

March 28, 1944.

E. E. MYERS ET AL

2,345,284

PIPETTE WASHING APPARATUS

Filed April 2, 1942

2 Sheets-Sheet 1

Fig. 1.

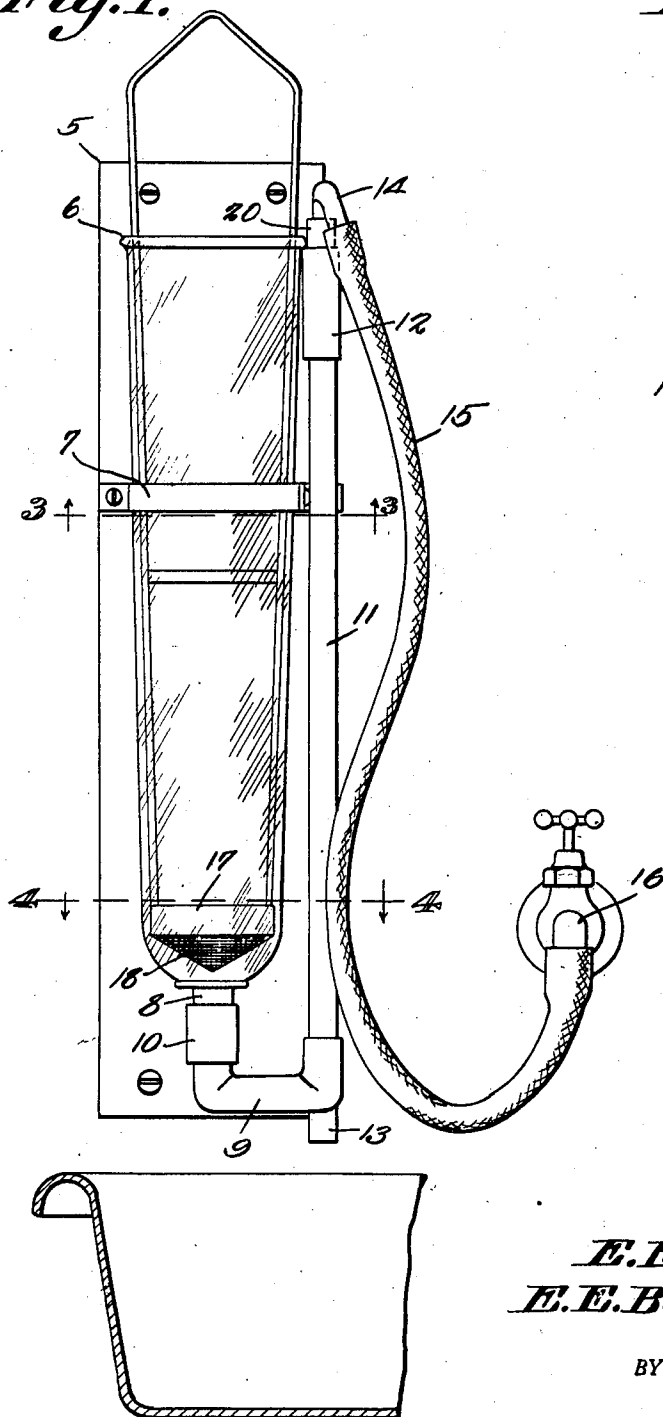
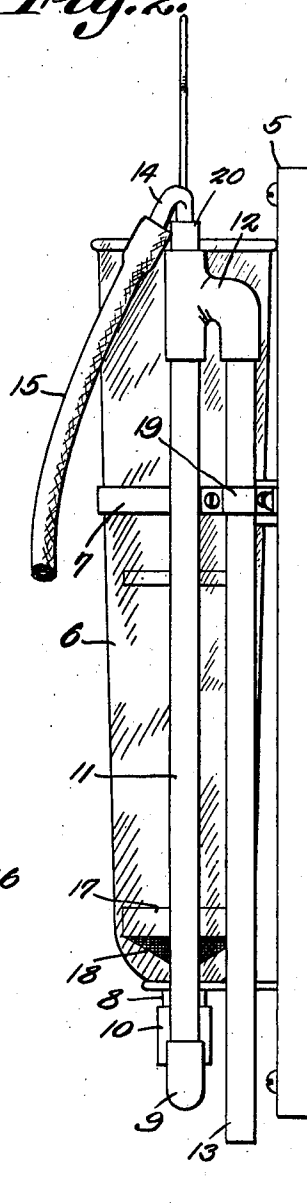


Fig. 2.



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Fig. 3.

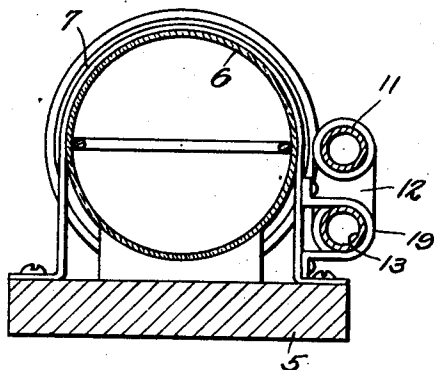


Fig. 4.

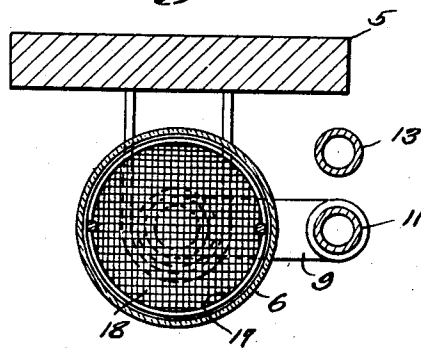
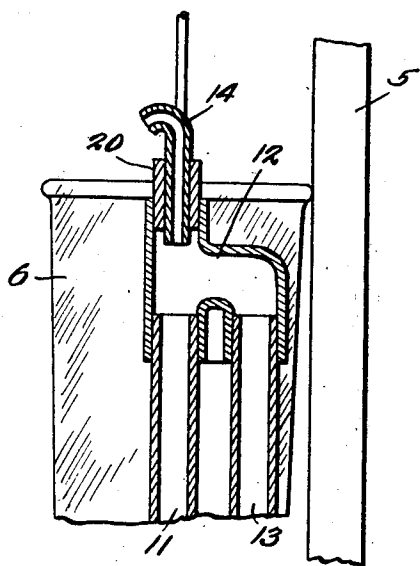


Fig. 5.

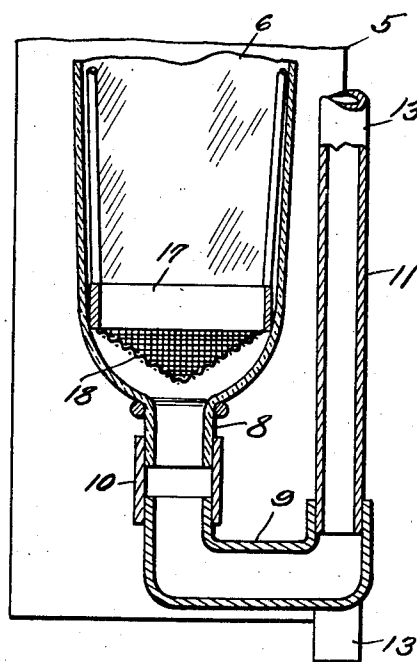


Fig. 6.

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UNITED STATES PATENT OFFICE

2,345,284

PIPETTE WASHING APPARATUS

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Application April 2, 1942, Serial No. 437,432

2 Claims. (Cl. 137-106)

This invention relates to an apparatus designed primarily for washing and cleansing pipettes.

The primary object of the invention is to provide an apparatus of this character which will automatically fill and drain the receptacle or tank in which the pipettes are being washed, at predetermined intervals, to the end that the cleansing liquid is being constantly changed during the washing operation, to thoroughly accomplish the purpose of the invention.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawings—

Figure 1 is an elevational view of a pipette washing apparatus, constructed in accordance with the invention.

Figure 2 is a side elevational view thereof.

Figure 3 is a transverse sectional view taken on line 3-3 of Fig. 1.

Figure 4 is a sectional view taken on line 4-4 of Fig. 1.

Figure 5 is an enlarged sectional view through the head or union connecting the ascending arm and descending arm of the siphon.

Figure 6 is an enlarged sectional view through the bottom of the receptacle or tank in which the pipettes are supported during washing.

Referring to the drawings in detail, the reference character 5 designates the support for the tank or vessel in which the pipettes are washed. This support is in the form of a board having openings for the reception of securing screws, whereby the support may be securely mounted on a supporting surface.

The reference character 6 designates the tank or vessel in which the pipette tubes are washed, and is constructed preferably of glass, so that the pipettes may be viewed, during the washing operation. A securing band indicated at 7 is positioned around the tank or vessel 6 and secures the tank or vessel to the support 5.

The lower end of the tank or vessel 6 is formed with an extension 8 that is connected with the union 9 by the flexible tubular member 10, the extension being hollow, so that the contents of the tank or vessel may exhaust into the union 9. A pipe indicated at 11 indicates the ascending arm of the siphon, which extends into the head

12. The head 12 is formed with an opening to receive the descending arm 13 of the siphon, the exhaust end of the descending arm or pipe 13 of the siphon, terminating at a point below the union 9. An inlet opening is formed in the head 12, and accommodates the pipe 14 to which the tubing 15 is connected, the tubing 15 being formed so that it may be positioned over the discharge spout of a spigot such as indicated at 16.

As clearly shown by the drawings, the side of the pipe 14 is much less than the size of the discharge pipe 13 to the end that the discharge of water from the tank or vessel, will be greater than the supply of water to the tank or vessel, with the result that even though the water is entering the vessel, the contents of the vessel will be exhausted by the vacuum created in the arms of the siphon.

The reference character 17, designates the rack or frame which is supported within the tank or vessel 6, and in which the pipettes being washed are supported, during the washing operation. A screen indicated at 18 covers the bottom of the rack or frame 17 to prevent foreign matter from entering that portion of the tank or vessel, in which the pipettes are supported.

A strap indicated at 19 is positioned over one of the arms or pipes of the siphon, securing the siphon to the support.

In order to insure a fluid-tight connection between the pipe 14 and head 12, a gasket indicated at 20 is provided, and fills the space between the pipe 14 and head 12 of the siphon. In the use of the apparatus, it is desirable to support the apparatus above a sink, so that the water may discharge into the sink after it has passed through the tank or vessel 6.

In using the apparatus, the tank or vessel is supported adjacent to a spigot, and the tubing 15 is connected with the spigot so that water will enter the siphon head 12 at a point adjacent to the top of the tank or vessel. The rack or frame which has been filled with pipettes, is now positioned in the tank or vessel, the pipettes being positioned substantially vertically, so that water may pass therethrough, to accomplish the cleansing of the pipettes.

As the water enters the ascending arm or pipe 11, the water will flow into the tank and fill the tank and pipe 11. Due to the weight of the water in the tank or vessel, the siphon head will fill with water and as the water flows through the pipe 13 of the siphon, the siphonic action of the water will be started and the water will be drawn off from the tank or vessel by the

siphonic action. The tank or vessel will be gradually emptied, since the amount of water exhausting from the siphon head is greater than the amount of water flowing into the tank.

When the water in the tank or vessel 6 has been exhausted, the water will again fill the tank or vessel, until the siphon is again started in a manner as described, whereupon the tank will be gradually emptied. This filling and emptying of the tank or vessel 6 will continue indefinitely, or until the flow of water from the spigot, through the tube 15 has been stopped.

What is claimed is:

1. In an apparatus for washing pipettes, a vertical vessel, a combined inlet and outlet pipe extending along the side of the vessel and being in communication with the vessel through the bottom thereof, a discharge pipe spaced from the combined inlet and outlet pipe and disposed in parallel relation therewith, a siphon head connecting the upper ends of the pipes and establishing communication between the pipes, a vertical water feed pipe extending into the siphon head, the discharge end thereof being disposed above the upper end of the combined inlet and outlet pipe in line therewith, the water-

feed pipe being of a diameter appreciably less than the diameter of the combined inlet and outlet pipe, and the siphon head adapted to create a siphonic action of the water in said combined inlet and outlet pipe when the water flows from the combined inlet and outlet pipe, through the discharge pipe.

2. In an apparatus for washing pipettes, a vertical vessel, a combined inlet and outlet pipe disposed longitudinally of the vessel, a pipe establishing communication between the pipe and bottom of said vessel, a discharge pipe arranged in parallel spaced relation with the combined inlet and outlet pipe, a siphon head connecting the upper ends of the pipes, a water-feed pipe disposed above the combined inlet and outlet pipe and adapted to discharge water directly into the combined inlet and outlet pipe, the water-feed pipe being of a diameter appreciably less than the diameter of the combined inlet and outlet pipe, whereby water may exhaust from the vessel at a rate of speed greater than the rate of speed of the water fed to the siphon head and vessel.

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