

**No. 653,146.**

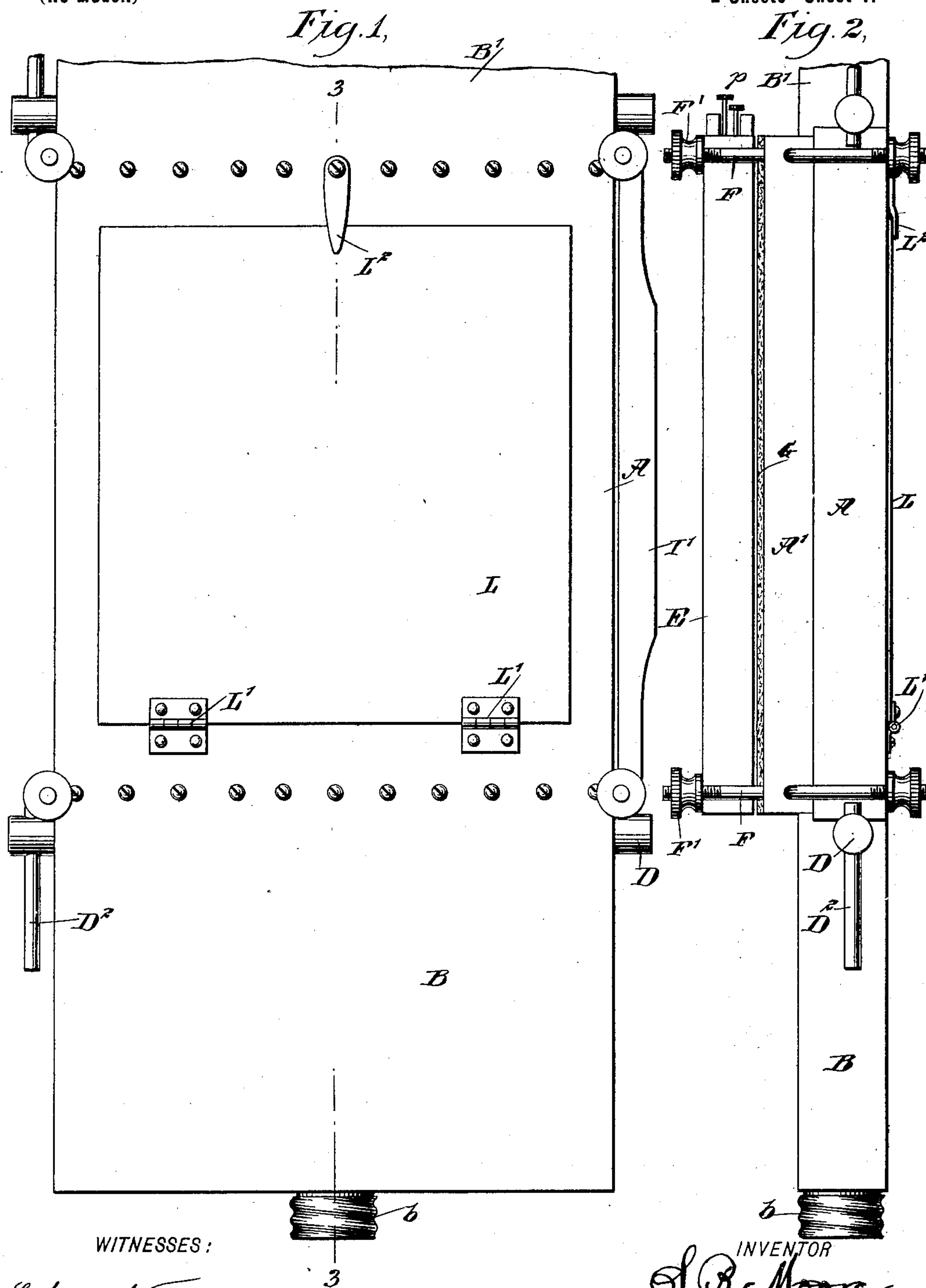
**Patented July 3, 1900.**

**S. B. MOORE.**  
**DEVELOPING TRAY.**

(Application filed Aug. 31, 1899.)

(No Model.)

**2 Sheets—Sheet 1.**



**WITNESSES :**

Edward Thorpe  
H. L. Reynolds.

INVENTOR  
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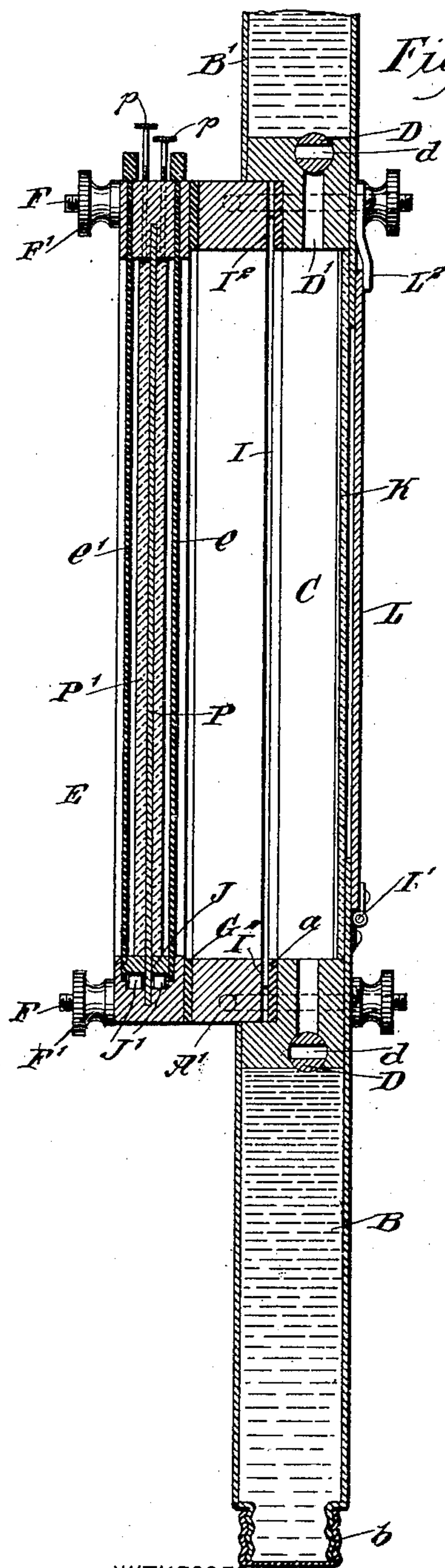
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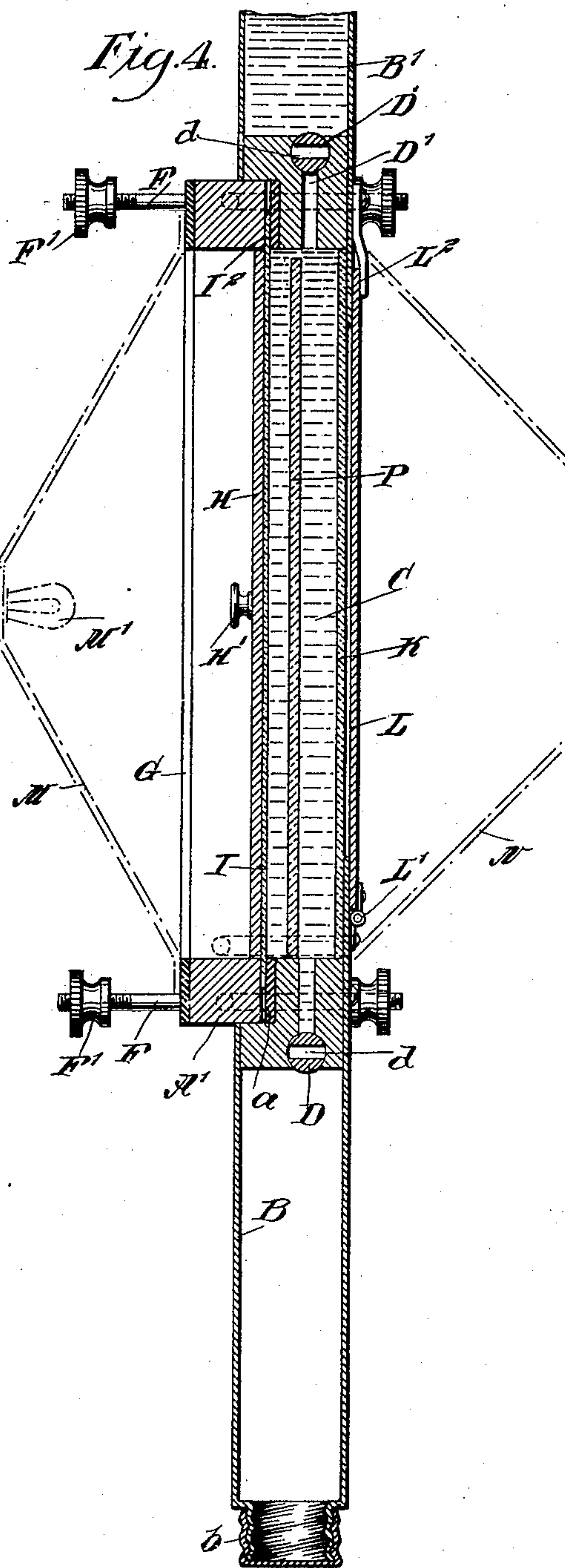
(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

STUART B. MOORE, OF NEW YORK, N. Y.

## DEVELOPING-TRAY.

SPECIFICATION forming part of Letters Patent No. 653,146, dated July 3, 1900.

Application filed August 31, 1899. Serial No. 729,045. (No model.)

*To all whom it may concern:*

Be it known that I, STUART B. MOORE, of the city of New York, borough of Manhattan, in the county and State of New York, have  
5 invented a new and Improved Developing-Tray, of which the following is a full, clear, and exact description.

My invention relates to an improvement in developing-trays by which the same may be  
10 used for developing a negative in open daylight or without a special dark room.

My invention comprises a tray which is adapted to receive the plate to be developed without exposing the same to light and is provided with a reservoir or reservoirs connect-  
15 ed therewith in such a manner that the proper developing and washing solution or solutions may be admitted to the chamber containing the plate and then discharged therefrom when  
20 desired. The tray is also provided with oppositely-located windows which are provided with a plate of any transparent non-actinic material, as ruby glass or celluloid, so that the progress of development of the plate may be  
25 readily observed.

The invention consists more particularly in the novel features, which will be hereinafter described and claimed.

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

Figure 1 is a side view of the device. Fig. 2 is an edge view thereof with a plate-holder  
35 attached; and Figs. 3 and 4 are longitudinal sections showing, respectively, a plate-holder secured to the tray and a plate in position within the developing-chamber.

The object of my invention is to provide a  
40 device which may be used at any point irrespective of the presence of sunlight for developing a negative, the same to be portable, so that it may be carried with the camera and a picture developed as soon as desired.

The device as shown comprises two chambers which are connected with each other by means of a valve, so that the solution may be transferred from one chamber to the other. The developing-chamber C is formed within  
50 the main body A of the tray and is provided with oppositely-placed windows which are provided with a closing-plate of any non-actinic material, as ruby glass or celluloid.

The plate K, which closes the window at the back side of the tray, is fixedly secured. This  
55 window is also provided with a hinged opaque shutter L, which is hinged at L' to the body of the tray and which is held in position by means of a catch L<sup>2</sup> at the opposite end. This makes it possible to cut off the light  
60 from the developing-chamber when desired or to open it, so that the plate within the developing-chamber may be inspected. The plate I, which closes the window at the opposite side of the tray, is mounted as a slide  
65 moving within guideways I<sup>2</sup>, formed in the sides and ends of the tray. This plate is provided with a thickened head or handle I' at one end, the plate projecting through said end of the tray. A guideway for this plate is  
70 provided between the body A of the frame and an auxiliary frame A', which is secured to the main frame by means of clamping-bolts F and nuts F' upon said bolts. By this means the plate I may be fixedly secured when de-  
75 sired, and by loosening the clamping-nuts F' the plate may be freed so that it may be drawn outward, thus opening the side of the tray for the admission or removal of the plate. It will be seen that the auxiliary frame A' is  
80 removable, which is a great convenience, as it enables the same tray by the substitution of suitable auxiliary frames to be used for plate-holders of different styles.

In order to form a water-tight joint be-  
85 tween the sliding plate I and the body of the frame, a strip *a* of suitable packing material is placed upon this face of the tray, so that the sliding plate I bears upon the same when clamped in position. The outer surface of  
90 the auxiliary frame A' is also provided with a layer G of packing material, which will prevent the infiltration of light into the developing-chamber as the plate is transferred from the plate-holder to the developing-tray.  
95

The plate-holder may be of any suitable form and is secured to the side of the developing-tray by being inserted beneath the clamping-nuts F' upon the ends of bolts F. In Fig.  
100 3 the plate-holder is shown in position, while in Fig. 4 it has been removed. The plate-holder E herein shown consists of the usual frame having a central partition and two slides *e* and *e'*, between which and the central partition are placed the two plates P and  
105 P'. This plate-holder E is in most respects



like the ordinary plate-holder, but at the end which is uppermost in Fig. 3 has the little ledges which ordinarily hold the plate in position cut away, so that the plate may readily drop out of the holder when placed with one side down and the slide *e* or *e'* removed. The plates *P* and *P'* are held in place by set-screws *p*, which pass through the end of the holder and engage the ends of the plates. At their opposite ends the plates engage bars *J*, which are pressed outward by springs *J'*, lying in the grooves back of the bars. By removing the slide and loosening the proper screws the plate may be caused to drop from the holder into the developing-chamber of the tray.

The solutions which are to be used in treating the plate are contained within tanks or reservoirs *B B'*, which are connected with either end of the developing-chamber by means of passages *D'*, which preferably extend across a considerable portion of the width of the tray. These passages are controlled by means of valves *D*, which have each an opening *d* extending through the same and adapted to be turned by means of handles *D<sup>2</sup>*, so as to coincide in direction with the passages *D'*. After the plate has been placed in position the slide *I* is moved inward and the auxiliary frame *A'* securely clamped thereon, so as to make a water-tight joint between said slide and the body of the tray, so that the solution which is being used for developing the plate may not leak out about its edges. The valve *D* communicating with the chamber containing the solution first to be used is then turned so as to open communication between the developing-chamber and said tank *B*. The tray is then turned up, so as to permit the solution to flow into the developing-chamber. The valve *D* is then turned so as to cut off communication until the plate has been sufficiently acted upon by this solution. The solution is then run back into its tank and the valve between closed. The developing-chamber may then be washed out or filled with another solution from the other tank. When the plate has been sufficiently acted upon by any solution, the tray is turned so that the developing-chamber is above the tank for said solution and the valve *D* between the two opened, which will quickly discharge the solution into the tank.

The process of development of the plate may be readily observed through one or both of the transparent plates covering the window-openings. By holding the tray, with the plate therein, between the eye of the observer and a source of light, as a window, the plate may be inspected almost as readily as if it could be taken up directly in the hand. If it is desired to entirely cut off light from the developing-chamber, a plate *H* may be used, which is of metal or other opaque substance and of such size as to snugly fit within the opening of the auxiliary frame *A'*. This plate is provided with a knob *H'*, by which it may

be readily handled and may be inserted or removed, as desired.

The tanks are filled and emptied by means of screw-caps *b* or other suitable closing devices placed upon their outer ends. The solution may be changed as often as desired or necessary for the proper development of the plate. Washing-water may also be used, if desired. The tray is shown as provided with two tanks *B* and *B'*; but it is evident that in some contingencies a single tank may be used or the tray may be provided with more than two tanks, the principle being the same in either case and being sufficiently shown by the two tanks.

In case it is desired to use an artificial light to illuminate the interior of the developing-chamber and to view the developing process a hood *M* is used, which has its edges adapted to be clamped to the side of the auxiliary frame *A'* by means of the clamping-nuts *F'* and has a small electric lamp *M'* and battery *M<sup>2</sup>* secured thereto, so as to illuminate the interior of the developing-chamber at will. Upon the opposite side of the tray may be secured a hood *N*, to the outer open end of which the eye may be applied, so as to view the result. These hoods are both detachable and may be used or not, as desired.

By means of this device it will be possible to develop a picture under almost any circumstances and wherever desired. It will add materially to the pleasures of photography, as it will make it possible for the photographer to develop his picture immediately and if there is anything wrong with it to rectify this by taking another picture. It also does away with the discomforts necessarily attendant upon the use of improvised dark rooms.

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

1. A developing-tray having openings in opposite sides, non-actinic transparent windows for closing said openings, one of said windows being movable toward and from its opening so as to cover or uncover the same, means for making a water-tight joint between said window and the tray when closed, means for securing a plate-holder to the tray and releasing the plate therefrom, and means for introducing and discharging the various liquids for the treatment of the plate, substantially as described.

2. A developing-tray having a non-actinic transparent sliding window, and means for pressing said window against the body of the tray to produce a liquid-tight joint and to hold said window against accidental movement.

3. A developing-tray, having two chambers, one adapted to receive the plate to be treated and having windows closed by non-actinic plates, one of said plates being mounted to slide to permit the introduction of the negative or photographic plate, clamps adapt-



ed to temporarily secure a plate-holder to this side of the tray and covering the window thereof, a liquid-holding tank at one end of the tray and having a passage connecting therewith, and a valve controlling the said passage, said tank having a filling-opening and cap, substantially as described.

4. A developing-tray, having two chambers, one adapted to receive the plate to be treated and having opposite windows closed by non-actinic plates, one of said plates being mounted to slide to permit the introduction of a negative or photographic plate, a hinged opaque cover for the opposite window, a removable opaque cover for the sliding window-plate, clamps adapted to temporarily secure a plate-holder to the side of the tray having the sliding plate and covering the window-opening on the said side, a liquid-holding tank at one end of the tray and having a passage connecting therewith, a valve controlling said passage, the tank having a filling-opening, and a cap closing the same, substantially as described.

5. A developing-tray, having two connecting chambers, a valve controlling the connection between said chambers, one chamber constituting a liquid-storing tank and the other a developing and plate-receiving chamber, a frame having an opening equal to that of the plate to be treated, a slide of non-actinic and transparent material mounted to slide in guides on the tray and adapted to close one side of the plate-receiving chamber, means for clamping the said frame to the tray with the slide between them, and means for temporarily securing a plate-holder to the outer side of this frame, substantially as described.

6. A developing-tray, having two connecting chambers, a valve controlling the connection between said chambers, one chamber constituting a liquid-storing tank and the other a developing and plate-receiving chamber, a frame having an opening equal to that of the plate to be treated, a slide of non-actinic and transparent material mounted to slide in guides on the tray and adapted to close one side of the plate-receiving chamber, means for clamping the said frame to the tray with the slide between them, and means for temporarily securing a plate-holder to the outer side of this frame, the tray having a window opposite its slide closed by a transparent non-actinic plate, substantially as described.

7. A developing-tray, having two connecting chambers, a valve controlling the connection between said chambers, one chamber constituting a liquid-storing tank and the other a developing and plate-receiving chamber, a frame having an opening equal to that of the plate to be treated, a plate of non-actinic and transparent material mounted to slide in guides on the tray and adapted to close one side of the plate-receiving chamber, means for clamping the said frame to the tray with the non-actinic transparent slide between them, means for temporarily securing a plate-

holder to the outer side of this frame, the tray having a window opposite its slide closed by a transparent non-actinic plate, and opaque removable outer covers for said window and plate-receiving opening, substantially as described.

8. A developing-tray having in one of its large or flat sides, an aperture of sufficient size for the flatwise insertion of a photographic plate, a non-actinic transparent window movably connected with the tray so as to cover or uncover said aperture, and a device for pressing said window against the body of the tray to produce a liquid-tight joint and to hold said window against accidental movement.

9. A developing-tray, having opposite non-actinic windows, means for securing a plate-holder to the tray and transferring the plate therefrom to the tray without exposing it, means for introducing and discharging the various liquids for the treatment of the plate, and hoods securable over opposite windows, one hood having an artificial lighting means within it and the other having a view-opening, substantially as described.

10. A developing-tray, having opposite non-actinic windows, means for securing a plate-holder to the tray and transferring the plate therefrom to the tray without exposing it, means for introducing and discharging the various liquids for the treatment of the plate, a hood attachable to the tray to cover one window, and an electric lamp within said hood, substantially as described.

11. A developing-tray, having windows upon opposite sides closed by non-actinic observation-plates, one of said plates being mounted as a slide to permit the introduction of a negative, clamps for temporarily securing a plate-holder to this side of the tray and in registry with the window-opening, removable opaque covers for the windows, and a tank having a valved connection with the plate-holding chamber, whereby the proper liquids may be introduced and discharged for treating the plate, substantially as described.

12. A developing-tray, having a plurality of chambers, one adapted to receive the plate to be treated and having windows closed by non-actinic plates, one of said plates being mounted to slide to permit the introduction of the negative or photographic plate, clamps adapted to temporarily secure a plate-holder to this side of the tray and covering the window thereof, the other chambers constituting liquid-holding tanks one at each end of the tray and having passages connecting with the plate receiving or developing chamber, and valves controlling the said passages, said tanks having each a filling-opening and cap therefor, substantially as described.

STUART B. MOORE.

Witnesses:

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H. L. REYNOLDS.