

(No Model.)

A. R. WARD.

PHOTOGRAPHIC FIXING AND WASHING TANK.

No. 491,619.

Patented Feb. 14, 1893.

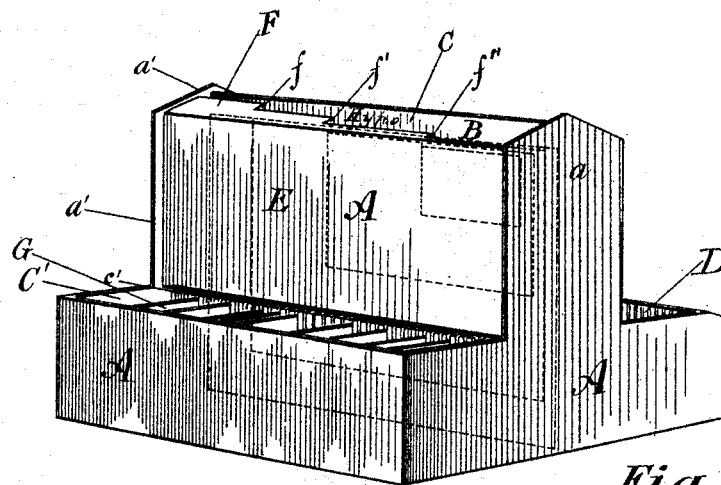


Fig 1.

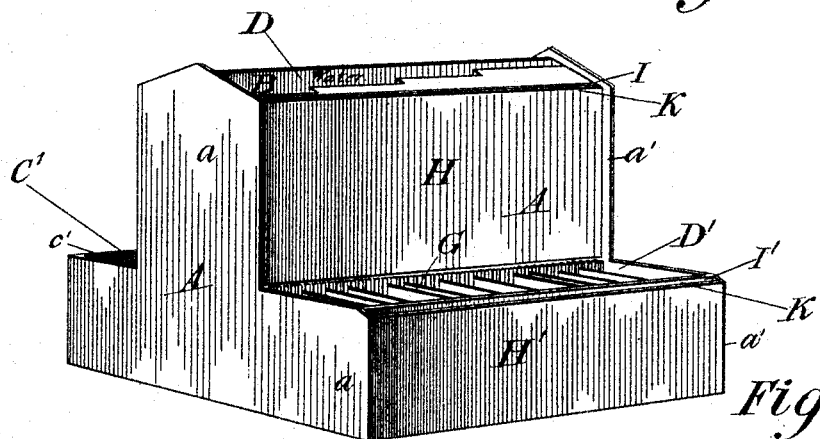


Fig 2.

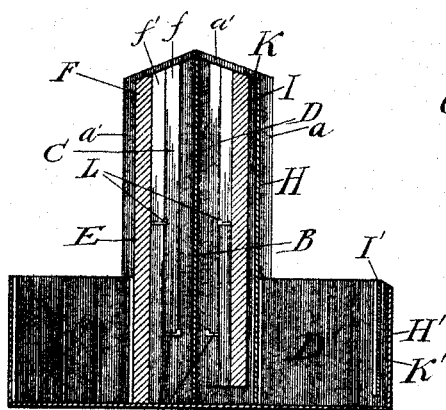


Fig 3.

Witnesses;
M. E. Angell.
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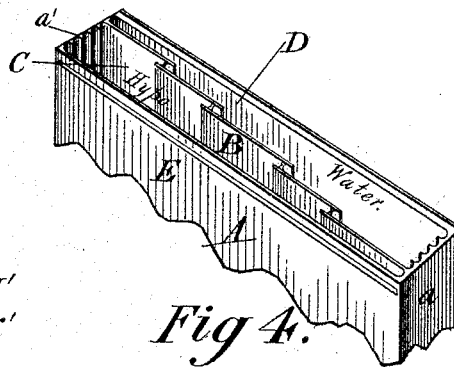


Fig 4.

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UNITED STATES PATENT OFFICE.

ALFRED R. WARD, OF TORONTO, CANADA.

PHOTOGRAPHIC FIXING AND WASHING TANK.

SPECIFICATION forming part of Letters Patent No. 491,619, dated February 14, 1893.

Application filed May 13, 1892. Serial No. 432,835. (No model.)

To all whom it may concern:

Be it known that I, ALFRED R. WARD, photographer, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented a certain new and useful Combined Fixing and Washing Tank for Photographic Purposes; and I hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to a means for fixing and washing negative plates after they have been developed; and the object of the invention is to produce a device by which a large number of negative plates can be fixed and then washed without requiring the constant attendance of the operator and by which each and all negatives in the bath will be subjected to the same treatment; and the invention consists essentially of a tank separated at its middle by a partition into two divisions, the divisions on one side of the partition containing the hypo or chemical solution and the division on the other side containing fresh water, each of these divisions being sub-divided to receive and accommodate negative plates of different dimensions, the whole device being constructed and arranged as hereinafter more fully set forth.

In the drawings:—Figure 1 is a perspective view of the combined fixing and washing tank looking at it from the hypo or chemical side of the middle partition. Fig. 2 is a view of the opposite or water side. Fig. 3 is a cross sectional view of Fig. 1. Fig. 4 is a view of an alternative form of construction.

Like letters of reference refer to like parts throughout the specification and drawings.

The invention consists essentially of a tank A, of any suitable shape and size, divided at its middle by a partition B, into two divisions, of which the sub-divisions C, and C', are located on one side of the partition B, and contain the chemical or hypo solution, while the sub-divisions D, and D', are located on the opposite side of the partition B and contain water. Each of the sub-divisions C and D are again sub-divided in such a manner as to receive a predetermined number of negative plates of different dimensions. The inside dimensions of the subdivisions C and D are of sufficient size to receive the largest negative plate in use.

As shown in Figs. 1 and 2 of the drawings the space for the largest negative plate to be

fixed and washed is adjacent to the partition B, while the space for the negative plates decreasing in size is located farther from the partition B and nearer the outer wall E.

Placed within the division C is a guide block F having a series of steps f , f' and f'' , the space between the end wall a , and the end wall of the step f , is of sufficient length to receive the second of the largest size of negative plates in general use, while the space between the end wall of the step f' and the end wall a of the tank A, is of sufficient length to receive the third of the largest size of negative plates in general use, while the space between the end wall and the step f'' , and the end wall a of the tank A, is of sufficient size to admit the fourth of the largest size of negative plates in general use.

In Fig. 4 of the drawings I have shown an alternative form of the sub-divisions C and D which consists of constructing the partition B of a series of sections corresponding to the steps of the blocks F and for the same purposes. In this instance, however, instead of placing the largest negative plates adjacent to the wall E, while the plates decreasing in size are placed farther from the wall E and nearer to the middle of the body of the tank A. It will be noticed by reference to Fig. 4 that this tank is constructed to receive five plates of different dimensions from the largest negative plate in general use to the fifth largest in size and that the end walls a , and a' , of each of the sub-divisions C, and D, are grooved to receive the ends of the negative plates to firmly hold them in position and prevent their lateral displacement.

It might here be stated that the distance from the inside of the wall a to the inside of the wall a' is slightly greater than the length of the largest plate to be acted upon so that the said plate can be readily placed therein and also that the depth of the subdivisions C and D is slightly greater than the width of the plate to permit of the plate being completely covered by the actuating fluid.

Located at the outer side of the wall E and below the level of the chemical tank or sub-division C, is a chemical tank or sub-division C' in which are placed the negative plates of the cabinet and smaller sizes. The chemical tank or sub-division C' is provided with any suitable number of grooves c' , placed horizontally opposite each other to receive and

hold securely in place the negative plates G. It might here be stated that the end walls *a* and *a'* project beyond the ends of the wall E so that in the event of an overflow from the chemical tank or sub-division C, the fluid will be guided into the chemical tank or sub-division *c'*.

As shown in Figs. 1, 2, and 3, of the drawings the top edges of the walls *a* and *a'* are inclined upwardly to the top of the partition B, so that in the event of an overflow the fluid will be forced to pass over the top edge of the wall E or H and thus be prevented from flowing from one division into another when said divisions are on opposite sides of the middle partition B and contain different fluids. The construction of the sub-divisions D and D' is similar to the construction of the sub-divisions C and C', with the exception that a second partition I and I', respectively, is placed within the divisions D and D', and adjacent to the walls H and H', respectively, and extending the full length of the divisions D and D', from the end wall *a* to the end walls *a'*. A constant stream of water flows through each of the divisions D and D', and entering the division D or near the top of the partition B, it passes down to the bottom of the division D, around the lower edge of the partition I and upward through the space K between the partition I and inner side of the wall H, then down the outer side of the wall H into the sub-division or water tank D'. It might here be stated that the partition I causes a circulation of water at the bottom of the sub-division D equal to the circulation of the water at the top of the said sub-division so that the negatives contained in the said sub-division will be washed equally at all parts. The water after entering the sub-division or water tank D' descends to the bottom of the said tank and passes around the lower edge of the partition I' located similarly to the partition I and for the same purpose, then upward through the space K' and then out over the top edge of the wall H' into the sink or other medium placed to receive it. It might here be stated that the walls *a* and *a'* project sufficiently beyond the wall H to direct the water flowing over the top of the wall H, into the sub-division or water tank D'.

In using the device the negative plates after they have been developed are placed in the chemical tanks or sub-divisions C, and C', and are permitted to remain there until they have been properly fixed. They are then removed from the chemical tanks or sub-divisions C, and C', and placed in the water tanks or sub-divisions D and D' where they are allowed to remain for sufficient time to become thoroughly washed.

It might furthermore be stated that owing to the peculiar construction of the sub-divisions *a*, a large number of negative plates can be properly fixed and washed without requiring the constant attendance of the operator. To support the smaller of the negative plates

in position while within the sub-divisions C and D pins L are let into the sides of the steps *f*, *f'* and *f''* at a suitable depth to allow of the plates being entirely covered and at the same time not of sufficient depth to cause any loss of time or inconvenience to the operator feeling for them in the fluid.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A combined fixing and washing tank comprising a suitable vessel, a partition B dividing said vessel into two divisions one of said divisions adapted to contain a chemical solution and the other division adapted to contain water, means in each of said divisions for holding the photographic negatives in an upright position; a second partition within the division adapted to contain water, said second partition extending downwardly in said division from the top edge thereof to near the bottom to form a passage between itself and the outer wall, substantially as described.

2. A combined fixing and washing tank comprising a suitable vessel, a partition dividing said vessel into two divisions one of said divisions adapted to contain a chemical solution and the other division adapted to contain water, means in each of the said divisions for holding the negatives in an upright position, a second partition located intermediate the first partition and the outer wall of the said division to form a passage between itself and the said outer wall, a second division located on the outer side of each of the first mentioned divisions and arranged at a plane below the level of the top of the said first mentioned divisions and means in said second divisions for holding the negative plates in a vertical position, substantially as described.

3. A combined fixing and washing tank comprising a suitable vessel A, a partition B dividing it into two divisions C and D, the division C located on one side of the partition B adapted to contain a chemical solution and the division D located on the other side of the said partition adapted to contain water, means in each of the divisions C and D to hold the photographic negatives in an upright position, a second partition I located within the division D and in close proximity to the outer wall, to form a passage between itself and the outer wall of the said division, divisions C' and D' located respectively on the outer side of each of the first mentioned divisions C and D at a plane below the level of the top of the same, a partition I' located within the division D and extending downwardly from the top of the same and in close proximity to its outer wall to form a passage between itself and the said outer wall, substantially as described.

Toronto, April 23, 1892.

ALFRED R. WARD.

In presence of—

M. E. CORYELL,
CHAS. H. RICHES.