No. 884,922. PATENTED APR. 14, 1908.

A. C. HAYDEN.

DEVELOPING APPARATUS.

APPLICATION FILED MAR. 15, 1907.

Fig. 1.

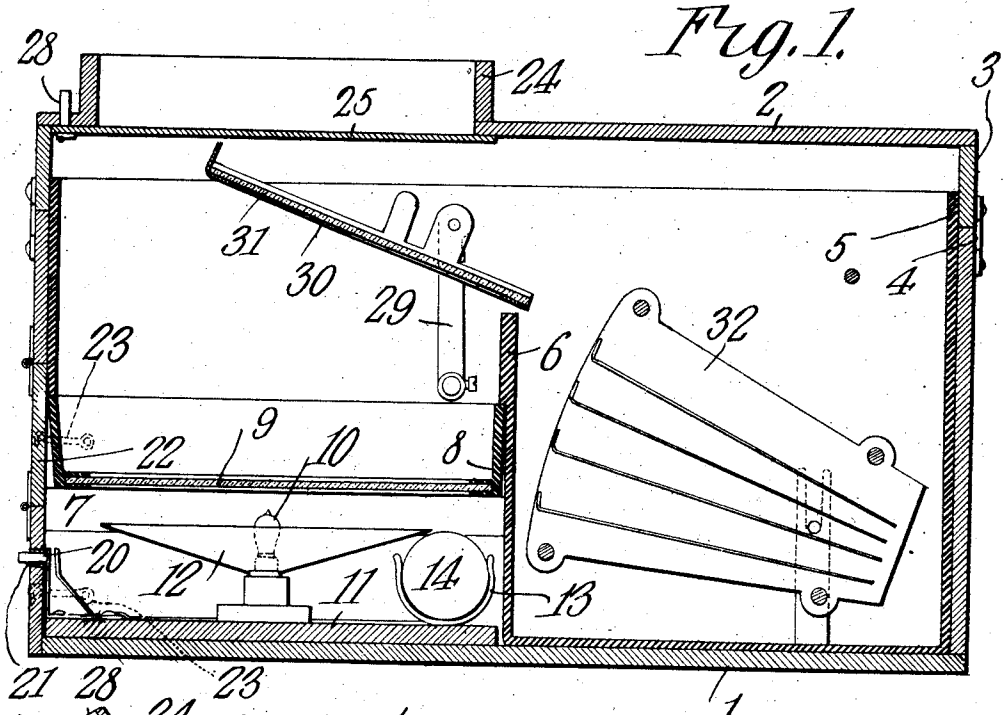

Fig. 3.

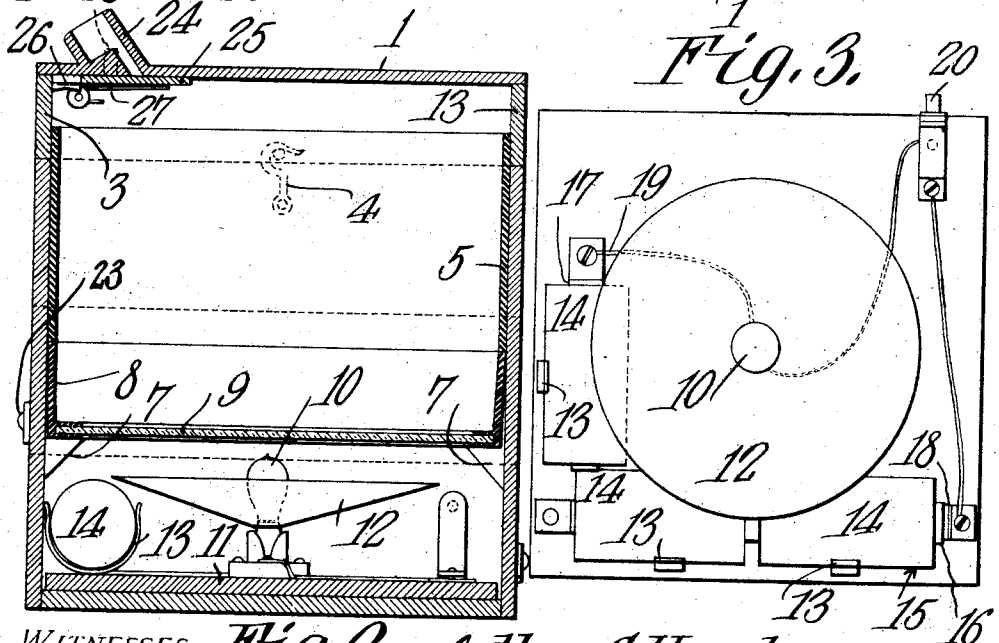

Fig. 2.

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DEVELOPING APPARATUS.

No. 884,922. Specification of Letters Patent. Patented April 14, 1908.

Application filed March 15, 1907. Serial No. 362,548.

To all whom it may concern:

Be it known that I, ARTHUR C. HAYDEN, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented a new and useful Developing Apparatus, of which the following is a specification.

This invention relates to apparatus for developing photographic plates and is more particularly designed as an improvement upon the apparatus described and claimed by me in an application for United States Letters-Patent filed on Feb. 2, 1906, Serial No. 299,205. It has been found in apparatus of this character, that considerable difficulty is experienced in cleaning the compartment containing the developing fluid, because of its inaccessibility.

One of the objects of the present invention is to provide the developing compartment with a removable receptacle preferably in the form of a tray which can be very easily cleaned and placed in or removed from position.

Another object of this invention is to dispose the lamp and its batteries entirely within the casing of the apparatus and below the developing bath, so that the device will be rendered less bulky and more convenient.

A still further object is to provide simple and efficient means for normally closing the plate guideway.

With these and other objects in view, the invention consists in certain novel features of construction and combinations of parts, which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a longitudinal section through the apparatus embodying the present improvements. Fig. 2 is a transverse section through the apparatus; and Fig. 3 is a plan view of the lamp and its battery removed.

Referring to the figures by characters of reference, 1 is a casing constructed of any suitable material, and this casing is provided with a closure 2 having flanges 3 at the sides thereof which rest upon the casing and are adapted to be locked in position thereon by means of hooks 4 or in any other preferred manner. The casing is formed with a lining 5 of rubber or other material which will resist the action of the fluids used in the development and fixing of the photographic plates. This lining extends upward from the walls of the casing and is designed to project between the flanges of the closure 2 when said closure is locked in position upon the casing. The lining 5 is formed with a transverse partition 6 of the same material, and the fixing bath is located between this partition and one end of the casing. That portion of the casing between the partition and the other end thereof constitutes the developing bath. The lining 5 does not extend to the bottom of this portion of the casing, but instead terminates at points above supporting cleats 7 which extend longitudinally along the side walls of the casing. These cleats are designed to support a tray 8 formed of a material similar to that of which the lining is made, the bottom of the tray being made of ruby glass 9. This tray is mounted to slide longitudinally upon the cleats 7, and when in normal position the walls of the tray lie close against the bottom edges of the adjoining portion of the lining 5 so that the tray, the partition 6 and the adjoining portions of the lining constitute the developing bath. A compartment is formed between the tray 8 and the bottom of the casing, and is designed to receive the lamp which is used in connection with the apparatus. As shown in the drawings, this lamp, which has been indicated at 10, is mounted upon a sliding base 11 which is disposed to fit between the side walls of the casing, and a suitable reflector 12 surrounds the lamp for the purpose of directing the rays of light upward toward the glass 9. Mounted upon the base is a plurality of metal clips 13, and each of these clips embraces and retains a dry cell 14 preferably formed with a zinc jacket 15, while the core 16 of the cell extends from the carbon element of the cell. Any desired number of these cells may be employed, it only being necessary that the core of each cell contact with the jacket of the adjoining cell while a contact 17 bears against the jacket of one of the end cells and another contact 18 bears against the core of the other end cell. Wires 19 connect the lamp with one of the contacts, and with a circuit closer 20 preferably in the form of a push button, and this circuit closer is also electrically connected with the other contact 18. The base 11 is placed in position within the casing with the push button 20 outermost, and this button is designed to project through an aperture 21 formed in a door 22

made up of hingedly connected leaves and arranged at one end of the casing. This door is provided with a series of fasteners 23 preferably in the form of hooks, one fastener being provided for each leaf. The door is designed when open to permit the tray 8 to be withdrawn from the cleats 7 and it is of course apparent that the lamp and its supporting slide or base can also be withdrawn from the casing when the door is open.

Formed upon the closure 2 directly above the developing bath is a guide-way 24 which is inclined as shown in Fig. 2, and is designed to receive a plate-holder containing the plate to be discharged into the developing bath. Heretofore, guide-ways of this character have been provided with closures for excluding the light rays, but it has usually been necessary to manually close the same as well as open them, and as a result the guide-way is at times inadvertently left open with the result that plates become light struck subsequent to their insertion in the casing. To overcome this defect, a closure has been provided which consists of a strip or leaf 25 extending throughout the length of the guide-way and connected to the lower surface of the closure in any preferred manner, as by means of a fabric hinge 26. A spring 27 is mounted upon the lower face of the closure so as to exert a constant upward pressure upon the strip and hold the same normally in contact with the closure, so as to prevent the entrance of light through the guide-way. A pin 28 is secured to one end of the strip, preferably directly above the spring 27, and this pin projects from an opening in the top of the casing so that by depressing the pin the closure strip can be swung downward to open the guide-way, and at the same time to deflect the inserted plate laterally so that the same will be accurately directed into the bath. In view of the spring 27 which is provided it is obvious that the strip or leaf 25 will promptly close automatically as soon as the hand is removed from pin 28 thereby obviating the danger of leaving the strip or leaf open subsequent to the insertion of the plate.

It is, of course, understood that this apparatus is provided with suitable means for lifting the plates from the developing bath and discharging them into the fixing bath, and in the drawings has been shown a rock arm 29 on which is pivotally mounted a carrier 30, the bottom of which is preferably formed of a ruby glass 31. This carrier may be actuated by any suitable means, not shown. A suitable arrangement of pockets 32 is formed within the fixing bath, and these pockets may be shifted so as to successively receive plates discharged into the fixing bath from the carrier. The carrier and pockets constitute no part of the present invention, and are similar to those described and claimed by me in my application hereinbefore mentioned.

It will be seen that by constructing the apparatus in the improved manner herein described, there is absolutely no danger of plates becoming light struck after insertion into the developing bath, because the closure 25 automatically returns to its normal position as soon as pressure is removed from the pin 28. Moreover, by utilizing a removable developing tray which coöperates with the inner lining of the casing to form a developing bath, said bath can be very easily cleaned whenever desired simply by unfastening the door 22 and swinging it outward so as to permit the withdrawal of the tray 8.

Another feature of importance in the present invention is the disposition of the lamp and its battery directly below the developing bath. By disposing the parts in this manner, the apparatus is rendered very compact and there is little likelihood of their becoming injured, as when disposed on the exterior of the casing. By forming the battery of a plurality of cells which are not wired together, but are in direct contact, one or more of the cells can be easily removed and replaced without the necessity of utilizing screws, wires, etc. to secure the proper electrical connections.

What is claimed is:

1. In an apparatus of the character described the combination with a casing having a developing bath therein, and a plate inlet opening; of a plate deflector, yieldable means for holding said deflector normally in position to close the inlet opening, and means extending from said deflector for actuating the same to open the inlet.

2. In an apparatus of the character described, the combination with a casing having an inlet opening and a lining within the casing; of a removable receptacle insertible into the casing and below the lining.

3. In an apparatus of the character described, the combination with a casing having an inlet opening and a lining within the casing; of a receptacle removably mounted within the casing and having its walls disposed below and flush with the inner surface of the lining.

4. In an apparatus of the character described, the combination with a casing having an inlet opening and a lining within the casing; of a receptacle removably mounted within the casing and having its walls disposed below and flush with the inner surface of the lining, said receptacle having a translucent bottom, and a lamp removably mounted within the casing and below the receptacle.

5. In an apparatus of the character described, the combination with a casing having a plate inlet, and an end closure on the casing; of a receptacle removably mounted within the casing and below the inlet, said receptacle having a translucent bottom, a removable slide within the casing and below the receptacle, and a lamp carried by said slide.

6. In an apparatus of the character described, the combination with a casing having a plate inlet, and an end closure on the casing; of a receptacle removably mounted within the casing and below the inlet, said receptacle having a translucent bottom, a removable slide within the casing and below the receptacle, a lamp and a source of energy carried by the slide, and movable therewith, and a circuit closer mounted upon the slide and normally extended through the closure.

7. In an apparatus of the character described, the combination with a casing having a plate inlet and a lining within the casing; of supporting devices within the casing and below the lining, a receptacle insertible between the supporting devices and the lining, said receptacle having a translucent bottom, and a lamp insertible between the receptacle and the bottom of the casing.

8. The combination with a casing having a sectional closure at one end thereof and separate means for securing the closure sections; of a receptacle insertible through the closure opening and constituting a developing bath, said receptacle having a translucent bottom, and a lamp insertible through the closure opening and between the receptacle and bottom of the casing, and means movable with the lamp and normally projecting through the closure for controlling the light from the lamp.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ARTHUR C. HAYDEN.

Witnesses:

JAS. M. WALKER,

J. ROSS COLHOUN.