(No Model.) 2 Sheets—Sheet 1.

J. STEVENS.

FOUNTAIN BRUSH.

No. 397,946. Patented Feb. 19, 1889.

Fig. 1.

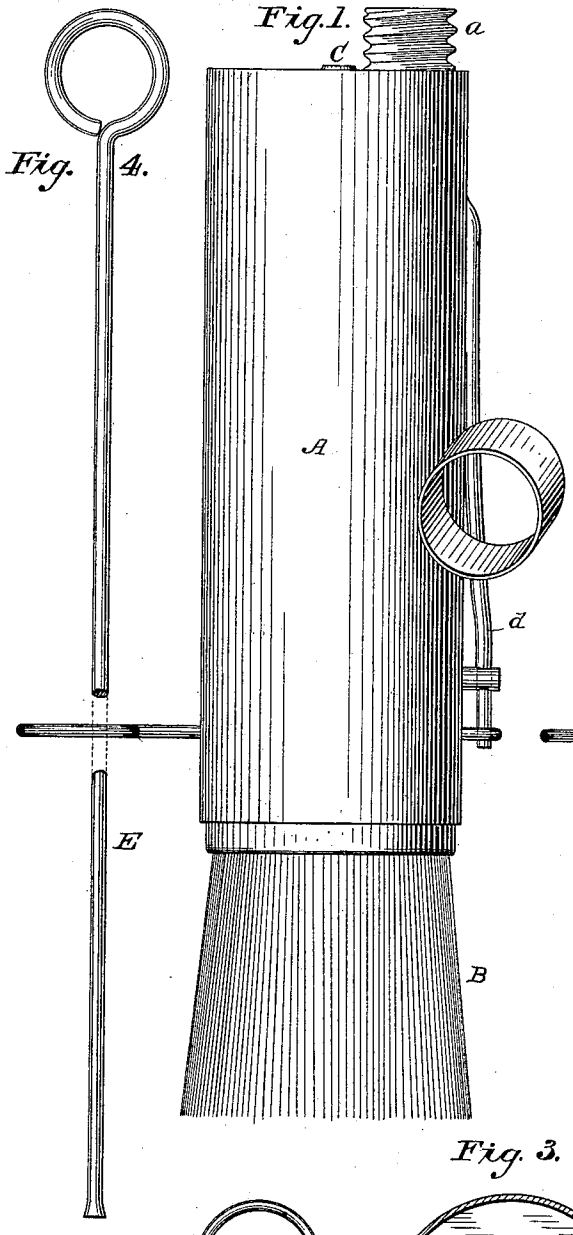


Fig. 4.

Fig. 2.

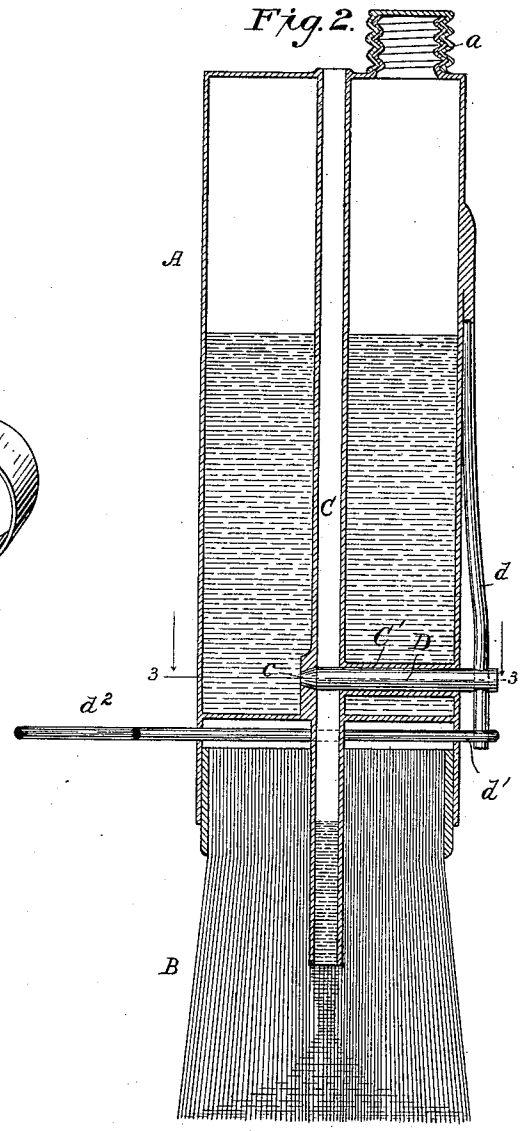
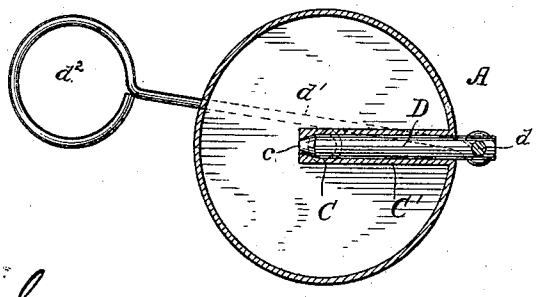


Fig. 3.



Witnesses,
Wm. A. Skinkle,
H. W. Elmore.

Inventor,
John. Stevens.

By his Attorneys

(No Model.) 2 Sheets—Sheet 2.

J. STEVENS.

FOUNTAIN BRUSH.

No. 397,946. Patented Feb. 19, 1889.

Fig. 5.

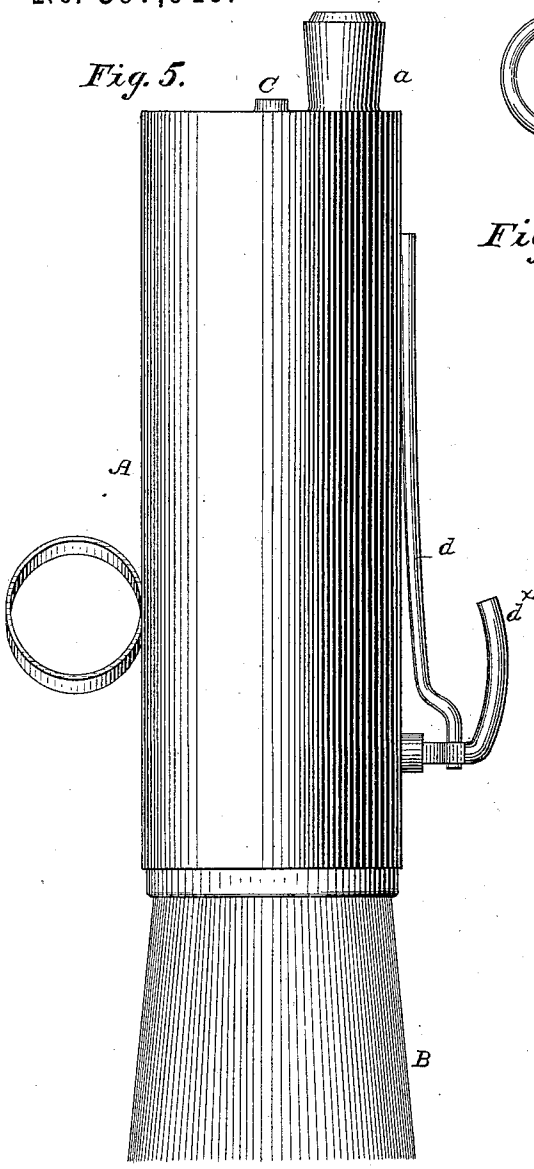


Fig. 8.

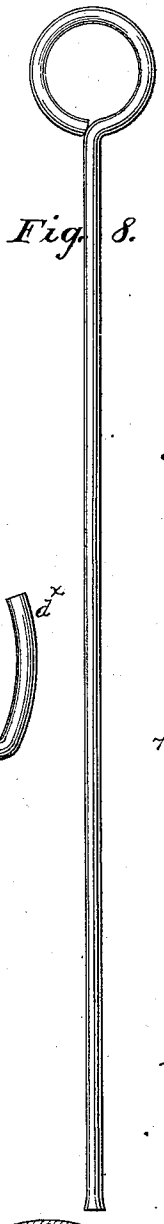


Fig. 6.

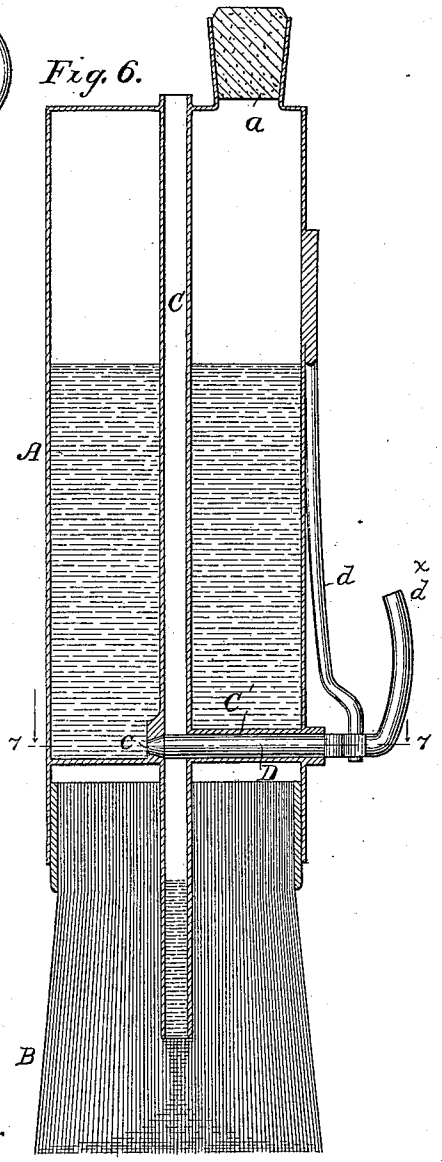
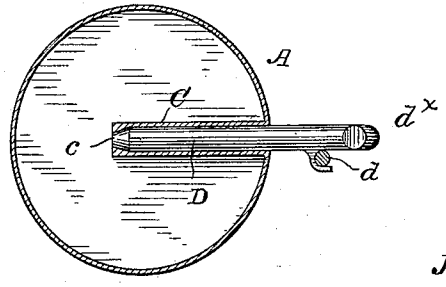


Fig. 7.



Witnesses,

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UNITED STATES PATENT OFFICE.

JOHN STEVENS, OF NEENAH, WISCONSIN.

FOUNTAIN-BRUSH.

SPECIFICATION forming part of Letters Patent No. 397,946, dated February 19, 1889.

Application filed July 5, 1884. Serial No. 136,798. (No model.)

To all whom it may concern:

Be it known that I, JOHN STEVENS, of Neenah, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Fountain-Brushes, of which the following is a specification.

My invention has for its object to bring the supply of fluid from the fountain or reservoir to the brush under more perfect control, and to provide improved means whereby the tube or fluid-duct will be kept from clogging.

Letters Patent of the United States No. 288,598 were granted to me on the 13th day of November, 1883, showing and describing a fountain-brush in which a tube led from the fluid-receptacle to the brush and was traversed by a clearing-plunger. A feed-aperture through one side of this tube was closed by a valve connected with a diaphragm in the wall of the reservoir, the valve-stem passing through and being exposed to the fluid contents and the valve acting to close the aperture at the same side that the fluid entered it. Thus the valve mechanism was constantly exposed to the corroding effects of the paint or other fluid within the reservoir, and there was a tendency of sediment and coagulated matters to collect in the valve-seat and be packed therein by the valve clogging the flow. The top of the tube also opened into the reservoir, and if the plunger was withdrawn the contents would flow therethrough without obstruction from the valve. If air-pressure was needed, it could only be obtained by unscrewing the cap at the head of the reservoir.

In the present case I propose to carry the main or fluid tube entirely through the reservoir, opening to the external air at the top or outer end thereof, as well as into the brush. A lateral tube therefrom connects with the external wall of the reservoir and receives the valve-stem, which is thereby entirely shielded and protected from the fluid. A feed-aperture is formed through the wall of the main tube opposite to the lateral tube and advisably flares from the exterior toward the interior of said main tube, so that whatever can enter its diminished opening into the reservoir may pass freely through and into the fluid-duct; but whatever stops in that diminished opening may be pushed back into the reservoir by the point of the valve when closed. The valve-stem also is of such diameter as to close the main tube when passed thereacross, and thus cut off the pressure of the air upon the liquid fed to the brush, permitting the clearing-plunger to be withdrawn and laid aside, if desired. An external spring presses upon the valve-stem and holds the valve normally closed, while a finger-piece, operated either by pressure or by pulling, according to its location or the intermediate mechanism, enables the valve to be opened whenever a fresh supply of fluid is to be delivered to the brush.

In the drawings hereto annexed, Figure 1 is a view in elevation of a stencil-brush, showing the means for holding it and operating the paint-supply. Fig. 2 is a sectional elevation showing the working parts in detail. Fig. 3 is a transverse section on the line 3 3 of Fig. 2. Fig. 4 shows the clearing-rod. Figs. 5, 6, 7, and 8 are views similar to those above described, except that the paint-supply valve is operated from the side from which it projects instead of from the opposite side, as shown in Figs. 1 and 2.

Similar letters indicate like parts.

A is the handle forming the reservoir and filled through a suitable aperture, *a*, provided with a screw-cap, and B the brush or distributer fixed to said reservoir at the proper end or in suitable relation thereto.

C is a tube rising from within the brush through the reservoir and extending therefrom, so as to freely admit air from the outside as well as fluid from the reservoir into the body of the brush, thus insuring a sufficiently rapid supply. This tube is perfectly straight and of the same diameter throughout, thereby enabling me to employ the clearing-rod, presently described, to eject any clogging matter. An opening, *c*, is made through the side of this tube just above the bottom of the reservoir, so that the contents of the latter may flow therefrom into the tube and be entirely drained down to the level of the aperture before refilling, the slight space beneath that level allowing for the deposit of sediment, and thus lessening the danger of clogging. This feed-aperture, instead of being of the same diameter through the entire wall of the tube, flares immediately from the point where it debouches into the reservoir to the point where it terminates in the cylindrical chamber of the tube, so that any par-

ticle sufficiently small to enter its diminished end may readily pass therefrom into the tube.

From the feed-tube C, at a point opposite the opening *c*, extends laterally a branch or guide tube, C′, which passes entirely through the reservoir, extending beyond its wall, and is loosely fitted with a valve or valve-stem, D, which is thereby protected from the surrounding body of fluid. This valve is suitably formed to close the feed-aperture from the reservoir—that is, it is shaped so that its sides will conform to the outline of the seat—and when the seat is flaring, as just described, the valve or its contact portion will of course be conical, as shown. Its stem moves freely in the guide-tube, crossing and filling the transverse area of the main tube and normally closing the feed-aperture, against which it is held by a spring, *d*, preferably located on the exterior of the reservoir.

To the spring *d* is attached a rod, *d′*, which, as shown in Fig. 2, passes across the under side of the reservoir and terminates in a finger-piece, d^2, located in such position that it can be conveniently manipulated by the operator's hand while the brush is being used.

In Figs. 5, 6, 7, and 8 is shown a modification of the above, the plunger D, to which the spring is attached in any suitable manner, being continued upward at its outer end, forming a finger-piece, $d^{\times}$, at a suitable distance from the handle.

The action of the plunger in closing the opening *c* and that of the spring upon the plunger is the same in both cases, the difference being that in the first instance the finger-piece is pressed inward to open the paint-valve, while in the second the finger-piece is pulled outward to produce the same result. In either case, when the valve is opened, paint is discharged from the reservoir into the main tube, which in turn discharges into the interior of the brush. A plunger or clearing-rod, E, of sufficient length to pass entirely through the tube, is provided. With it any obstruction which may form or become fast in the tube may be dislodged and pushed clear of the tube and bristles of the brush. When used in this way, the brush should be inverted to prevent the fluid escaping while the valve is withdrawn from across the main tube to permit the passage of the clearing-rod. The brush or distributer may be of bristles, sponge, or any suitable material, and brushes constructed in accordance with the principle of my invention may be severally used as paint or stencil brushes, dampening-brushes, or blacking or polishing brushes for shoes, and many other purposes.

It is not essential, as to other features of my invention, that the main tube should extend entirely through the reservoir, as air may be admitted to the upper portion of the reservoir by loosening the cap or cork, or in other ways; or the reservoir will discharge when shaken rapidly, as is done when the brush is in use. If it is not extended through the reservoir, the cleaning may be done from its lower end; but in my opinion the form shown is best adapted to perform the work. The superiority of the feeding devices in the present invention will be obvious to any one who has experienced the difficulty of maintaining a regular and rapid flow of paint to the brush, the upper end of the main tube being always open for the admission of air, and, the valve controlling the flow of paint, the condition of the brush can at all times be regulated to a nicety.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, in a fountain-brush, of a reservoir, a brush or distributer, a fluid-tube passing from the reservoir into the body of the brush or distributer, and having an inwardly-flaring opening through its wall within the reservoir to admit the contents of the latter, a lateral tube entering the fluid-tube opposite said opening, and extending thence through the wall of the reservoir, a valve and valve-plunger playing in said lateral tube and across the fluid-tube, and a spring pressing upon the valve-plunger to force the valve against said feed-opening.

2. The combination, substantially as hereinbefore set forth, in a fountain-brush, of a reservoir, a brush or distributer, a fluid-tube leading from the external air through the reservoir into the brush or distributer, and having a lateral feed-opening into the reservoir, a guide-tube connecting said fluid-tube opposite the feed-aperture with the wall of the reservoir, and a spring-pressed valve-plunger within said guide-tube adapted to normally close the feed-aperture and fluid-tube.

3. The combination, substantially as hereinbefore set forth, in a fountain-brush, of a reservoir, a brush or distributer, a straight fluid-tube passing entirely through the reservoir and into the body of the brush, open at one end to admit air and receive a clearing-rod and at the other to discharge fluid, and having a lateral feed-aperture opening into the reservoir, a guide-tube entering the fluid-tube opposite said aperture and extending through the exterior wall of the reservoir, a valve-plunger playing through said guide-tube and across the fluid-tube to close it and the feed-aperture, a spring connected to said plunger to hold the valve closed, and means whereby the valve may be opened by the finger.

4. The combination, substantially as hereinbefore set forth, in a fountain-brush, of a reservoir, a brush or distributer, the tube C, with aperture *c*, the cross-tube C′, valve-plunger D, spring *d*, and rod *d′*, passing from said spring across the under side of the reservoir to the opposite side thereof, whereby the pressure of a finger may open the valve.

JOHN STEVENS.

Witnesses:
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ROBT. SHIELLS.