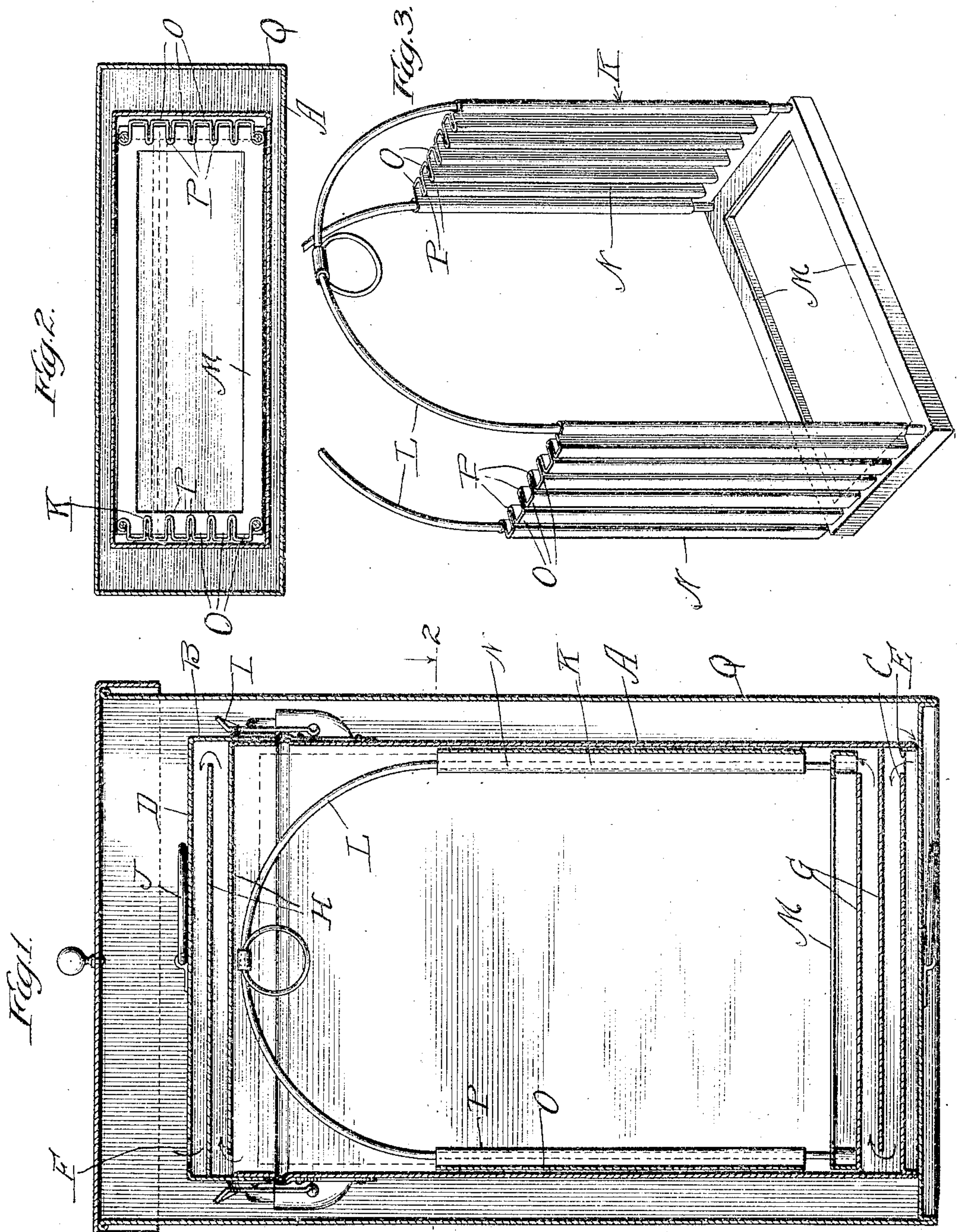


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 PHOTOGRAPHIC DEVELOPING APPARATUS.
 APPLICATION FILED NOV. 4, 1907.

909,090.

Patented Jan. 5, 1909.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID JAMES, OF CHICAGO, ILLINOIS.

PHOTOGRAPHIC DEVELOPING APPARATUS.

No. 909,090

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DAVID JAMES, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Photographic Developing Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled
10 in the art to which it appertains to make and use the same.

This invention relates to a novel device for use by photographers to develop, fix and wash plates, the object being to provide a
15 simple, very compact, light proof and easily manipulable device of this character which may be used for developing plates in daylight and consists in the features of construction and combinations of parts hereinafter fully
20 described and claimed.

In the accompanying drawings illustrating my invention: Figure —1— is a vertical section of a developing tank constructed in accordance with my invention. Fig. —2— is a
25 plan section of the same on the line 2—2 of Fig. —1—. Fig. —3— is a perspective view of a rack employed to hold the plates to be developed.

The object of the present invention is to
30 provide a very light, compact, easily portable developing tank capable of use in daylight without danger of the penetration of light to the contained plates and by means of which the greatest possible number of plates may
35 be developed with the use of the least quantity of solution, and which generally permits of easy handling of the plates from the time they leave the camera until they are washed ready to dry after development.

To the above and other ends my said device comprises a rectangular receptacle A made of a material which is proof against the action of all chemicals used in developing and fixing photographic plates, the said receptacle being open at one end and adapted
45 to be sealed by means of a cover B receiving the open end thereof. The bottom C of the receptacle and the upper wall D of the cover are provided at one end with openings E and
50 F respectively through which liquid and air pass into the tank, the latter being deflected and forced to take a zig-zag course by means of the staggered plates or false bottoms and
55 tops G and H disposed inwardly of and parallel with the bottom C and top D, said staggered arrangement being of importance only

in preventing the penetration of light to the contained plates and are therefore capable of being replaced by any other suitable means for accomplishing the same object.

The cover is secured in place by means of
60 suitable latches such as the trunk latches I shown and both the cover and bottom equipped with a ring J by means of which the receptacle may be carried.

Fitting within the receptacle A is a rack
65 K adapted to receive the plates to be treated, said rack comprising two inverted U-shaped wires L disposed parallel with each other and to the free ends of which the rectangular
70 skeleton base M is secured. Secured at their side edges to said wires L are two opposed parallel rack-plates N each provided with parallel vertical recesses O of a width sufficient to receive two plates, said recesses being
75 separated by projections P of less width so that when the rack is filled the vacant spaces between the plates will be of less width than the occupied space, thus enabling
80 the maximum number of plates to be contained therein. The plates are disposed in the recesses O in pairs back to back, the sensitized surfaces being thus fully exposed to the action of the solutions in which they are immersed. The said rack K fits snugly
85 within the receptacle A and the latter in turn is adapted to be received in a slightly larger rectangular receptacle Q, adapted to contain developer and subsequently the fixing bath, the said receptacle A fitting the last named
90 sufficiently snugly to cause a relatively small quantity of contained liquid to be so far displaced thereby as to rise above the upper ends of the plates to be developed. The receptacle A may then be removed and dipped
95 repeatedly in water if desired to partially wash out the developer preparatory to fixing, the fixing solution being now substituted in the receptacle Q for the developer and the receptacle A then reinserted and allowed to
100 remain until the plates are fixed, being then again removed and the rack removed therefrom. The latter may then, after removal of the fixing bath, be returned into the receptacle Q and the latter placed under a hy-
105 drant to finally wash the plates, or the rack may be dipped repeatedly into any other receptacle containing water (changed at intervals to insure complete washing out of all hypo or other fixer) thus affording a very
110 convenient means for handling the plates throughout the process without necessitat-

ing contact of the hands therewith from the time of insertion until after washing when they are removed and set out to dry.

I desire also to direct attention to the fact that the plates after being inserted in the receptacle A may be kept indefinitely so that a photographer taking pictures at different points on the road, or on successive days may transfer the exposed plates to the receptacle until the latter is filled to its capacity and then develop all of same, the transfer being made in a light proof bag designed for the purpose and constituting a portable dark room.

15 The reversibility of the receptacle A constitutes an essential feature of the invention for the reason that it enables the photographer to easily maintain the developer in motion relatively to the plates which, as is well known, is very desirable to secure uniformity of action on all parts of the plates.

The arrangement shown and described also permits the developer to be easily maintained very cold or cool by immersion of the tank Q in a bucket of cracked ice or cold water thus retarding the action of the developer which is also frequently very desirable to the attainment of best results.

I claim as my invention:

30 1. A photographer's developing apparatus comprising in combination a tank adapted to contain the developing agent, a receptacle for negatives adapted to enter said tank, a removable rack disposed in said receptacle 35 receiving and maintaining negatives properly spaced, said rack being equipped with a handle projecting above the upper ends of contained negatives to permit removal of said rack without contact of the hands with the negatives, the net depth of said receptacle being only slightly greater than the length of the largest negative adapted to be contained whereby when said receptacle is inverted at intervals said contained negatives are permitted only limited longitudinal 45

movement therein, a removable cover on said receptacle, locking means engaging the same, there being light proof passages in the bottom and cover respectively of said receptacle through the lower of which liquid enters the same and through the upper of which displaced air escapes as said receptacle is lowered into said tank.

2. A photographer's developing apparatus comprising a tank adapted to contain the developing agent, a receptacle for negatives adapted to be immersed in said developing agent, said receptacle being equipped with three parallel bottom plates equipped with openings at respectively opposite ends, said openings and intervening spaces between said plates forming a zig-zag light proof passage for air or liquid, a cover for said receptacle having three similarly disposed top plates, and locking means engaging said cover.

3. A photographer's developing apparatus comprising a tank adapted to contain the developing agent, a receptacle for negatives adapted to be immersed in said developing agent, said receptacle being equipped with three parallel bottom plates equipped with openings at respectively opposite ends, said openings and intervening spaces between said plates forming a zig-zag light proof passage for air or liquid, a cover for said receptacle having three similarly disposed top plates, locking means engaging said cover, and a removable rack in said receptacle receiving and maintaining negatives properly spaced therein and permitting ready removal of said negatives without contact of the hands therewith.

In testimony whereof I have signed my name in the presence of two subscribing witnesses.

DAVID JAMES

Witnesses:

HENRY BURKE.

W. B. STONE.