or other soft material, either on the inner face of the slide C or the inner face of the solid portion A¹¹ of the front A'. (See Figs. 9, 3, 5, and 6.) The plate H is pressed 80 on by a spring I, held in a recess in the side A², as is plainly shown in Figs. 8 and 9, the front bent ends I' of said spring resting against the plate at the inside thereof adjacent to the guide-arms H². 85

Now when the slide C closes the apertured front A' of the box, as shown in Fig. 9, then the felt strip H³ rests on the inner face of the slide, and the inner edge of the metallic plate H extends in the slot A³, so as to reduce the 90 size thereof to such an extent as to be less in width than the thickness of a plate-holder B, and consequently the front plate-holder cannot be pushed through the slot A³ as long as the slide C is in the position mentioned and 95 holds the plate H in the position stated. When the slide C is withdrawn for making an exposure, then the spring I in pressing on the metallic plate H forces the same forward in the slot A³ until the strip H³ is firmly seated 100 on the solid portion A¹¹ of the front A'. As the plate H moves outward in the slot A³, the latter becomes sufficiently large for the passage of the front plate-holder B, which can after exposure be pushed outward upon the 105 operator manipulating the bar F, as previously described, the top and bottom edges of the plate-holder passing over guide-arms J, extending into the slot A³ at the top and bottom thereof, said guide-arms being se- 110 curely fastened to the top A⁶ and bottom A⁷ of the box A.

The metallic lining K for the box is extended, as at K', over the rear edge of the side A², as is plainly indicated in Figs. 6, 7, and 8, 115 and this edge of the end is preferably beveled to permit the removed and exposed plate-holder to readily pass up to and through the slot A⁴ into the back of the box.

When films are used instead of the usual 120 glass plates and the holders are correspondingly less in thickness, then it is necessary to reduce the width of the slots A³ A⁴ correspondingly, and for this purpose a metallic plate L is employed and slipped over the lin- 125 ing at the side A², as is plainly shown in Fig. 10, said metallic plate L being provided at the front and rear with flanges L' and L², of which the flange L² is beveled and fits over the beveled portion K' of the lining. The 130 other flange L' extends into the slot A³ in the rear of the forward end of the metallic plate H. Now by the arrangement described the film-plate holder in the front of the box can-

not pass into the slot A³ unless the slide C is withdrawn, as previously described.

In filling the box A with plate-holders I place one plate-holder of a thickness somewhat in excess of the width of the slot A³ in the rear of the box as the last plate-holder to be exposed, and now it is evident that when all the plate-holders have been successively removed from the front of the box and again stored in the rear thereof, as described, until the original last plate-holder becomes the front plate-holder, then the operator cannot push this plate-holder by the bar F through the slot A³, as the latter is less in width than the thickness of said holder, and consequently the operator becomes aware that all the plates have been exposed and a reëxposure is completely prevented.

In order to prevent the slide C from being accidentally drawn out while the holder is not attached to the camera, I provide a locking device for the slide. (See Figs. 1, 2, and 6.) This locking device consists of a locking-lever N, arranged within a recess in the top A⁶ of the box, and said lever is fulcrumed at N' and has one end formed with a catch N², adapted to engage a notch C² in the upper edge of the slide C. The other end of the lever N is pressed on by a spring N³, secured to the top A⁶ of the box, extending with its free end somewhat above the top surface of said top. (See Figs. 1 and 2.) The spring N³ normally permits the lever N to engage with its catch N² the notch C² in the slide to lock the latter against removal; but when the box A is placed in position on the camera O in the usual manner and locked thereto then the spring N³ is pressed inward by coming in contact with the framework of the camera, (see Fig. 6,) and consequently the said spring imparts a swinging motion to the lever N to move the catch N² out of engagement with the notch C². Thus when the box A is in position on the camera the slide C can be withdrawn, but when the box is removed from the camera and the slide is pushed into an innermost position then the spring being released causes the lever to swing to move upward the catch N² in engagement with the notch C².

A portion A¹⁴ of the back A⁵ of the casing A is preferably removable to permit of conveniently filling and emptying the box with plate-holders, said removable portion being normally locked in place by a bolt P, (see Fig. 7,) adapted to engage a keeper P', formed on the side A¹⁰ of the box, and said bolt is normally locked in place when engaging said keeper by a spring P², held, with the bolt, in a recess in the removable part. Now when it is desired to remove this part of the back A⁵ the latter is slipped longitudinally to disengage the keeper P'. The box can now be opened from the back by removing this part of the back for the purpose mentioned.

Each plate-holder B is formed in its back

with a depressed portion B', adapted to contain on its outer face a numeral or other character for distinguishing the plate-holders, the depression preventing the character from being scratched or injured in the changing of the holders. The depressed portion B' is adapted to engage the clean face of the sensitive plate or film, as is plainly shown in Fig. 12, to securely bring the plate or film into the focal plane against the usual guideways of the holder. The depressed portion B', with the character for indicating the plate-holder, registers with an aperture A¹³, formed in the removable portion of the back A⁵, said aperture being covered by a translucent pane Q of a color to prevent the sensitive plates or films from becoming light-struck. By the arrangement described the operator can see at any time the character on the depressed portion of the plate-holder last exposed, and thus can keep a record of the pictures taken. Each plate-holder is provided in its back near the entrance end for the plate with a lug B² to spring against the outer edge of the plate to hold the latter securely in the holder. (See Figs. 4 and 13.)

In using the device the operator fills the box A with the plate or film holders B in a dark room through the back A⁵, of which the removable portion or cover A¹⁴ has been removed for the purpose. The forward plate-holder B rests against the cut-out portion of the front of the lining, and the rear plate-holder is pressed on by the spring E to hold the several plate-holders firmly against one another. When the back is closed, then the box is ready to be used in the camera and is inserted therein in the usual way and fastened thereto, and when it is desired to make an exposure then the operator pulls out the slide C, and in doing so the strip H³, with the plate H, moves forwardly to bring said strip H³ against the fixed part A¹¹ of the front A' and render the box light-proof. When the exposure has been made, the operator pulls the removing-bar F outward to cause the lug F' to push the front plate-holder, with the exposed plate or film, into the bag D, the outer end of which is now taken hold of by the operator and moved to the outer edge of the plate-holder to grip the same between the strengthening-strips D'. The operator now by extending the bag pulls the plate-holder completely out of the slot A³, so that the free end of said plate-holder is outside of the side A² between the top A⁶ and the bottom A⁷, thus enabling the operator to swing the plate-holder rearwardly and bring it into alignment with the slot A⁴ and to then push said plate-holder into position in the back of the box under the spring E and cause a forward movement of all the plate-holders by the action of said spring against the back plate-holder. The plate or film in the front plate-holder can now be exposed, and the above-described operation is then repeated.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A magazine plate - holder for photographic cameras, provided with a box for containing the plate or film holders, and arranged at one side for the removal of the exposed front plate-holder and for the return of said plate-holder to the back of the box, a bag attached to the box, the mouth of the bag opening on said side of the box, to permit the operator to take hold of and handle the exposed plate or film holder, on removing the same from the front and storing it at the back of the box, without exposure to light, a slide fitted to move in the front of said casing, and a spring-pressed plate covered with a strip of soft material and carrying one side of the mouth of the bag, said strip normally resting against the slide, and upon withdrawal of the latter, resting against the fixed portion of the box, substantially as shown and described.
2. A magazine plate - holder for photographic cameras, provided with a box for containing the plate or film holders, one side of the box being cut out to form two slots, one for the passage of the plate-holder from the box and the other for the return of the plate-holder to the box, said side having the wall for the rear slot beveled and lined with metal, and a reducing-plate adapted to be fitted upon said side, to reduce the size of the slots, substantially as shown and described.
3. A magazine plate - holder for photographic cameras, provided with a box for containing the plate or film holders, one side of the box being cut out to form two slots, one for the passage of the plate-holder from the box and the other for the return of the plate-holder to the box, said side having the wall for the rear slot beveled and lined with metal, and a reducing-plate adapted to be fitted upon said side, to reduce the size of the slots, said plate being, for this purpose, provided with flanges, substantially as shown and described.
4. A magazine plate - holder for photographic cameras, provided with a box having slots at one side, and a bag attached to the

side and having oppositely-arranged stiffening-strips at the inner side of its outer end for gripping the plate-holder to be transferred from the front of the box to the rear thereof, substantially as shown and described.

5. In a magazine plate-holder, a box, a slide for closing the front opening thereof, the slide being provided with a notch, a lever pivoted on the box and having a catch at one end for engaging the notch of the slide when the box is removed from the camera, and a spring secured to the top of the box with its free end projecting above the surface of the same, and adapted to engage the said lever to disengage the catch thereof from the notch of the slide when the box is in position on the camera, as and for the purpose set forth.

6. In a magazine plate-holder, the combination with a box for containing the plate-holders, of a bar fitted to slide in the box and provided with a lug for engaging a plate-holder, a spring-pressed shaft in the box, and a cord secured to the said shaft and winding on the same, the other end of the cord being secured to the slide, substantially as described.

7. In a magazine plate-holder, the combination with a box provided with openings in one end, a bag secured to the end of the box over the openings thereof, and a slide for closing the front opening of the box, of a spring-pressed strip in the box and resting against the slide when the slide is in place and against the box when the slide is withdrawn, said strip projecting into the front end opening of the box and serving to prevent a plate-holder from being withdrawn when the slide is in place, substantially as described.

8. In a magazine plate-holder, the combination with a box provided in one end with openings for the withdrawal and return of the plate-holders, of a reducing-plate fitting upon the said end of the box and projecting into the openings thereof to reduce the size of the same, substantially as described.

WILLIAM F. FOLMER.

Witnesses:

THEO. G. HOSTER,
JNO. M. RITTER.