

No. 721,179.

PATENTED FEB. 24, 1903.

H. GRAHAM.
WASHING DEVICE.

APPLICATION FILED AUG. 28, 1902.

NO MODEL.

Fig. 1.

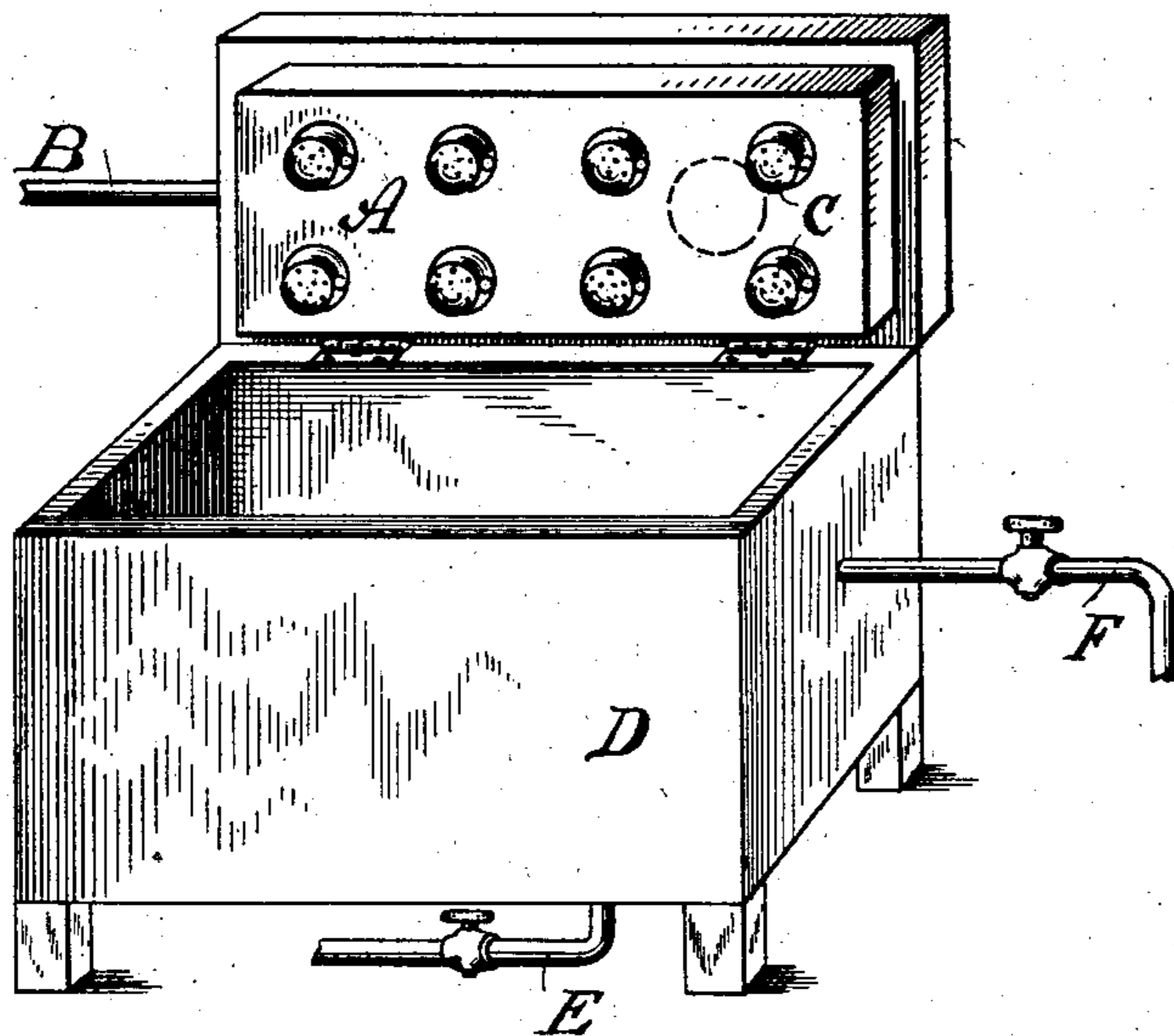
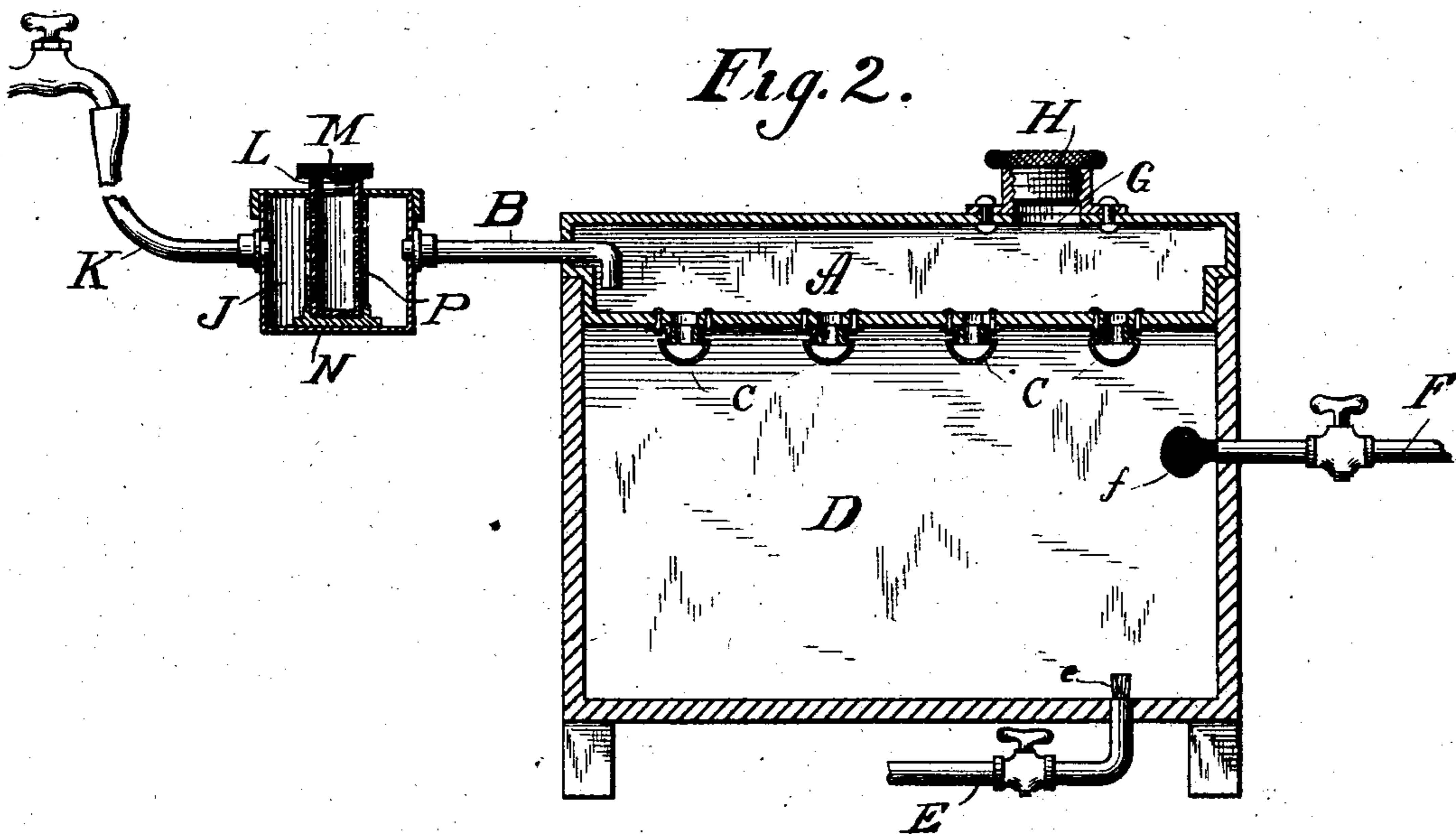


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

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WASHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 721,179, dated February 24, 1903.

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To all whom it may concern:

Be it known that I, HENRY GRAHAM, a citizen of the Kingdom of Great Britain, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Washing Devices, of which the following is a full, clear, and exact description.

My invention relates to improvements in washing devices, and particularly to a device adapted to wash photographic films, plates, and other fragile articles.

It is the object of my invention to construct a device which while being simple and economical in structure and durable will at the same time be effective in operation. These results are attained by a structure embodying the principles shown in the accompanying drawings.

It consists in providing an apparatus which will spray water or other liquids of the desired character or variable nature over a considerable area with force. The liquid used may be of a desired mixture or chemical combination, so that when sprayed over the devices to be treated it may be properly regulated in its constituent parts.

In the drawings, Figure 1 represents a perspective view of a device embodying a part of my invention—viz., that for spraying the solution upon the plates, &c. Fig. 2 is a cross-section and elevation of a device embodying one form of my invention.

A is a distributing-tray which has leading into it at one side a pipe B, through which water may be introduced. The under surface of this receptacle A is provided with a series of outlets having spraying-nozzles C C secured thereto.

D is a holding-receptacle in which the films or plates, &c., may be placed for the purpose of washing or cleansing the same. From this receptacle are led suitable draining-pipes E and F, which may be disposed as desired. The lower draining-pipe E has a plug *e* inserted at the top for ready access to the same when it is desired to entirely drain the receptacle D or run the water out through this pipe. The pipe F has on the inner end a screen of wire *f* in order to prevent the matter contained in the receptacle D from stopping up the exit-passage. Either or both of

the pipes E and F may be provided with suitable valves, as desired.

The distributing-tray is provided with an opening G and a suitable cap H, so that access may be had to the tray for the purposes of cleaning the same, &c.

When water is forced through the pipe B, as thus far described, it enters the distributing-tray A, and after circulating therein passes out through the outlets in the base thereof and is sprayed with considerable force in all directions, through the nozzles C C, upon the contents of the receptacle D, thus dislodging any chemical or foreign substance resting upon the articles and effectively cleansing and washing the same. The solution is thus distributed with considerable force and sufficient to remove all bubbles and foreign particles clinging to the plates, &c., without in any way injuring the surface or material.

I prefer in this construction, particularly as shown in Fig. 1, that the distributing-tray A shall form a cover to the box D and be hinged to the same for convenience in handling and operating.

J is a casing which is inserted at a suitable point in the inlet-pipe B, between the same and a suitable supply-pipe K. Inside of the casing J is a porous or perforated tube portion L, in which the chemical compound to be used in the washing solution is placed. The top of the tube L, outside of the case J, is provided with a screw-cap M for ease in access to the tube for the purpose of introducing the compound or substance used. The base of the tube L is preferably provided with a supporting means N for the purpose of more securely holding it in place. It is obvious that the tube L may be permanently secured to the casing J or made removable, if desired. Also the top of the casing may be made either permanently or removably attached to the body of the case. I have shown in the drawings a filter or dialyzer P, covering the surface of the tube L; but this is not necessary in all cases. It may be desirable, however, when the substance placed in the tube L is of a liquid form. The substance with which it is desired to impregnate the washing solution will be gradually taken up by the water passing in through the pipe K and mixed while on its passage to the dis-

tributing-tray A. As it circulates in this tray A the solution is more effectively and uniformly mixed, so that when it passes out through the spraying-nozzles C C it is in a
 5 form to best act upon the articles to be washed. As the water continues to flow through the mixing-case it gradually removes all the substance contained within the tube L, so that the water becomes at length quite
 10 free of any of the chemical substance employed and will eventually as pure water rinse the plates or the like contained in the box D. It will thus be noted that I have provided a device which by a continuous op-
 15 eration will effect chemical action upon the plates, &c., and then perform the function of simply washing, cleansing, or rinsing without further attention.

The form of spraying-nozzle used with this
 20 device is not material to this invention, since any form which will efficiently distribute the water and spray the same in various directions forcibly would be suitable. The tube L, which I have spoken of as surrounded in
 25 some cases by a dialyzer, such as parchment and the like, may be a simple perforated tube. Substances of different constituencies may be used in the tube, either liquid, powder, or solid. When using the device to wash films
 30 or photographic plates, a solution of hyposulfite of soda may be used in the tube surrounded by a dialyzer, and the films will then be acted upon by the hypo and continuously-renewed solution thus applied.
 35 The chemical may be introduced, if desired, in a crystalline form, and in this case the filter should be removed. It is obvious that the same device may be used when washing platinum prints, in which case hydrochloric
 40 acid would be used in the tube L, with a suitable dialyzer or slow filter. Of course the different parts of the apparatus must be constructed of a material which would not be acted upon by the chemicals employed. It
 45 is also obvious that soap may be used in the tube L when a saponaceous washing solution is desired. The water may, if desired, be heated and run through under pressure. The construction is therefore, as will be seen, use-
 50 ful in a variety of ways. The water passing through the device after operation for some time will be clear or substantially pure, the length of time required depending upon the amount of chemical employed, the tempera-
 55 ture of the water, and the porosity of the filter, dialyzer, and tube L.

What I claim is—

1. A washing device comprising a closed, box-like distributing-tray, an inlet-pipe there-
 60 for, a plurality of discharge-nozzles attached to said tray for the purpose of spraying water from the same, said tray having a suitable opening G and a cap therefor.

2. A washing device comprising a closed,
 65 box-like distributing-tray, an inlet-pipe therefor, said tray having a plurality of discharge-orifices, a suitable spraying-nozzle provided

for each of said orifices, a holding-box and a discharge-pipe from said box.

3. A washing device comprising a closed, 70 box-like distributing-tray, an inlet-pipe therefor, said tray having a plurality of discharge-orifices, a suitable spraying-nozzle provided for each of said orifices, a holding-box and a discharge-pipe from said box, said distribut- 75 ing-tray being hinged to said holding-box.

4. A washing device comprising a mixing-case, an inlet thereto, a perforated tube in said case for holding chemicals to be absorbed, a screw-cap for said tube, a distributing-tray, 80 a communicating pipe from said mixing-case to said distributing-tray and means for discharging a solution from said tray in a plurality of sprays.

5. A washing device comprising a mixing- 85 case, an inlet thereto, a perforated tube in said case for holding chemicals to be absorbed, a means for access to said tube, a distributing-tray, a communicating pipe from said mixing-case to said distributing-tray and a 90 plurality of spraying-nozzles for discharging the solution from said tray.

6. A washing device comprising a mixing- case, an inlet thereto, a perforated tube in said case for holding chemicals, a screw-cap 95 for said tube, a distributing-tray, a communicating pipe from said mixing-case to said distributing-tray and means for discharging a solution from said tray in a plurality of sprays, and a holding-box having a discharge-orifice, 100 substantially as described.

7. A washing device comprising a mixing- case, an inlet thereto, a perforated tube in said case for holding chemicals, a means for access to said tube, a distributing-tray, a com- 105 municating pipe from said mixing-case to said distributing-tray, means for discharging a solution from said tray in a plurality of sprays, and a holding-box having a discharge-orifice, said distributing-tray being hinged to said 110 holding-box, substantially as described.

8. A washing device comprising a mixing- case, an inlet-pipe thereto, a perforated tube for containing chemical substances, within said case, a screw-cap for said tube, a dis- 115 charge-pipe from said mixing-case, and means for spraying water passing from said discharge-pipe.

9. A washing device comprising a mixing- case, an inlet-pipe thereto, a perforated tube 120 within said case for containing a chemical substance said tube being accessible from without said case, a cap for said tube, a discharge-pipe leading from said mixing-case, and means for forcing water into said case, 125 and means for spraying a solution passing out from said discharge-pipe.

Signed at New York, N. Y., this 25th day of August, 1902.

HENRY GRAHAM.

Witnesses:

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