

G. F. FRALEY.
 PHOTOGRAPHIC PLATE DEVELOPING MACHINE.

APPLICATION FILED APR. 28, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

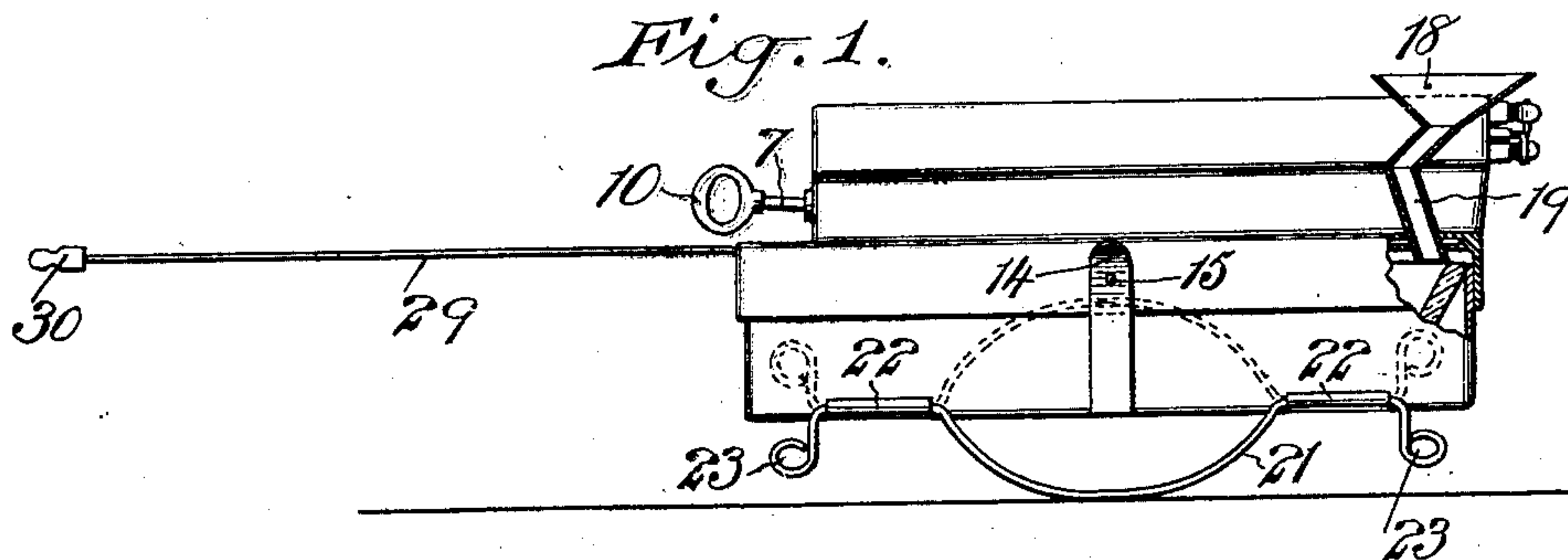


Fig. 2.

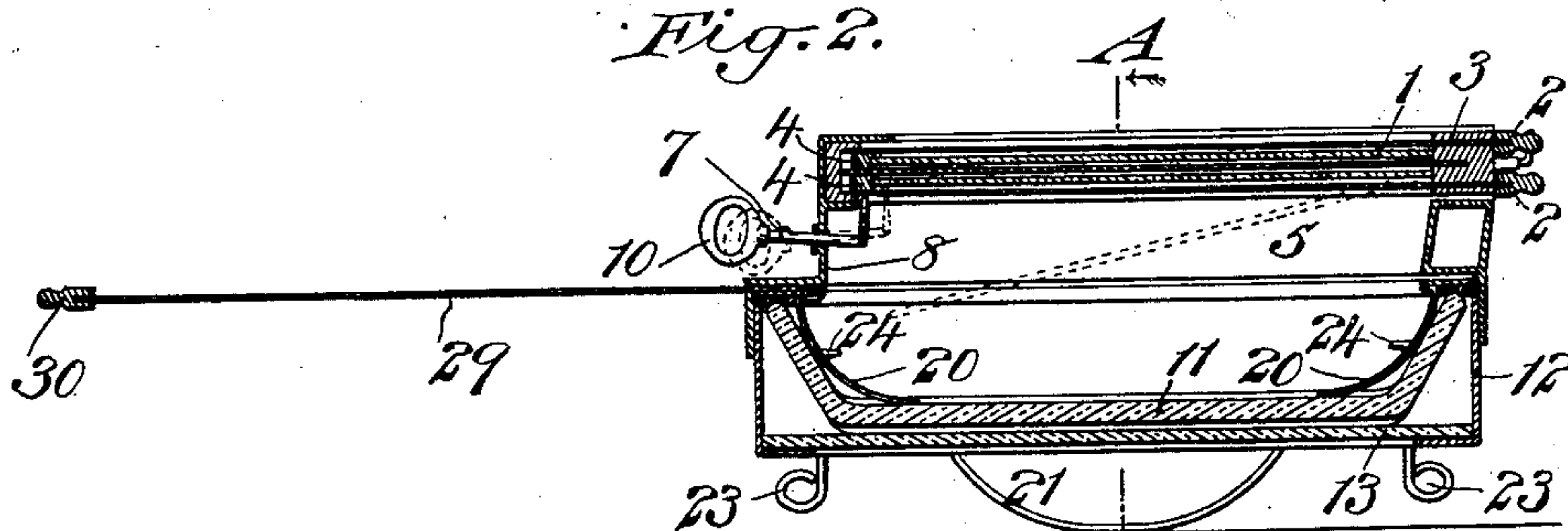


Fig. 3.

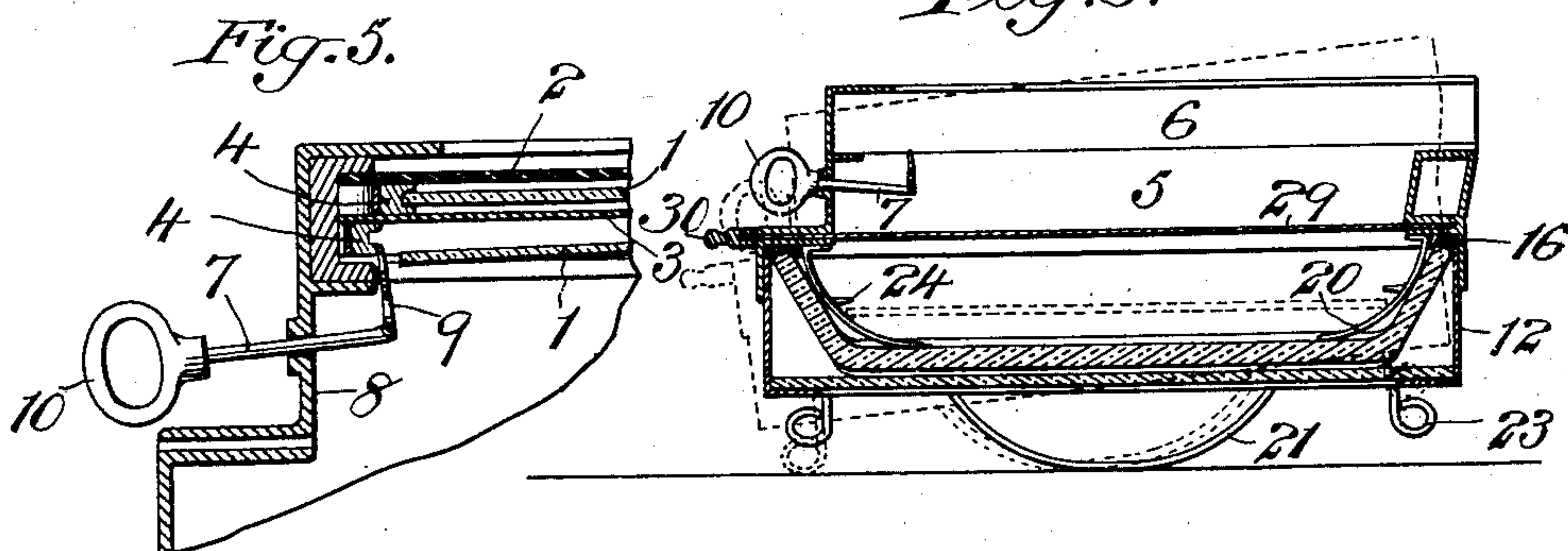
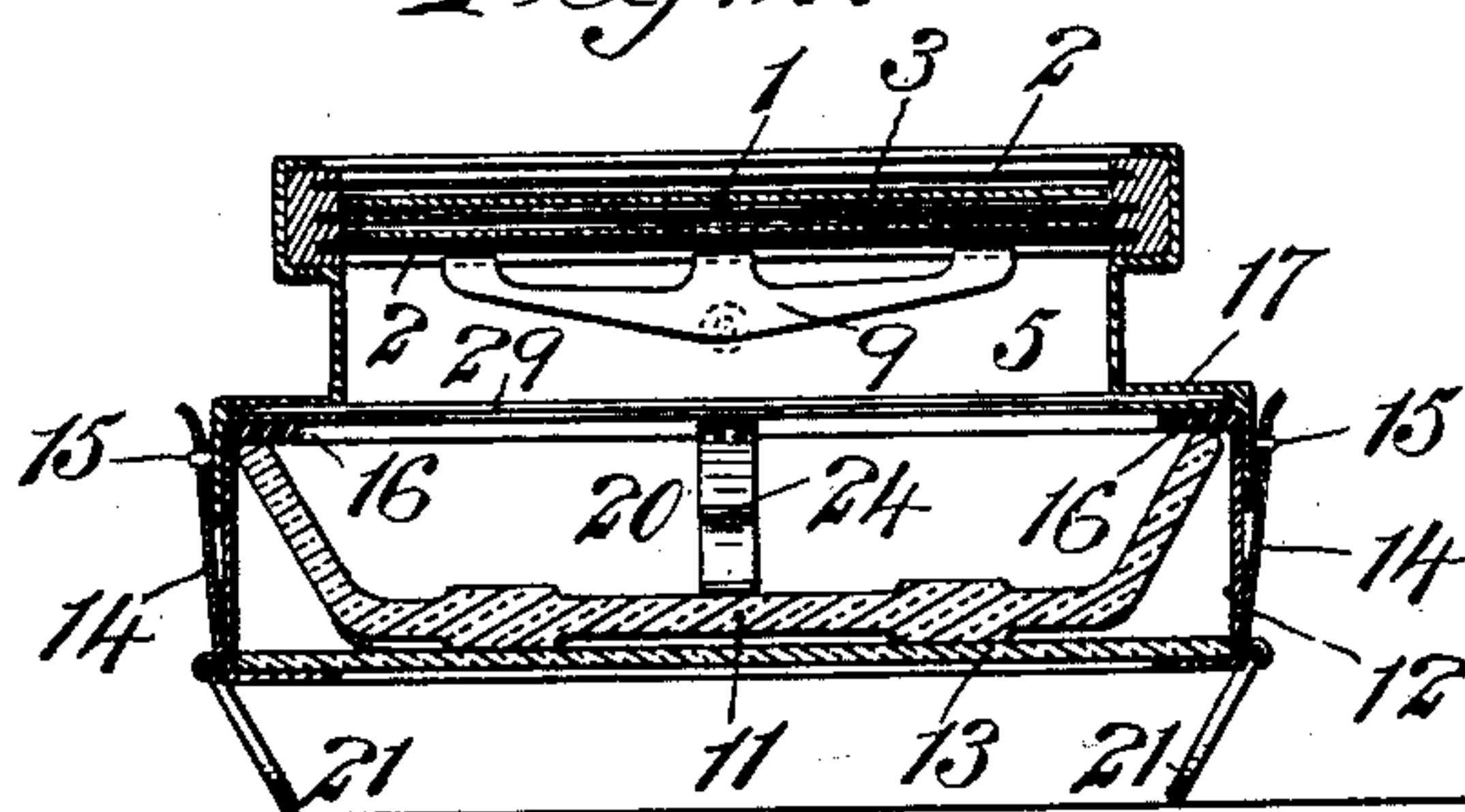


Fig. 4.



Witnesses:

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Inventor:

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NO MODEL.

2 SHEETS—SHEET 2.

Fig. 6.

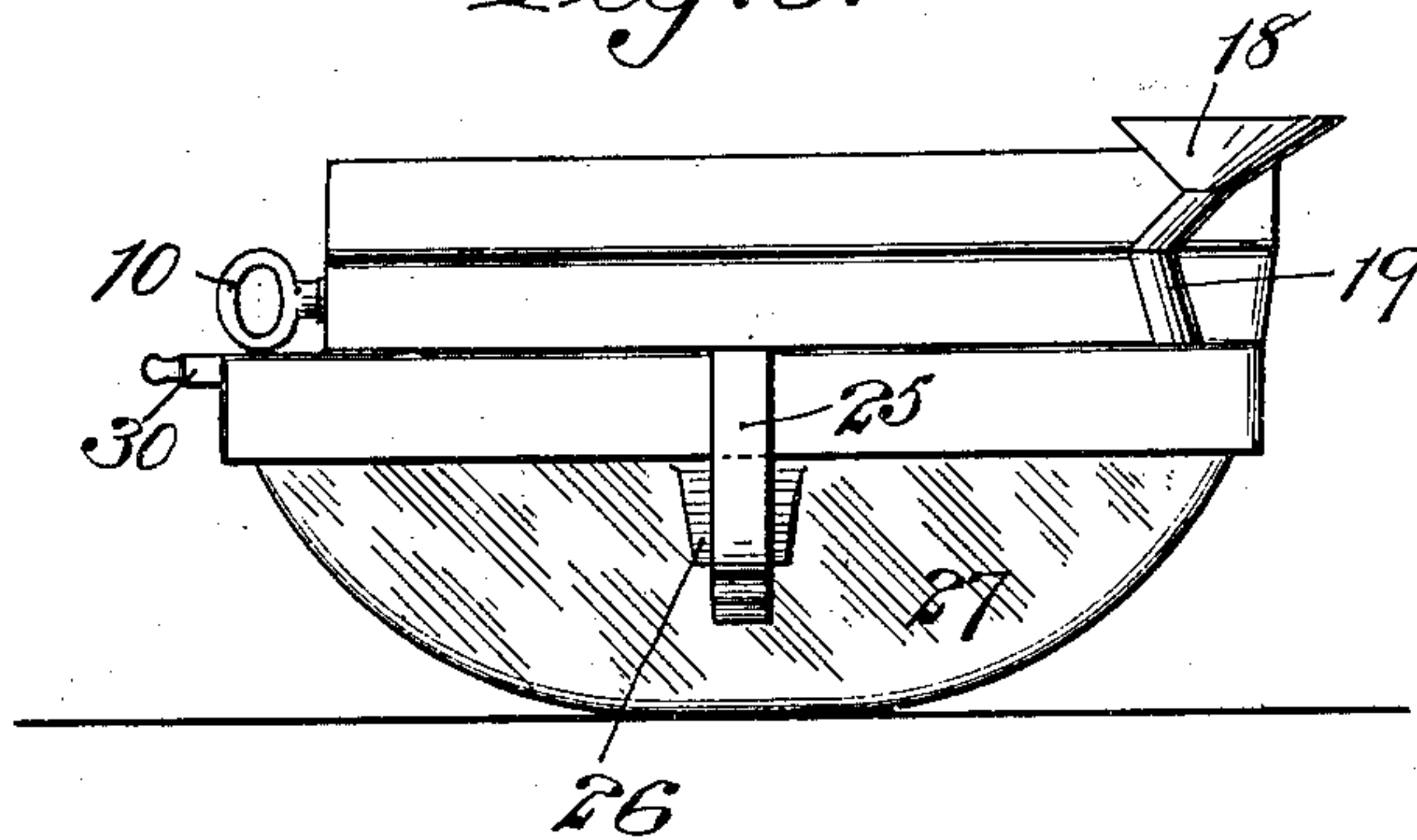


Fig. 7.

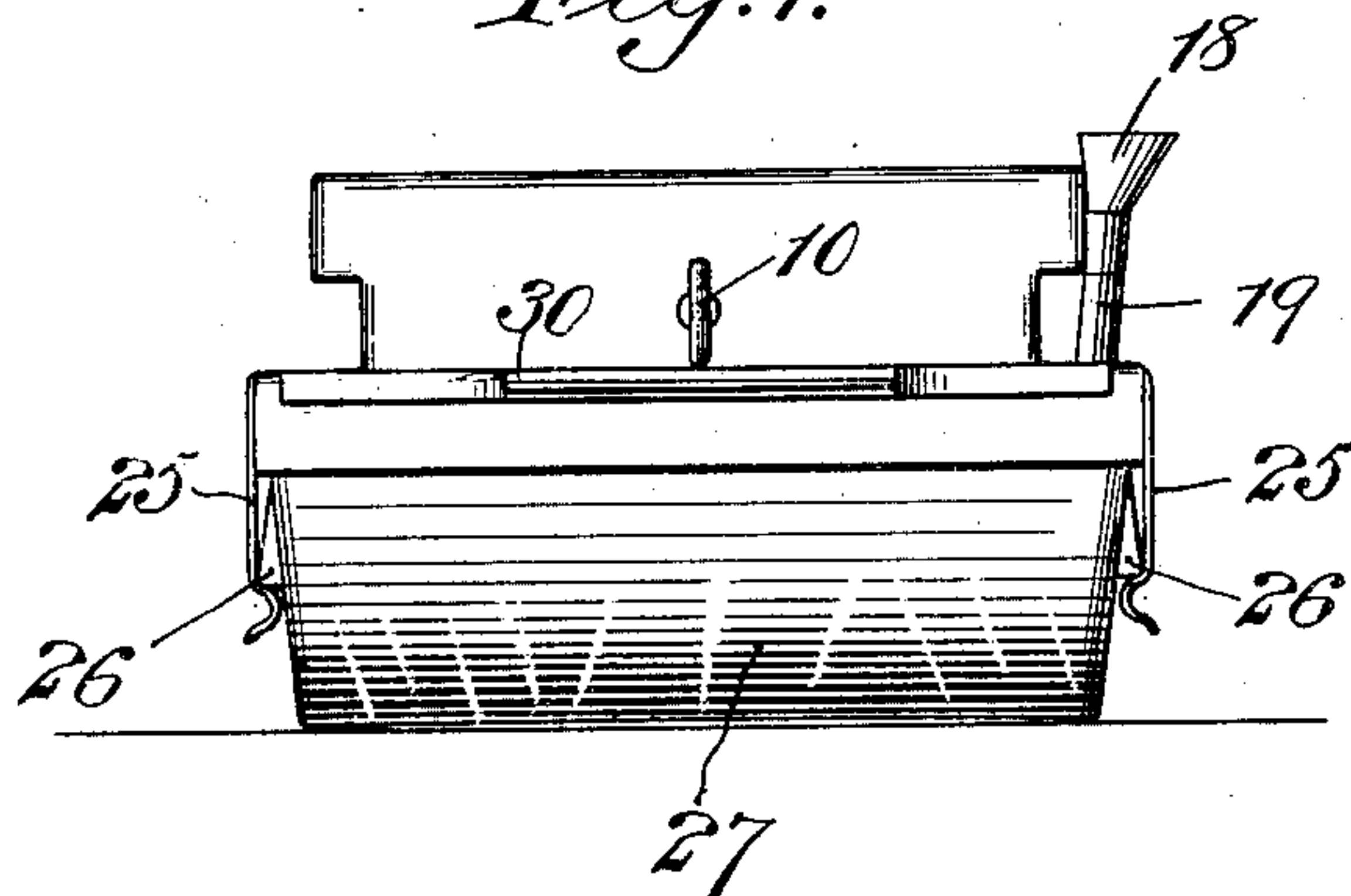
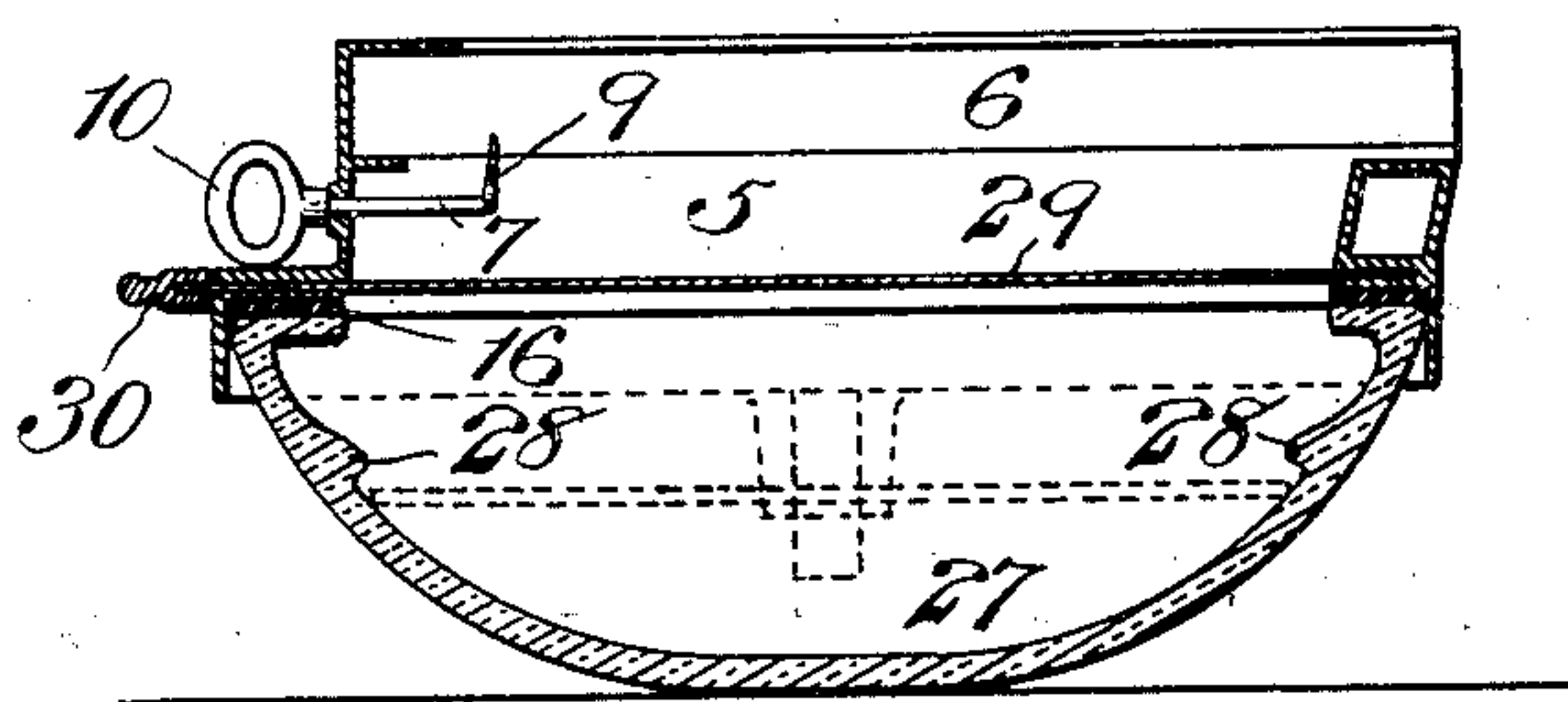


Fig. 8.



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UNITED STATES PATENT OFFICE.

GASSNER F. FRALEY, OF NEW YORK, N. Y., ASSIGNOR TO PATRICK H. BETTMAN, OF CHICAGO, ILLINOIS.

PHOTOGRAPHIC-PLATE-DEVELOPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 734,693, dated July 28, 1903.

Application filed April 28, 1903. Serial No. 154,614. (No model.)

To all whom it may concern:

Be it known that I, GASSNER F. FRALEY, a citizen of the United States, and a resident of the borough of Manhattan, in the city and State of New York, have invented a new and useful Improvement in Photographic-Plate-Developing Machines, of which the following is a specification.

My invention relates to an improvement in photographic - plate - developing machines, and has more particularly for its object to provide a new machine in which photographic plates may be developed by daylight, the plate being effectually protected from contact with the light while being treated.

A further object is to provide certain improvements in the construction, form, and arrangement of the several parts, whereby the plate may be readily removed from its holder without exposing it to the light and permitted to drop into the tray containing the developing solution.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents the machine in side elevation, one corner of the same being broken away to more clearly show the means for inserting and removing the liquid baths. Fig. 2 is a longitudinal vertical section through the machine, the plate-releasing device being shown in one position in full lines and in another position in dotted lines, and one of the plates being shown in full lines in its normal position within its holder and in dotted lines about to fall into the tray. Fig. 3 is a longitudinal vertical section with the plate-holder removed, the machine being shown in one of its rocking positions in dotted lines. Fig. 4 is a transverse vertical section taken in the plane of the line A A of Fig. 2 looking in the direction of the arrows. Fig. 5 is an enlarged detail sectional view showing more clearly the device for releasing the plate from its holder. Fig. 6 is a view in side elevation of a modified form of machine in which the use of a casing for the tray is obviated. Fig. 7 is an end view of the form

shown in Fig. 6, and Fig. 8 is a longitudinal vertical section through the same.

The plate-holder shown herein is one fitted to hold two plates, and may be of any well-known and approved form.

The plates are denoted by 1, the slides which protect the plates by 2, and the partition between the plates by 3. The spring-actuated end rails of the holder are denoted by 4 and are fitted to engage one edge of the plate for retaining it within the holder.

The plate-holder-receiving casing is denoted by 5, and guides 6 are formed in its top for receiving and removably retaining the plate-holder in position within the casing. The top of the casing is left open, as shown.

The means which I have shown for releasing the plate from its holder to permit it to drop into the tray to be hereinafter described is constructed and arranged as follows: A handle-bar 7 is fitted to slide in the end wall 8 of the casing 5 below the plate-holder, which handle-bar is provided with a transverse head 9 within the casing and a handle 10 exterior to the casing. When the lower slide 2 of the plate-holder is removed, the head 9 of the plate-releasing device may be swung up into position to engage the face of the spring-actuated rail 4. The device may then be pulled outwardly, thereby pulling the rail 4 away from the edge of the plate and permitting the plate to drop from the plate-holder.

In the form shown in Figs. 1 to 5, inclusive, I have shown a machine capable of receiving a tray 11 of standard form. In the device shown in these figures the tray 11 is inserted into a tray-receiving casing 12, having a transparent non-actinic bottom 13. This casing 12 is removably secured to the plate-holder-receiving casing 5 in the present instance by spring-catches 14, projecting from the casing 12 and engaging pins 15, projecting from the casing 5. A washer 16 is interposed between the horizontal wall 17 of the casing 5 and the top of the tray 11 for preventing the liquid within the tray from spilling over the sides thereof.

The casing 5 is provided with a funnel 18

and an angular tube 19, opening into the casing 12 in position to permit the tray to be filled and emptied therethrough. By making the tube 19 angular the admission of light through the said tube is prevented.

The interior of the casing 5 is provided with two curved springs 20, depending from the horizontal portion 17 of the casing into the interior of the tray 11 when the parts are assembled. As the plate 1 drops from its plate-holder into the tray, it will fall onto these springs 20, which springs serve to space the plate a distance above the bottom of the tray for permitting a free access of the fluid within the tray to the sensitive surface of the plate.

The tray may be rocked as follows: The tray-receiving casing 12 is provided with two folding wire rockers 21, one upon each side of the casing, hinged at 22 to the casing. The ends 23 of each rocker are bent downwardly to serve as stops for limiting the rocking movement of the tray. When not in use, the rockers may be folded up against the sides of the tray, as shown in Fig. 1.

To prevent the tray from sliding longitudinally as the tray is rocked, I provide the springs 20 with projections 24, which will engage the end edges of the plate. These projections 24 are far enough apart to permit the plate to drop into engagement with the springs 20 below the said projections.

In the form shown in Figs. 6 to 8, inclusive, I have represented a structure in which the use of a casing for the tray is obviated, the tray itself having a curved bottom to permit it to be rocked. The said tray is preferably made of some non-actinic material—such, for instance, as ruby glass. In this form the tray is removably secured to the plate-holder-receiving casing 5 by means of spring-latches 25, depending from the casing, which engage projections 26, formed on the exterior side walls of the tray. In this instance the tray is denoted by 27, and instead of providing the depending springs 20, as hereinabove set forth, the plate will be permitted to rest at its ends in engagement with the curved bottom of the tray. In this modified form the plate is held against any undue sliding movement when the tray is rocked by means of projections 28, formed in the bottom of the tray above the points where the plate rests. After the plate has been released and been permitted to fall into the tray the top of the tray may be closed by means of a transparent non-actinic slide 29 which has a sliding engagement with the horizontal portion 17 of the casing 5. This slide 29 is provided with a suitable handle 30, exterior to the casing for use in inserting and removing the slide. After the slide has been inserted into position to cover the top of the tray the plate-holder may be removed without danger of exposing the plate to the light. After the plate-holder has been removed and the devel-

oper has been poured into the tray the developing of the plate may be watched through the said transparent slide 29. After the plate has been developed to the required degree the developer may be poured out of the tray through the tube 19 and funnel 18. The plate may then be washed by the pouring of water into the tray. After the plate has been thoroughly washed and the water removed from the tray the fixing solution may then be poured into the tray. After the treatment of the plate has been completed the fixing solution may be poured from the tray and the tray removed from its engagement with the plate-holder-receiving casing for permitting the removal of the plate.

The device constructed as herein described is extremely simple and is one in which the plate may be developed without the aid of a dark room. Furthermore, the development of the plate may be controlled by the operator, the plate being at all times under observation through the transparent slide 29 after the plate has been dropped into the tray and the plate-holder removed.

It is evident that changes might be resorted to in the form, construction, and arrangement of the several parts without departing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the structure herein set forth; but

What I claim is—

1. In a developing-machine, a casing for receiving the plate-holder, a rocking tray, and means for releasing the plate from the holder to permit it to drop into the said tray.

2. In a developing-machine, a casing for receiving the plate-holder, a rocking tray, means for releasing the plate from its holder to permit it to drop into the tray and means for limiting the sliding movement of the plate as the tray is rocked.

3. In a developing-machine, a casing for receiving the plate-holder, a tray, a casing for receiving the tray, means for removably securing the two casings together and means for releasing the plate from its holder to permit it to drop into the said tray.

4. In a developing-machine, a casing for receiving the plate-holder, a tray, means for releasing the plate from its holder to permit it to drop into the tray, means for removably securing the tray to the casing and an interposed washer forming a water-tight joint between the top of the tray and the said casing.

5. In a developing-machine, a casing for receiving the plate-holder, a tray, means for releasing the plate from the holder to permit it to drop into the tray and means carried by the casing for supporting the plate spaced from the bottom of the tray.

6. In a developing-machine, a casing for receiving the plate-holder, a rocking tray, means for releasing the plate from its holder to permit it to drop into the tray and means carried by the casing for supporting the plate within

the tray and limiting its sliding movement as the tray is rocked.

5 7. In a developing-machine, a casing for receiving a plate-holder, a tray, a casing for receiving the tray, means for releasing the plate from its holder to permit it to drop into the said tray and rocking supports carried by the tray-receiving casing fitted to be swung into and out of position for use.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 8th day of April, 1903.

GASSNER F. FRALEY.

Witnesses:

FREDK. HAYNES,
GEORGE BARRY, Jr.