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W. C. HERBERT ET AL

SAFETY FOUNTAIN BRUSH

Filed Feb. 19, 1921

Fig. 1.

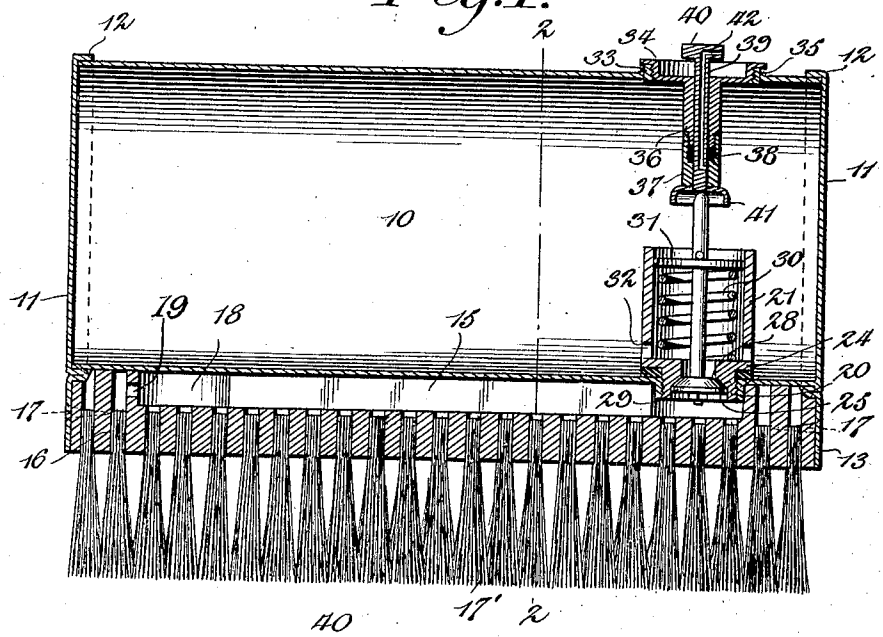


Fig. 2.

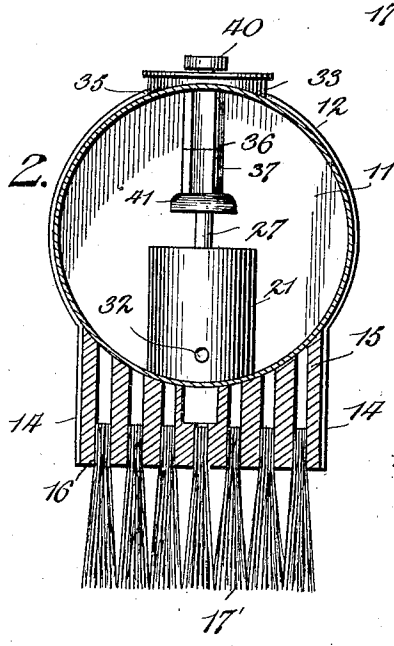
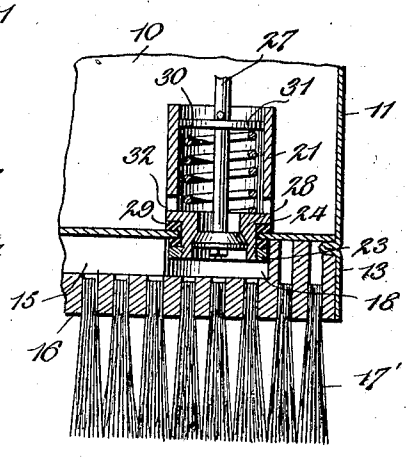


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SAFETY FOUNTAIN BRUSH.

Application filed February 19, 1921. Serial No. 446,313.

To all whom it may concern:

Be it known that we, WILLIAM CHARLES HERBERT and FRANCIS X. SMITH, citizens of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Safety Fountain Brushes, of which the following is a specification.

This invention relates to safety fountain brushes for use by printers, dry-cleaners, tanners and others who apply explosive or inflammable liquids by means of a brush.

One of the principal objects is to provide a device of this nature in which the tank or reservoir may be detachably mounted on the brush proper and form a handle for manipulation of the brush and so that the weight of the tank and contained liquid may be utilized to press the brush into contact with the article operated upon thereby reducing the efforts of the operator to a minimum.

Another object is to provide novel means of securing the brush and tank together.

Another object is to provide a novel form of brush.

Another object is to provide a closure for the tank which shall be partly constructed of fuse metal so as to melt in case of fire thereby permitting the liquid to be burned and avoiding an explosion which would spread the flaming liquid.

Another object is to provide improved valve and valve operating mechanisms.

Another object is to construct a device of this nature which shall be simple of construction, cheap to manufacture, and highly efficient for the purpose for which it is designed.

With these and other objects in view which will be more apparent as the specification proceeds, the invention resides in certain novel features of construction and combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claim, and are illustrated in the accompanying drawing, in which:—

Figure 1 is a longitudinal vertical sectional view of the device.

Figure 2 is a transverse sectional view on line 2—2 of Figure 1.

Figure 3 is a fragmentary view of a modified form of valve mechanism.

Like characters of reference refer to like parts in all views.

Referring to the drawing in detail, 10 represents the cylindrical casing of the tank portion which is provided with ends 11 which are formed with flanges 12 to embrace the member 10 and with downwardly extending portions 13. Each portion 13 is provided with inwardly bent side flanges 14 which fit about the sides of the bristle carrying member 16 of the brush. Each portion 13 is also provided with two apertures through which screws 17 are driven into the member 16 to anchor the brush to the tank.

The member 16 is provided with the usual bristles 17′ and is formed with a curved upper face to conform to the configuration of the can. The curved form of the top of member 16 and the straight flanges 14 prevent sliding of the brush about the surface of the can and screws 17 lock the can and brush together. At equal distances from each end of the member 16 a well 18 is formed in the upper surface of the member 16 and is provided with a duct 19 for permitting liquid to flow from the well 18 to the bristles. A slot or way 15 is formed in the upper surface of member 16 to connect the wells 18, and is cut down flush with the bottoms of said wells.

The bottom of the can or tank is extruded as at 20 and formed with screw-threads to receive the lower end of a sleeve member 21 which is reduced so as to form a shoulder to clamp a washer or gasket into tight contact with the interior surface of the can. This sleeve is provided at the line of the bottom of the can with an annular shoulder 24, the lower surface of which is formed with a valve seat 25. A valve rod 27 passes through the sleeve 20 and is provided at its lower end with a conical valve 28 of leather or like material held to the rod and backed up by a washer 29 of metal itself secured in place by a screw or other suitable means.

A spring 30 is seated against the upper face of shoulder 24 with its upper end pressing against a collar 31 on the rod 27 which is held in place by a cotter pin or other suita-

ble means. An aperture 32 is formed in the member 21 at a slight distance from the bottom of the can so as to permit the egress of the liquid, the lower portion of the can forming a trap to catch any sediment.

The extrusion 20 extends into the well 18 but not to the bottom thereof, said well thus forming a receptacle into which a portion of the liquid may be released and gradually fed out through the small duct 19. Also the liquid will flow from the forward well through the way 15 to the rear well and will pass out through the rear duct 19 and through the bristle apertures opening into way 15.

A threaded collar 33 is secured in the top of the can by means of a fusible solder 35, and into this a cap or closure member is adapted to be screwed. This cap comprises a bushing 34 preferably of brass and provided with a sleeve 36. The lower end of sleeve 36 is reduced and screw-threaded and on this is secured a member 37 forming a stuffing box in which a packing 38 of waste and graphite or other suitable material is confined so as to make a liquid tight packing around a push rod 39 which extends through the sleeve 36 and is provided at its upper end with a finger piece 40. A disk 41 is secured to the lower end of rod 39 and is provided with a conical lower surface for preventing the rod 27 from slipping away when the rod 39 is pressed down.

A duct 42 passes through the side of finger piece 40 and down rod 39 to a point normally sealed by the member 37.

In operation, the tank is filled with the liquid to be used and the closure 34—35 is screwed tightly to place. The operator then grasps the cylindrical tank as a handle and presses down the member 40 with one of his fingers. This opens the valve and also brings the lower mouth of duct 42 below the nut 37 so as to permit entrance of air to allow a free flow of liquid from the valve. As the liquid flows out, the brush is moved back and forth thereby distributing the liquid to the material to be cleaned and to the various bristles. When a sufficient quantity has been thus fed out, the finger piece is released and the spring automatically closes the valve and moves the air duct again to sealed position. The wells and connecting way will still hold a certain amount of liquid which will be gradually fed down to the bristles.

Should a fire occur the closed valve will prevent immediate ignition of the contents of the tank, but if the can is exposed to the fire for a long enough time so that there is danger of explosion, the fuse metal will melt permitting the liquid to burn from the can so that the fire will not be spread by the bursting of the can.

It will be also seen that the use of the can for a handle elevates the hand of the operator so that he will not be injured by striking against the type or other devices being cleaned. Furthermore, the weight of the tank and contents greatly lessens the amount of pressure required to be exerted by the operator. The use of this device also eliminates many operations necessary where an ordinary brush is used, as for instance the opening of the container, picking it up and pouring contents on the brush, reclosing the container, etc., and also avoids the loss of material usual in such cases.

Another feature is that the brush may be readily removed when worn out and replaced by a new one, and when the bristles are worn at one end, the brush may be reversed thus greatly increasing its life.

In the form of valve mechanism shown in Figure 3, the extrusion 20 is not made, the can being merely cut away at this point. The lower end of member 21 is thrust through this aperture, and a nut 23 screwed onto the outer end with a gasket or washer interposed between the nut 23 and the outer surface of the can. All other features are the same.

While we have described what is deemed to be the most desirable embodiments of our invention, it is obvious that many of the details may be varied without in any way departing from the spirit of the invention, and we therefore do not limit ourselves to the exact details of construction herein set forth nor to anything less than the whole of the invention limited only by the appended claim.

What is claimed as new is:—

A fountain brush comprising a cylindrical tank, a bristle carrying back having its upper face rounded to conform with the curvature of said tank, the closure ends of said tank being extended downwardly at the ends of the brush back for rigidly connecting the brush back and the tank, the rounded face being provided with spaced recesses in communication with each other through a groove provided in said back, and ducts leading from said recesses and grooves to the bristles.

In testimony whereof we have affixed our signatures.

WILLIAM CHAS. HERBERT.
FRANCIS X. SMITH.