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2,222,673

PIPETTE CLEANER

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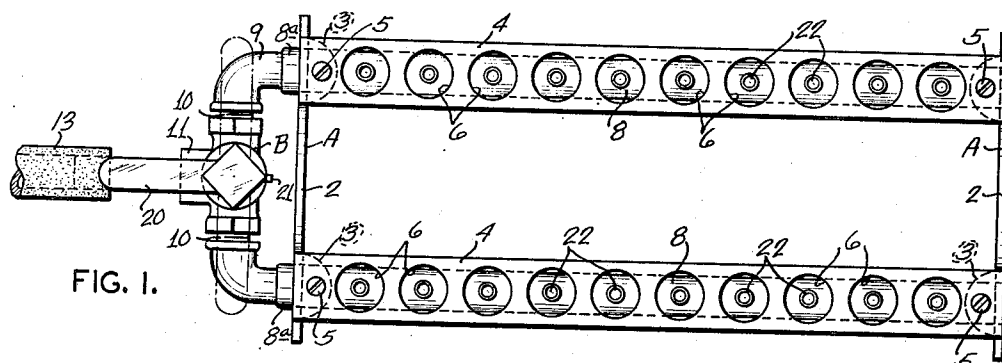


FIG. 1.

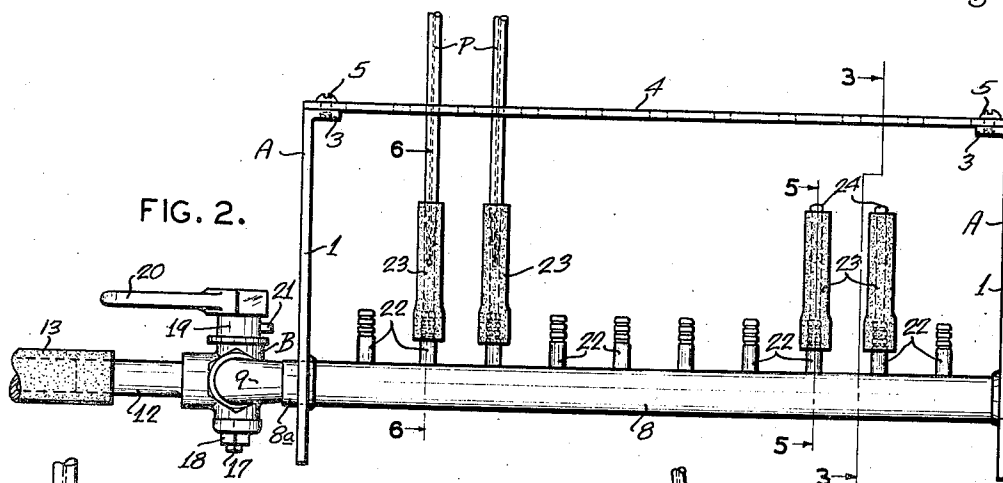


FIG. 2.

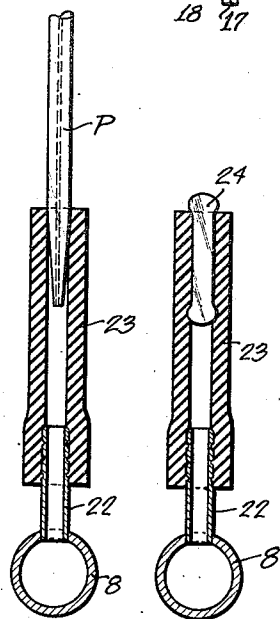


FIG. 3.

FIG. 5.

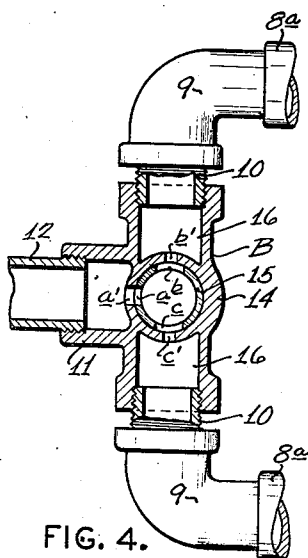


FIG. 4.

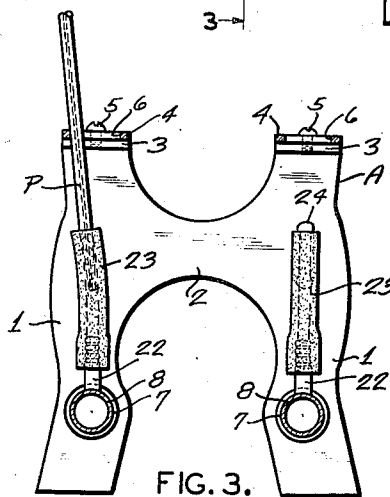


FIG. 6.

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PIPETTE CLEANER

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4 Claims. (Cl. 141—1)

This invention relates to a certain new and useful improvement in pipette cleaners and has for its primary objects the provision of a structure of the type and for the purpose stated, which may be inexpensively constructed, which is sturdy and durable in structure, which is compact in form and conveniently usable, which will within limits accommodate a selected plurality of pipettes or similar laboratory instruments for cleaning, and which will clean and rinse the instruments speedily, efficiently, and economically.

And with the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawing:

Figure 1 is a top plan view of a pipette cleaner of my invention;

Figure 2 is a side elevational view of the cleaner;

Figure 3 is a transverse vertical sectional view of the cleaner, taken approximately along the line 3—3, Figure 2;

Figure 4 is an enlarged fragmentary top plan view of the cleaner, partly broken away and in section; and

Figures 5 and 6 are enlarged fragmentary vertical sectional views of the cleaner, taken approximately along the lines 5—5 and 6—6, respectively, Figure 2.

Referring now in more detail and by reference characters to the drawing, which illustrates a preferred embodiment of my present invention, the cleaner includes a frame built up of and comprising a pair of companion end-members or walls A preferably cast, forged, or otherwise fabricated of metal of any suitable strength, size, and thickness, each of the end-members or walls A having the shape or contour best shown in Figure 3. As there shown, each end-wall A consists unitarily of a pair of parallel leg-members 1 integrally connected intermediate their ends by an arcuately margined transversely extending cross-member or bar 2, each leg-member 1 being formed preferably integrally at its upper margin with a laterally presented apertured flange or ear 3.

The end-walls A are oppositely disposed with their respective ears 3 inwardly presented, and securing the end-walls A in upstanding, spaced, parallel relation are strips 4, which extend between, and at their respective opposite ends are fixed, as by bolts 5, to and flatwise upon, the ears 3, each of the strips 4 being provided longitudi-

nally with an aligned series of preferably uniformly spaced circular openings 6, as best seen in Figure 1 and for purposes presently more fully appearing.

Adjacent their lower margin and in vertical alignment with the ears 3, the opposed end-walls A are formed with registering pairs of circular apertures 7, and snugly mounted in, and extending lengthwise between, the respective pairs of axially aligned apertures 7, and forming substantially parts of the frame of the cleaner, are tubular members or pipes 8, each of which has a suitably closed end disposed flush with the outwardly presented face of one of the end-walls A. At its other end, each pipe-member 8 is extended, as at 8a, to project through, and beyond the outwardly presented face of, the other end-wall A for suitable connection with one end of a respective inwardly turned pipe elbow 9.

Disposed lengthwise between, and suitably, as by nipples 10, connected to, the opposed elbows 9, is a T-valve coupling B having a centrally disposed outwardly presented intake extension 11 for threadedly receiving a connection-nipple 12 adapted, in turn, for connection through a section of suitable preferably flexible rubber tubing 13 with a suitable source of water supply, not shown.

The coupling B is further provided with a centrally disposed body-portion 14 vertically drilled or machined for seating for rotary movement a hollow conical valve-member 15 having three ports a, b, and c, spaced at approximately 90° one from the other for respective registration with ports a', b', and c', likewise spaced 90° one from the other in the valve-body 14 for communicating the latter ports with the respective branches of the coupling B, that is to say, the extension 11 and the respective branches 16, 16, connecting through the elbows 9 with the pipe-members 8.

Securing the valve-member 15 in operative position at its lower end in the valve-body 14, is a downwardly projecting post-extension 17 suitably threaded for receiving a nut 18.

At its upper end, the valve-member 15 is provided with an upwardly extending shank 19 suitably shaped for receiving a manipulating-member 20 and provided with a radially outwardly extending position-indicating-pin 21, all as best seen in Figures 2 and 4 and for purposes presently more fully appearing.

Each of the pipe-members 8 is provided with a communicating series of uniformly spaced rigid vertically upwardly presented open-topped stub-pipes 22 respectively disposed in axial alignment

with the openings 6 of the particular overlying strip 4, and removably mounted over the open upper end of each of the respective stub-pipes 22, is a short section of preferably flexible rubber tubing 23 provided at its free upper end with a removable plug in the form of a short fire-polished glass or other suitable stirring-rod 24, as best seen in Figures 1 and 2 and for purposes presently more fully appearing.

In use and practice, each pipette P to be cleaned is endwise inserted through one of the apertures 6 of a cross strip 4, the plug 24 removed from the registering tube 22, and the pointed end of the pipette P substituted therefor in the particular stub-pipe 22, as best seen in Figures 2 and 3. The pipette is thereby supported endwise in upstanding position, as it may be said, with its bore in open communication through the flexible extension 23 and rigid tube 22 with the particular pipe 8. The water supply is then turned on at the main source, and the valve-member 15 rotated by means of the handle 20, so that water or other fluid will course through the pipes 8 and thence upwardly through the particular stub-pipes 22 and their rubber-tube extensions 23 through the positioned pipettes P and overflow outwardly through the disposed pipettes.

For convenience, the cleaner may be placed in a sink, basin, pan, or the like for catching the overflowing water, which may be permitted to flow continuously through the positioned pipettes until satisfactory cleaning thereof has been accomplished.

It will, of course, be evident that, when the valve-member 15 is rotated to the position shown in Figure 4, the cleansing water or other fluid will flow uniformly through both of the pipes 8 and the particular pipettes disposed on the tubes 23 thereof.

If the valve-member 15 is turned or disposed, so that the port b is in alignment with the valve port a' and the port a in alignment with the valve port c', water will flow only through one of the pipes 8. On the other hand, if the valve-member 15 is rotated through 90° in the opposite direction, water will similarly flow only through the other pipe 8. Thus, when only a small number of pipettes P are to be cleaned, they may be placed in the flexible tubes 23 of one of the pipes 8 and the valve-member 15 turned or manipulated, as described, so as to permit the cleansing water to flow only through such particular pipe 8.

The cleaner is quite unique in form and functions conveniently, efficiently, and speedily in the thorough cleaning of the pipettes with breakage reduced to a minimum.

It should be understood that changes and modifications in the form, construction, arrangement, and combination of the parts of the cleaner may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A pipette cleaner comprising a pair of companion-shaped end frames, a pair of transversely spaced parallel pipes extending longitudinally between the end frames, a plurality of uniformly spaced upwardly projecting nozzles mounted on the pipes, a section of flexible tubing fitted over and extending upwardly from each nozzle for connection with the pipette tips, and a pair of transversely spaced parallel cross members extending longitudinally between the end frames in upwardly spaced relation to the sections of tubing and each having a plurality of spaced apertures for supportingly embracing the pipettes at a substantial distance above the tips of said tubing.

2. A pipette cleaner comprising, in combination, a frame including spaced upstanding end-members and a connecting-strip extending lengthwise between, and fixed to, the end-members, said strip having a longitudinal series of spaced openings for pipette accommodation, a pipe mounted lengthwise on the frame for connection with a source of cleaning fluid supply, outlet nozzles presented upwardly from the pipe in registering juxtaposition to said openings, and tubular members flexibly upstanding from the nozzles and having upwardly presented end portions intermediate the pipe and said apertured strip for engaging the pipettes.

3. A pipette cleaner comprising, in combination, a frame including spaced upstanding end-members and a pair of parallel connecting-strips extending lengthwise in spaced relation between, and fixed to, the end-members, each of said strips having a longitudinal series of spaced openings for pipette accommodation, a pair of pipes mounted lengthwise on the frame for connection with a source of cleaning fluid supply, outlet nozzles presented upwardly from each of the pipes in registering juxtaposition to said openings, and tubular members flexibly upstanding from the nozzles and having upwardly presented end portions intermediate the respective pipes and said apertured strips for engaging the pipettes.

4. A pipette cleaner comprising, in combination, a frame including spaced upstanding end-members and a pair of parallel connecting-strips extending lengthwise in spaced relation between, and fixed to, the end-members, each of said strips having a longitudinal series of spaced openings for pipette accommodation, a pair of pipes mounted lengthwise on the frame, a tubular cross-member having communication with the pipes and adapted for connection with a source of cleaning fluid supply, valve means on the cross-member for controlling the supply of said fluid to said pipes, outlet nozzles presented upwardly from each of the pipes in registering juxtaposition to said openings, and tubular members flexibly upstanding from the nozzles and having upwardly presented end portions intermediate the respective pipes and said apertured strips for engaging the pipettes.

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