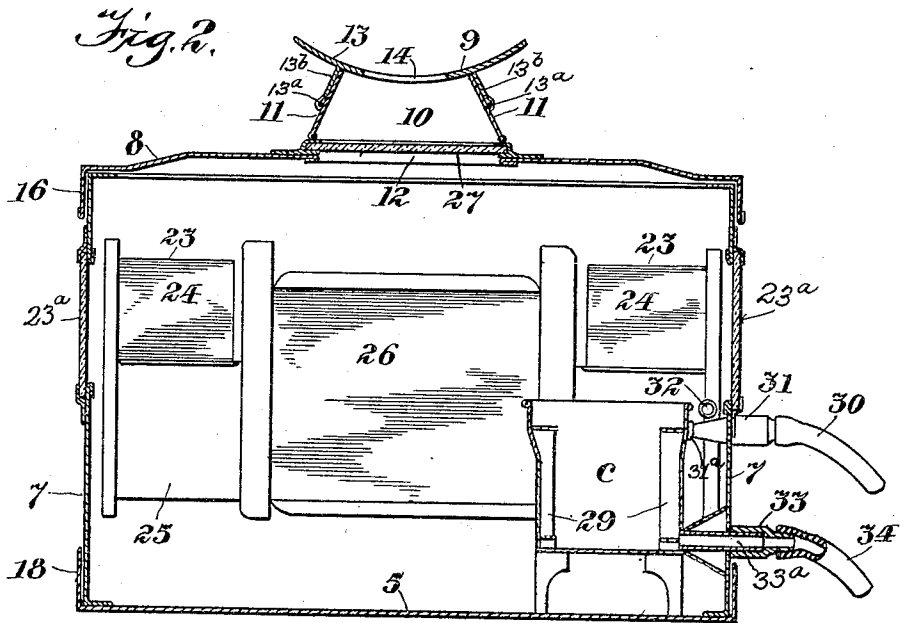
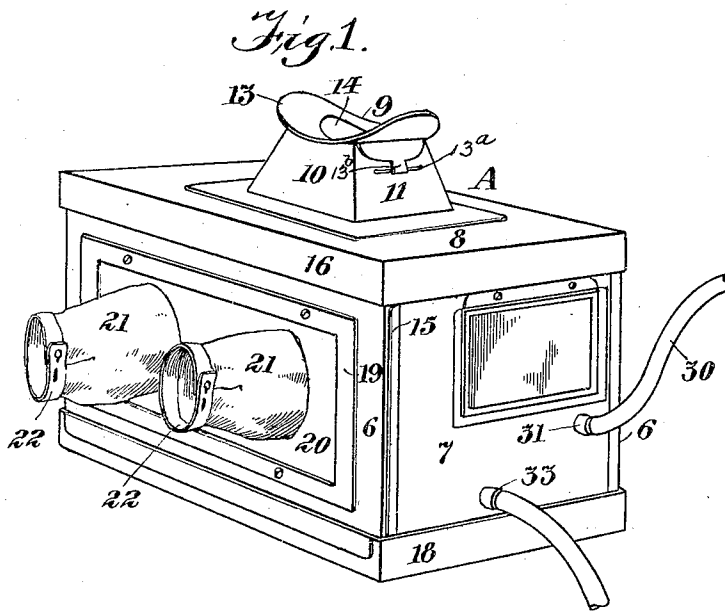


J. J. KELLY & J. F. TREERDELL.
 PHOTOGRAPHIC APPARATUS.
 APPLICATION FILED JAN. 15, 1906.

937,309.

Patented Oct. 19, 1909.

3 SHEETS—SHEET 1.



Witnesses
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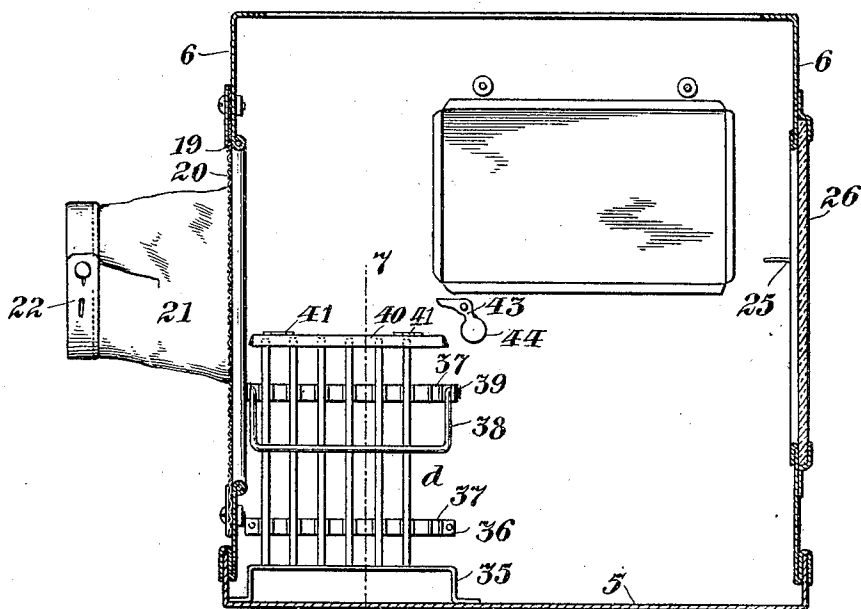


Fig. 6.

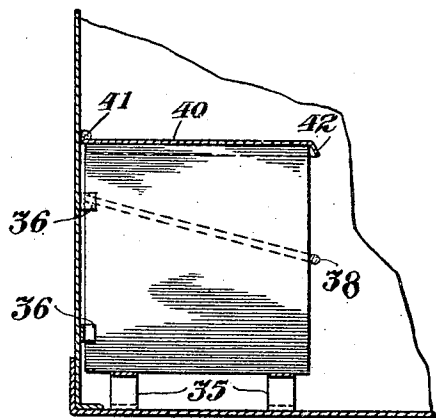


Fig. 7.

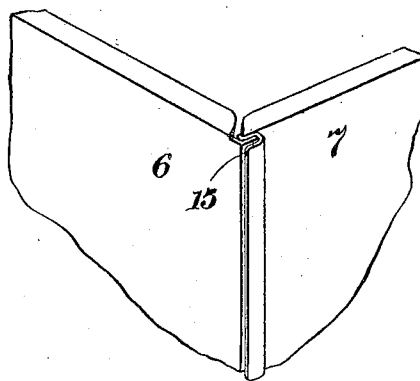


Fig. 8.

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3 SHEETS—SHEET 3.

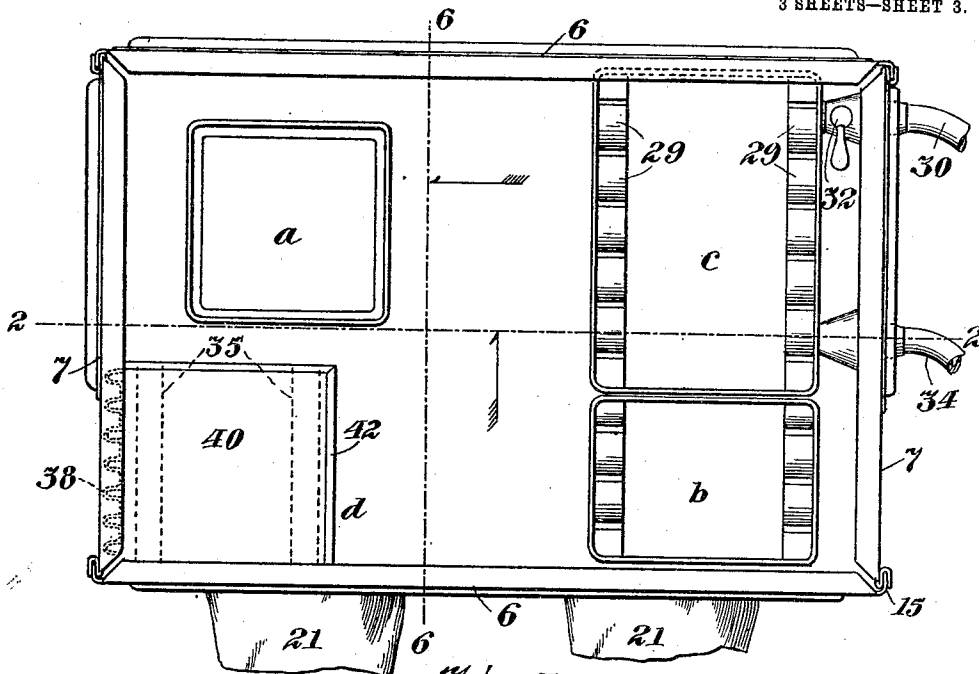


Fig. 4.

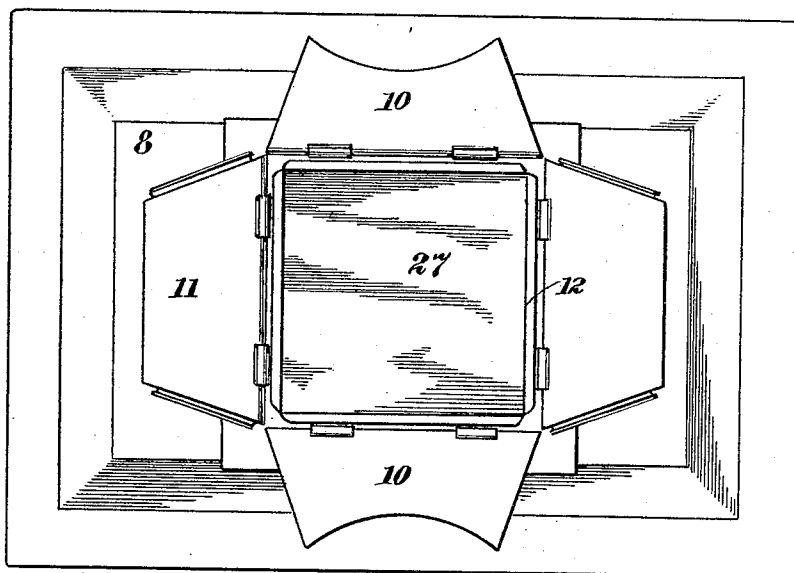


Fig. 5.

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UNITED STATES PATENT OFFICE.

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PHOTOGRAPHIC APPARATUS.

937,309.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed January 15, 1906. Serial No. 296,033.

To all whom it may concern:

Be it known that we, JOHN J. KELLY and JOSEPH F. TREERDELL, both citizens of the United States, and residents of New York city, in the county of New York and State of New York, and Jersey City, county of Hudson, New Jersey, respectively, have invented certain novel and useful Improvements in Photographic Apparatus, of which the following is a specification.

Our invention relates to photographic apparatus and has particular application to a portable structure of the class described adapted especially for use in developing, fixing and washing plates and loading cameras.

In the present instance we have particularly in view as an object the provision of a simple, convenient portable structure capable of being dismantled and packed into a very small space, the frame or box of said structure when in its erected position being capable of containing all the essentials required in the operation of completely developing a plate, such as the developing-tray, the wash-tank, the receptacle for the fixing bath and a drying-rack. We have also in contemplation providing means for introducing and circulating a body of water through the wash-tank so that a fresh supply of running fluid is at all times available in said tank for the purpose of thoroughly washing and cleaning the plates, thereby obviating the possibility of "spotting", which is liable to occur when a large number of plates are washed in the ordinary manner.

With the above recited objects and others of a similar nature in view our invention consists in the construction, combination and arrangement of parts set forth in and falling within the scope of the appended claims.

While we have herein shown and described by way of illustration one embodiment of our invention, it is of course to be understood that it is susceptible to modification and changes without exceeding the scope of the claims.

In the accompanying drawings like characters of reference indicate like parts in all the views.

Figure 1 is a perspective view of an assembled or erected structure embracing our invention; Fig. 2 is a central, vertical, longitudinal

sectional view taken through the apparatus on the line 2—2 of Fig. 4; Fig. 3 is a detail view of the joint at the corner of the box or frame showing the manner of joining the edges; Fig. 4 is a top plan view of the device with the cover removed; Fig. 5 is a similar view with the cover applied, the hinged plates of the observation opening being thrown back; Fig. 6 is a vertical sectional view of the interior of the box taken on the line 6—6 of Fig. 4, showing the manner of erecting therein the drying rack; Fig. 7 is a view taken on the line 7—7 of Fig. 6 showing the manner of retaining a plate within the rack.

Referring now to the accompanying drawings in detail, the letter A indicates the box or frame as an entirety such structure comprising the bottom portion 5, the longitudinal side members 6, the transverse end members 7 and the top 8, said top portion having erected thereon an observation shield indicated as a whole by 9, said shield comprising the hinged members 10, 10 and 11, 11 adapted to be folded down in the manner indicated in Fig. 5 to permit more light to enter through the observation opening 12. In case it is desired to shut off a portion of the light, the plates or covers are thrown up, as shown in Fig. 1, and the small curved shield 13 applied to the same in the manner shown, that is to say, the sides 11 are each formed with a small projection 13^a with which the tongues 13^b at the sides of the cap engage, said shield having an opening 14 therein through which the process of development of the plates may be observed. The side and end members 6 and 7 are connected together by being joined in the manner indicated at 15 in Fig. 3, a lap joint being formed between the edges of the sides and ends so that the latter may be fitted one within the other. The top member 8 may be applied to the assembled sides and ends in the manner shown in Figs. 1 and 2, the edge portions 16 of the cover being flanged and adapted to fit over the top edges of the sides and ends. The boxlike member formed by the sides and end portions is also assembled upon the bottom 5 in the manner shown in Fig. 2, said bottom portion having a flange 18 extending around the same, within the lines of which flange the bottom portions of the sides and ends fit. The front of the box, which comprises one of the longitudinal

sides 6, is cut away as at 19. Such cut-away portion is covered with a wall or facing of some flexible dark material, such as canvas or the like, as indicated at 20, such facing
 5 carrying flexible sleeves 21, 21, through which the hands of the operator may be introduced into the interior of the box to conduct the necessary work. Each of these sleeve members 21 is provided with an adjustable cuff 22 adapted to be snugly secured
 10 to the forearm or wrist of the operator in such a manner that the ingress of light to the box is prevented, the adjustment of the cuffs being for the purpose of accommodating the same to arms of different sizes. Each
 15 of the transverse ends 7 is provided with a window 23^a preferably covered with ruby glass 24^a to prevent white light entering and injuring the plates.

20 At the back of the box or casing or the longitudinal side opposite that containing the sleeves 21, we provide a relatively large window 26 covered with a suitable colored glass. Such side is also provided with two
 25 windows 23, 23 preferably covered with ruby glass to prevent white light entering and ruining the plates, and in order to adjust the amount of light permitted to pass through the windows each of the latter is
 30 preferably covered on the interior by a sliding shade or blind 25 which is under control of the operator. A sheet or piece of suitable translucent material 27 is placed over the observation opening 28 in the top 8 of
 35 the casing or box, said translucent sheet providing means through which the progress of the operation may be observed.

Within the assembled structure just described we place the appurtenances ordinarily used in the development of plates,
 40 films and the like, these comprising the developing-tray *a*, the fixing-bath receptacle *b*, the wash-tank *c* and the drying rack *d*. The developing tray and fixing receptacle
 45 may be of any suitable nature as may also be the wash-tank and the drying-rack. But, in the present instance, we have shown these two latter appurtenances of a particular construction designed especially for use
 50 in connection with this apparatus.

Referring first to the wash-tank *c*, the latter preferably comprises a receptacle having vertically arranged strips 29, forming
 55 racks by which the plates are retained against displacement. If desired, the fixing-bath receptacle may be provided with such strips or similar racks for maintaining the plates out of contact with each other while immersed therein. As will be seen by
 60 reference to Figs. 2 and 4, the wash-tank *c* is placed adjacent to one of the walls of the casing or boxing of the device and in order to have fresh water circulating at all times through the tank, we provide an inlet pipe
 65 30 threaded onto the nipple 31, engaging

with the small tubular part 31^a communicating with the tank and extending therefrom through an opening in one of the sides of the boxing and having on the interior thereof
 70 of a valve 32 through the medium of which the flow may be controlled by the operator, the outlet of the valve emptying directly into the tank at a point preferably near the upper edge thereof. The outlet for the
 75 water from the tank is in the nature of a small tube 33^a communicating with the tank and extending therefrom through the wall of the box, and at the outside of the box this tube is designed to be connected with
 80 the nipple 33 which in turn is to be coupled with the tubing 34 leading to a point of discharge. By having inlet and outlet pipes arranged in the manner stated a continuous circulation of clean water is had through the
 85 tank and the rapid and efficacious washing of the plates is accomplished.

The inlet pipe, it will of course be understood, is connected with any suitable source of supply, such pipe being preferably in the nature of a rubber tube or hose, while the
 90 outlet pipe also extends to a suitable point of discharge. To remove the wash tank from the box when it is desired to collapse the latter it is only necessary to disengage
 95 the pipes 30, 34 with their respective nipples 31, 33 from the small tubular parts 31^a, 33^a and pull the tank away from the wall.

In Figs. 6 and 7 we have shown in detail our improved drying rack which may be installed at one end of the casing and is intended to receive a plurality of the plates so
 100 that the operation of developing, fixing and washing the plates may be uninterrupted and carried on with rapidity and convenience. This improved rack comprises one or more
 105 U-shaped brackets indicated at 35 in Figs. 6 and 7, said brackets being spaced apart to form a platform.

Suitably spaced apart, and secured to the wall of the boxing are the corrugated strips
 110 36, 36, adapted to receive the vertical edge of the plate in the manner indicated in Fig. 7, the grooves or corrugations 37 in such strips receiving the edge of the plate and holding
 115 the same against movement. In order to further secure the plate we provide a holder in the nature of a U-shaped bar or bail 38 pivoted at 39, so that such bar or bail may be swung upward over the top of the plates
 120 when not in use. After the plates have been assembled or arranged in the rack the bail may be swung downward in the manner indicated in the drawings so as to secure the outer edges of such plates and preventing
 125 the latter tilting from the rack. A cover or shield, as at 40, is hinged at 41 to the side of the frame above the line of the upper edge of the plates, said cover having a deflecting
 130 flange 42 so that any moisture or water scattered during the operation of washing and

handling the plates will not splash upon and spot the plates, which latter will be protected by the cover. A small latch, as at 43, having a weighted end 44 is provided for holding the covering and the locking bail in an elevated position when it is desired to have the rack open for the reception of the plates.

It will be noted that we have provided a construction of apparatus through means of which the operation of developing, washing and drying the plate may be accomplished and it will further be noted that our apparatus may be used for loading cameras in the daytime.

Having thus fully described our invention, what we claim and desire to secure by Letters Patent is:

1. An apparatus of the class described comprising a box member, a wash tank located therein adjacent to one wall of the box member, but having the side adjacent to the wall spaced apart from the latter, an inlet water pipe leading into the wash tank through the wall of the box, a valve for said pipe connection located between the wall of the tank and the wall of the box, and a water outlet pipe extending from the tank to the exterior of the box.

2. The combination with a box, of a wash tank arranged therein, means for conducting the wash fluid from outside the box to the tank, a valve carried by that portion of the conducting means lying within the box, and an outlet for the washing fluid from the tank.

3. An apparatus of the class described, comprising a collapsible box member having openings therein covered with suitable colored glass, sleeves connected to said box for the admission of the hands of the operator, and a collapsible shield formed of a plurality of hinged sections, and a top plate having an opening therein, such shield covering an observation opening arranged within the box.

4. An apparatus of the class described, comprising a box member having the sides and ends thereof connected by lapped joints, a removable top and bottom for said box, the entire structure forming a knock-down box, such box having openings in the sides thereof for the admission of the hands of the operator and having window openings provided with suitable colored material, a wash tank within the box and having means for holding the plates to be washed, a fluid inlet and a fluid outlet for the wash tank, means at the portion of the inlet within the tank for opening and closing the inlet, and means for developing, means for fixing, and means for drying plates within the box.

5. An apparatus of the class described, comprising a box member and a drying rack therein, said rack comprising a platform upon which the bottom edge of the plate is

designed to rest, means secured to a wall of the box for engaging the edge of a plate adjacent thereto, and means engaging with the outer edge of the plate for holding the same against movement.

6. An apparatus of the class described, comprising a boxing and a drying rack therein, said rack comprising a platform member upon which the plates are adapted to rest, means engaging with the vertical edges of the plates for holding the same against movement, and a shield or cover extending over the plates.

7. An apparatus of the class described, comprising a knock-down box having an observation opening in the top thereof covered with suitably colored material, a plurality of hinged members arranged about said observation opening and adapted to be swung into position to form a shield, and a cap adapted to fit over the hinged members and having an observation opening therein.

8. An apparatus of the class described, comprising a collapsible box member, having a plurality of windows formed therein and covered with suitably colored transparent material, a plurality of sleeve members connected to said box to permit the passage of the arms of the operator, means for adjusting the size of said sleeve members, a developing tray, a fixing bath receptacle, a drying rack arranged within said box member, and a washing tank adapted to receive the plates to be washed, and means for circulating water through the tank, and means located within the tank for controlling the circulation of the water therein.

9. An apparatus of the class described, comprising a box member, a wash tank located therein adjacent to one wall of the box, but having the side adjacent to the wall spaced apart from the latter, an inlet water pipe passing through the wall of the box and leading into and removably connected with the wash tank, a valve for said pipe connection located between the wall of the tank and the wall of the box, and a water outlet pipe removably connected with and extending from the tank to the exterior of the box.

10. An apparatus of the class described, comprising a box member, and a drying rack therein, said rack comprising a platform upon which the bottom edge of the plate is designed to rest, means secured to a wall of the box for engaging the edge of a plate adjacent thereto, and a pivoted bar or bail adapted to be swung downward on its pivots to engage with the outer edge of the plate for holding the same against movement.

11. An apparatus of the class described, comprising a box and a drying rack therein, said rack comprising a platform member upon which the plates are adapted to rest, means engaging with the vertical edges of

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the plates for holding the same against movement, and a pivoted shield or cover adapted to be swung downward on its pivots to extend over the plates.

- 5 12. An apparatus of the class described, comprising a box and a drying rack therein, said rack comprising a platform upon which the bottom edge of the plate is designed to rest, means secured to a wall of the box for
10 engaging the edge of a plate adjacent thereto, a pivoted bar or bail adapted to be swung downward on its pivots to engage with the outer edge of the plate, a pivoted shield or

cover adapted to be swung downward on its pivots to extend over the plate, and means 15 for holding said bar or bail and said shield or cover in an elevated position.

In testimony whereof we subscribe our names in the presence of two subscribing witnesses.

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JOSEPH F. TREERDELL.

Witnesses:

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W. A. PAULING.