

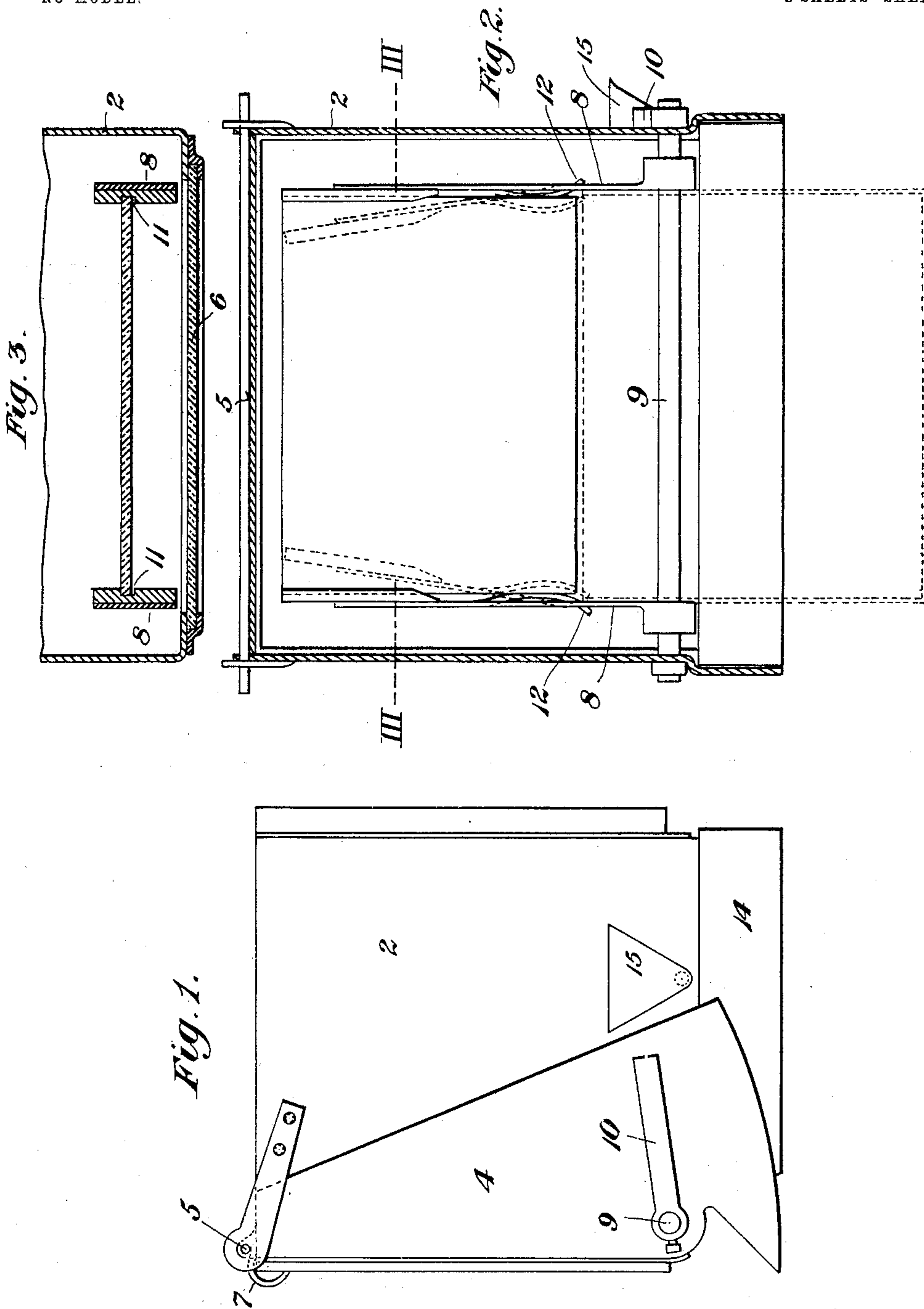
J. D. LYON.

DEVELOPING APPARATUS FOR PHOTOGRAPHIC PLATES.

APPLICATION FILED JAN. 19, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

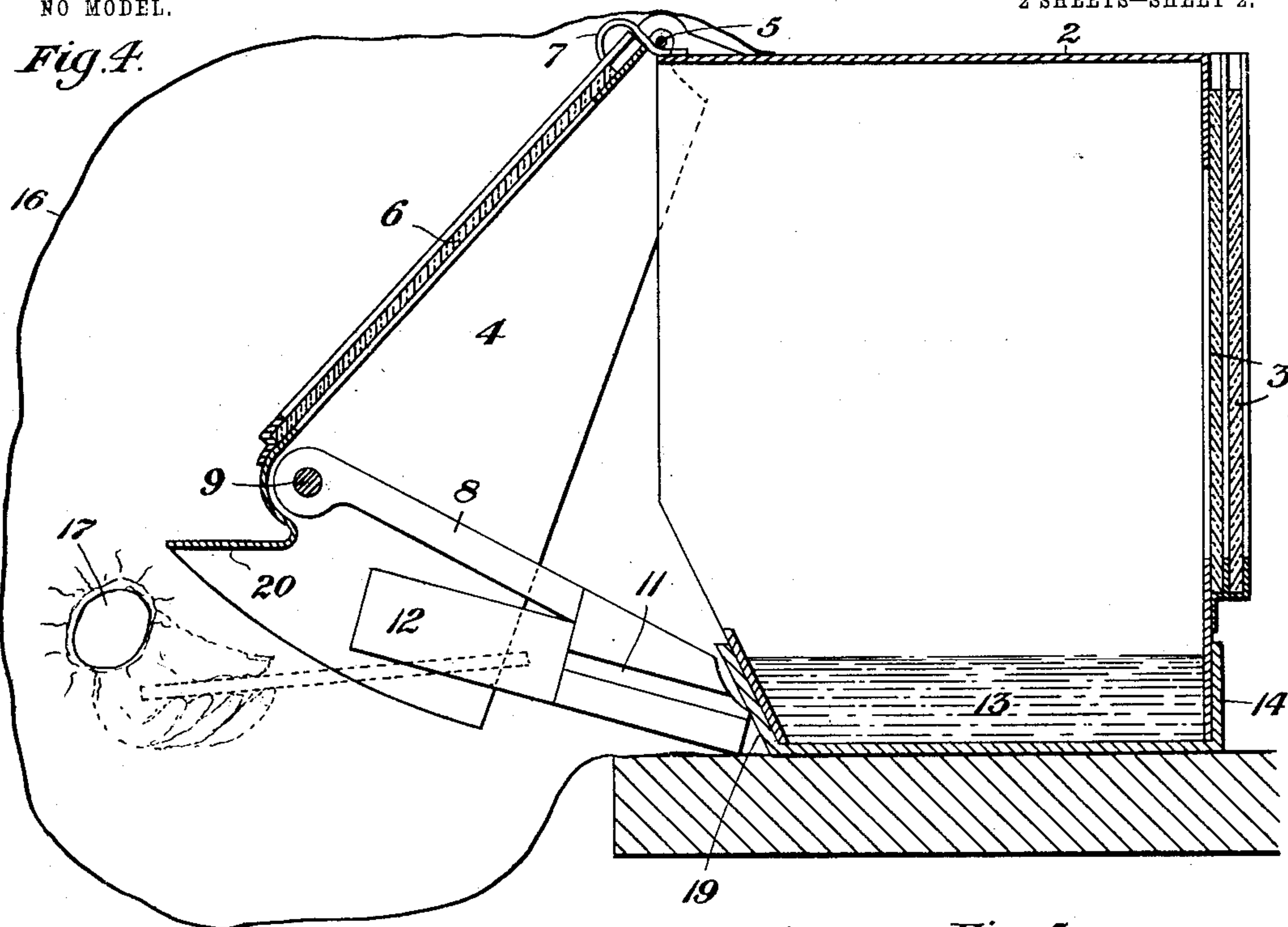


Fig. 5.

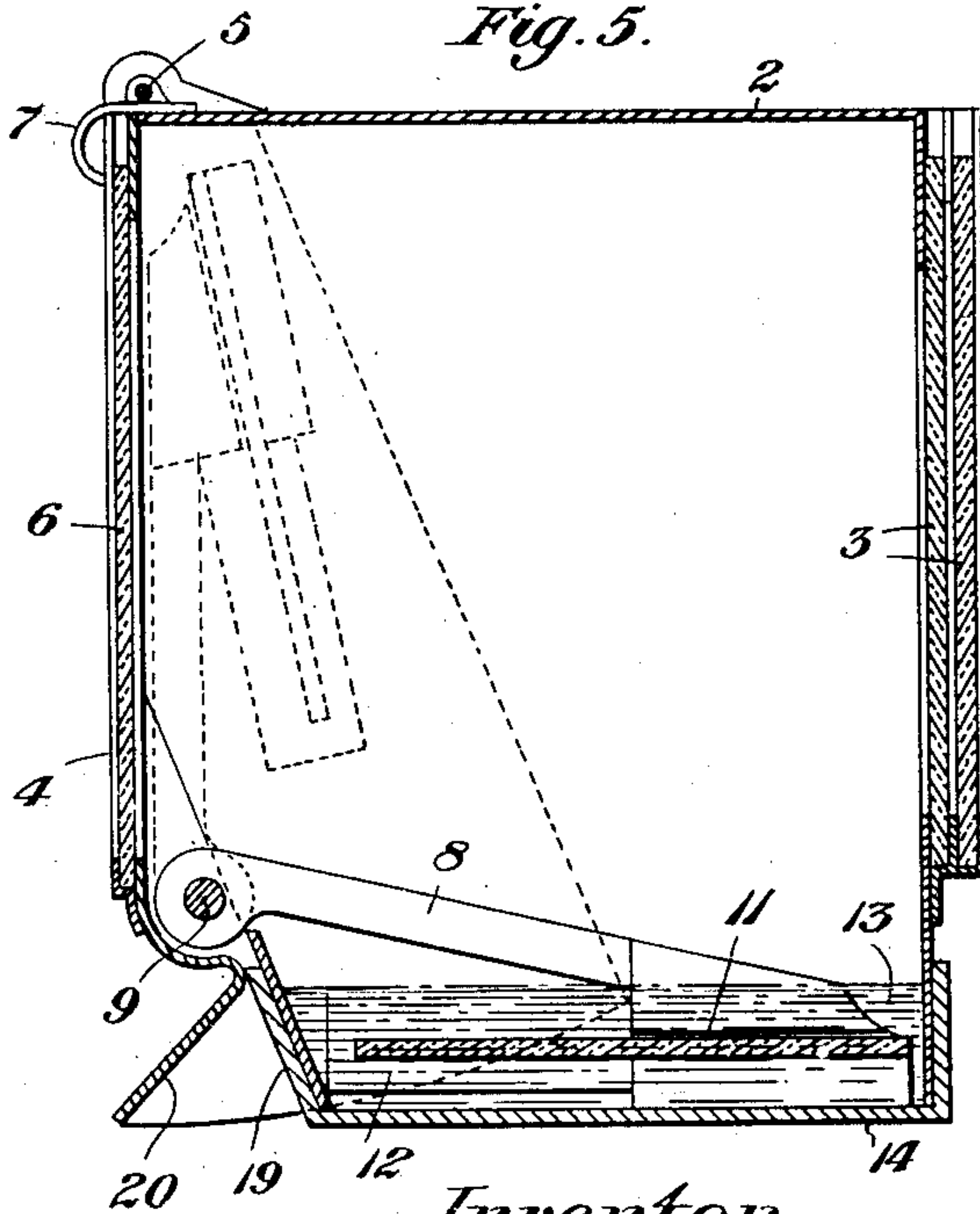
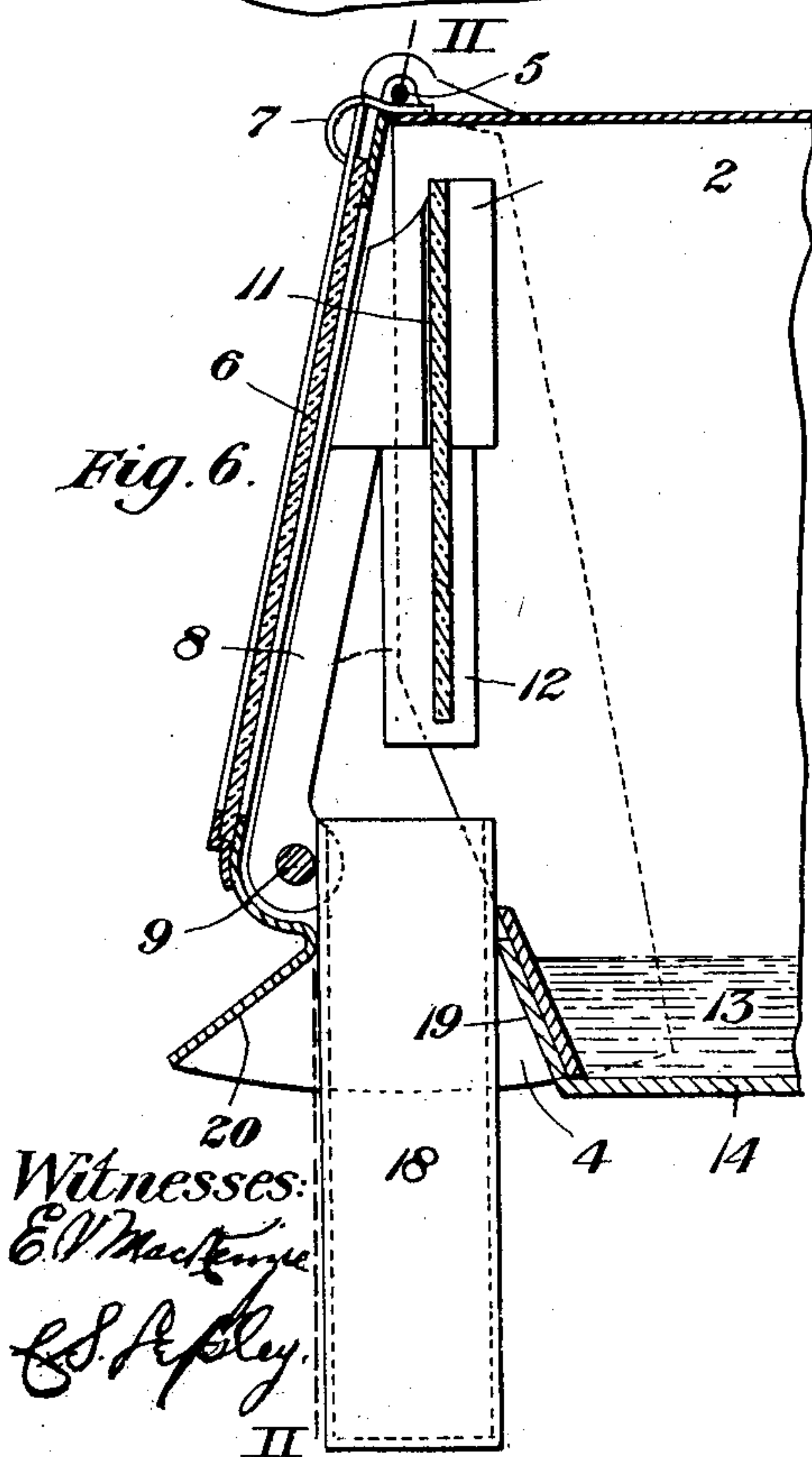


Fig. 6.



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UNITED STATES PATENT OFFICE.

JESSE D. LYON, OF PITTSBURG, PENNSYLVANIA.

DEVELOPING APPARATUS FOR PHOTOGRAPHIC PLATES.

SPECIFICATION forming part of Letters Patent No. 744,376, dated November 17, 1903.

Application filed January 19, 1903. Serial No. 139,511. (No model.)

To all whom it may concern:

Be it known that I, JESSE D. LYON, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Developing Apparatus for Photographic Plates, of which the following is a specification, reference being had therein to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a view in side elevation of my improved developing apparatus for photographic plates. Fig. 2 is a vertical sectional view indicated by the line II II of Fig. 6, the fixing-bath vessel being indicated in dotted lines. Fig. 3 is a horizontal cross-sectional view indicated by the line III III of Fig. 2. Fig. 4 is a longitudinal sectional view showing the interior of the apparatus with the surrounding light-proof hood in position for receiving the plate. Fig. 5 is a similar view showing the negative immersed in the developing-bath. Fig. 6 is a partial similar view showing the negative raised and the fixing-bath vessel being inserted upwardly to receive the plate.

My invention consists of an apparatus for developing photographic plates independent of a dark room; and it consists in an inclosing box or receptacle provided with a plate-holder adapted to be manipulated in the interior thereof and also having oppositely-arranged panes for intercepting actinic rays, by which the plate may be examined from the outside.

Referring to the drawings, 2 represents the main surrounding walls of the stationary portion of the apparatus, provided on one side with one or more slides for the insertion of ruby or other non-actinic pane 3.

4 is a movable portion of the device, preferably attached by a pivot or hinge at 5 to the body portion 2 and also provided with one or more non-actinic panes 6.

The glasses or panes 2 and 6 are so located and arranged that when the apparatus is closed they will be approximately opposite each other, so that the plate in the interior may be observed when raised to the position shown in Fig. 6 or when lowered, as in Fig. 5, by placing the source of light, either natu-

ral or artificial, on the side of the box opposite to the observer.

Light is prevented from entering the interior at hinge-joint 5 by a flexible covering 7, of rubber or other suitable material or means. The movable portion 4 is hinged to the main body portion, as shown in the principal figures of the drawings, and is adapted to be opened away from the main inclosing body portion sufficiently far to allow of the insertion of the plate, as shown in Fig. 4, being protected from the light by a surrounding covering. While transferring it into the interior of the fixing-bath vessel, as shown in Fig. 6, the opening to the interior is closed by such vessel itself.

The movable portion is provided with a swinging negative-holder consisting of two sides 8 8, mounted on a turning or manipulating shaft or stem 9, having a bearing in the sides of the movable portion and provided at one side with an exterior turning handle or lever 10. These arms 8 may be adjustably secured to the stem in any suitable manner, as by set-screws, thereby allowing them to be set in or out for varying sizes of plates. The arms 8 are resilient or otherwise adapted to close inwardly on the edges of the plate and are provided on their inner faces with plate-receiving slots 11 and outwardly-deflected bearing extremities 12. The holder-arms as thus made are adapted to be separated outwardly by inserting the plate and to bind inwardly against its sides to firmly hold it when thus inserted, as shown in Figs. 2 and 6.

At its lower portion the main case is provided with a developing-fluid cavity 13, which may be merely an integral lower portion of the main box, or it may consist of a removable pan 14, adapted to interfit with the lower portion of the box, so as to provide a reservoir for the fluid.

The advantages of a removable pan is that it facilitates washing of the parts or renewal of the bath. A pouring-funnel 15 may be also provided for supplying or removing the fluid.

During the operation of inserting the plate the opening portion of the apparatus is surrounded by a flexible light-proof hood or blind 16, provided with armholes 17, within

which hood the plate may be conveniently removed from the plate-holder and inserted between the holder-arms 8 in slots 11.

By turning shaft or stem 9 the holding-arms may be raised, the movable portion 4 closed down upon the main box, as in Fig. 5, and the hood removed, whereupon the plate may be lowered into the developing-bath and from time to time raised upwardly, as indicated in dotted lines in Fig. 5, for the purpose of inspection, or its surface may be observed when lowered in the bath, as in Fig. 5.

The bath 13 is comparatively shallow, allowing the operator to inspect the plate when horizontally immersed therein.

When fully developed, the holding-frame is raised to the upright position, as shown in Fig. 6, and the fixing-bath vessel 18 is inserted upwardly, bearing against beveled faces 19 and 20, forming portions of the meeting sides of the stationary and movable portions, forcing the movable portion outwardly, or such portion being moved by hand as far as necessary. Upon further upward movement the vessel 18 will come into contact with the outwardly-turned extremities 12 of the frame, forcing them farther apart, releasing the sides of the holder from the plate, when it will be dropped downwardly into the fixing-bath.

It will be observed that the operation of thus inserting the fixing vessel entirely prevents the entrance of light, and while the fixing step of the operation is not necessarily confined to this mode of operation I have found it very convenient and practicable. It will be understood that the fixing vessel may be dispensed with and the negative removed by hand or otherwise and fixed in any other vessel, as is the usual practice.

As thus constructed the device is practically proof against actinic rays of light, rendering the operation of developing possible without the use of a dark room, as the manipulation of the plate is carried on entirely within the isolated chamber.

Where under-exposed plates are developed, requiring a long immersion, they may be allowed to remain in the bath, examined from time to time without the usual inconvenience to the operator of having to remain in the dark room, the negative accurately and frequently observed by raising it into range of vision between the opposite glasses, and the necessary time for developing may be accurately judged.

The advantages of my invention may be made in the design, construction, proportions, or other details by the skilled mechanic without departing from the invention, and all such are to be considered as within the scope of the following claims.

What I claim is—

1. A developing apparatus for photographic plates consisting of an inclosing case provided with a developing-bath, and a movable plate-holder provided with arms adapted to engage

the opposite edges of the plate and to immerse it horizontally in the bath, substantially as set forth.

2. A developing apparatus for photographic plates consisting of an inclosing case provided with a developing-bath, and a movable plate-holder provided with arms adapted to engage the opposite edges of the plate and to immerse it horizontally in the bath, and to support it vertically above the bath, substantially as set forth.

3. A developing apparatus for photographic plates consisting of an inclosing case provided with oppositely-arranged windows and a developing-bath, and a movable plate-holder provided with arms adapted to engage the opposite edges of the plate and to immerse it horizontally in the bath and to support it above the bath between the windows, substantially as set forth.

4. A developing apparatus for photographic plates, consisting of an inclosing case provided with a developing-bath and oppositely-arranged windows, and a pivoted plate-holder having spring-arms, substantially as set forth.

5. A developing apparatus for photographic plates comprising an inclosing case provided with oppositely-arranged windows, a developing-bath, and a movable frame consisting of spring-arms provided with grooves adapted to receive and hold the plate, substantially as set forth.

6. A developing apparatus for photographic plates comprising an inclosing case provided with oppositely-arranged windows, a developing-bath, and a movable frame consisting of spring-arms provided with grooves, and a turning shaft therefor, substantially as set forth.

7. A developing apparatus for photographic plates comprising an inclosing case provided with oppositely-arranged windows, a developing-bath, and a movable frame consisting of spring-arms provided with grooves, adapted to receive and hold the plate, and having outwardly-turned extremities, substantially as set forth.

8. A developing apparatus for photographic plates consisting of a main case provided with a developing-bath, a movable portion forming a part of the case, and a plate-holder carried by the movable portion, substantially as set forth.

9. A developing apparatus for photographic plates consisting of a main case provided with a developing-bath, a movable portion forming part of the case, and a plate-holder mounted on a turning stem carried by the movable portion, substantially as set forth.

10. A developing apparatus for photographic plates consisting of a main case provided with a developing-bath, a movable portion forming a part of the case, a plate-holder consisting of spring-arms provided with receiving-slots, and a turning stem therefor, substantially as set forth.

11. A developing apparatus for photo-

graphic plates consisting of a main case provided with a developing-bath, a movable portion forming a part of the case, a plate-holder consisting of spring-arms provided with receiving-slots and outwardly-turned extremities, and a turning stem on which the arms are mounted, substantially as set forth.

12. A developing apparatus for photographic plates consisting of a case provided with a shallow developing-bath and observation-windows, with means for gripping the

plate by its edges and holding it horizontally in and vertically out of the bath, the plate being observable in either position, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JESSE D. LYON.

Witnesses:

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