July 10, 1928. 1,676,857

J. J. CHÉRON

FOUNTAIN BRUSH

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Fig.1

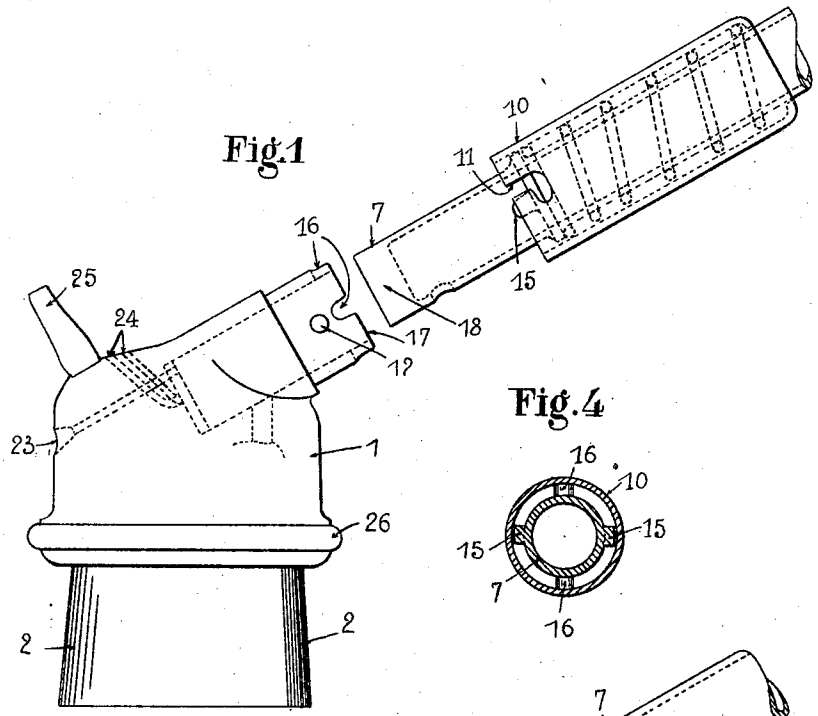


Fig.4




Fig.2

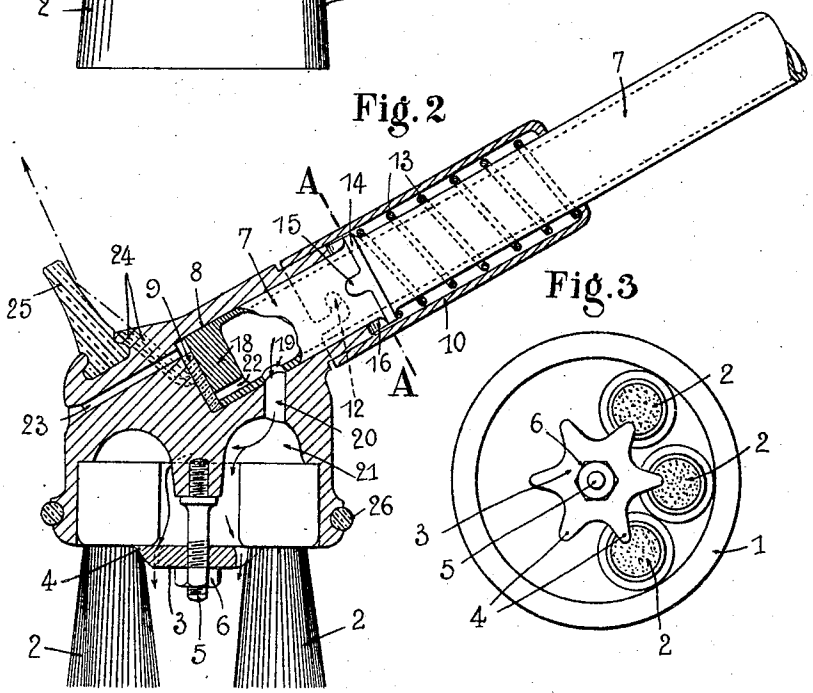


Fig.3




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Fig. 5

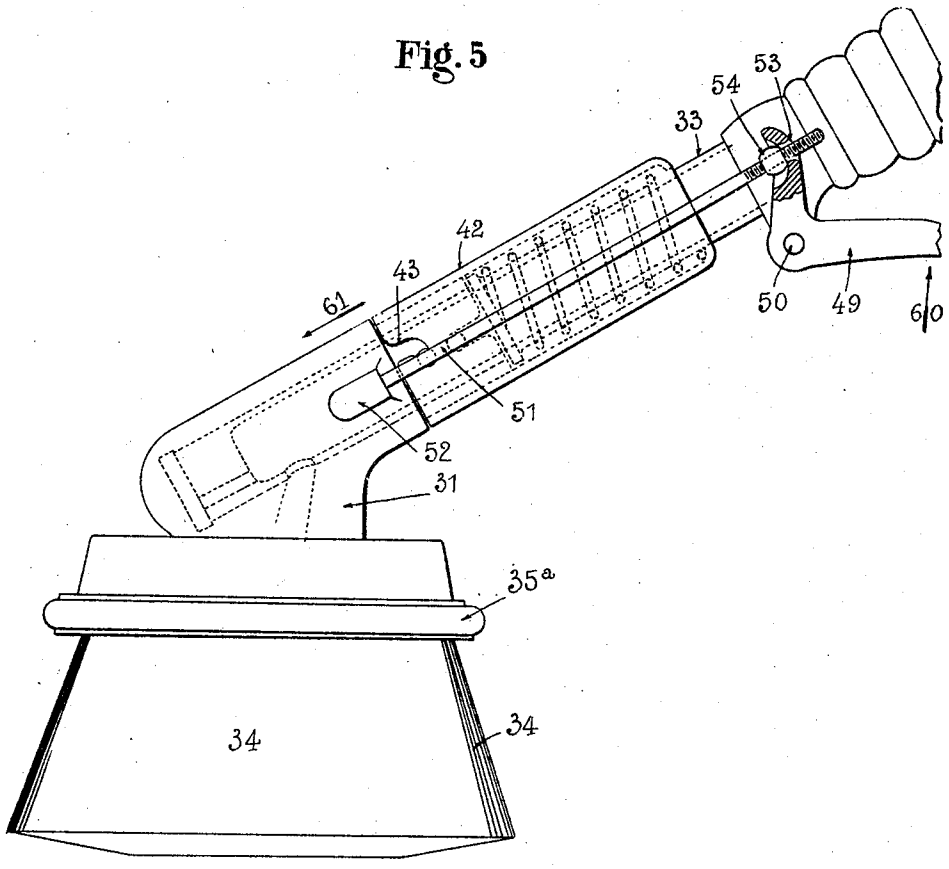


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Fig. 6

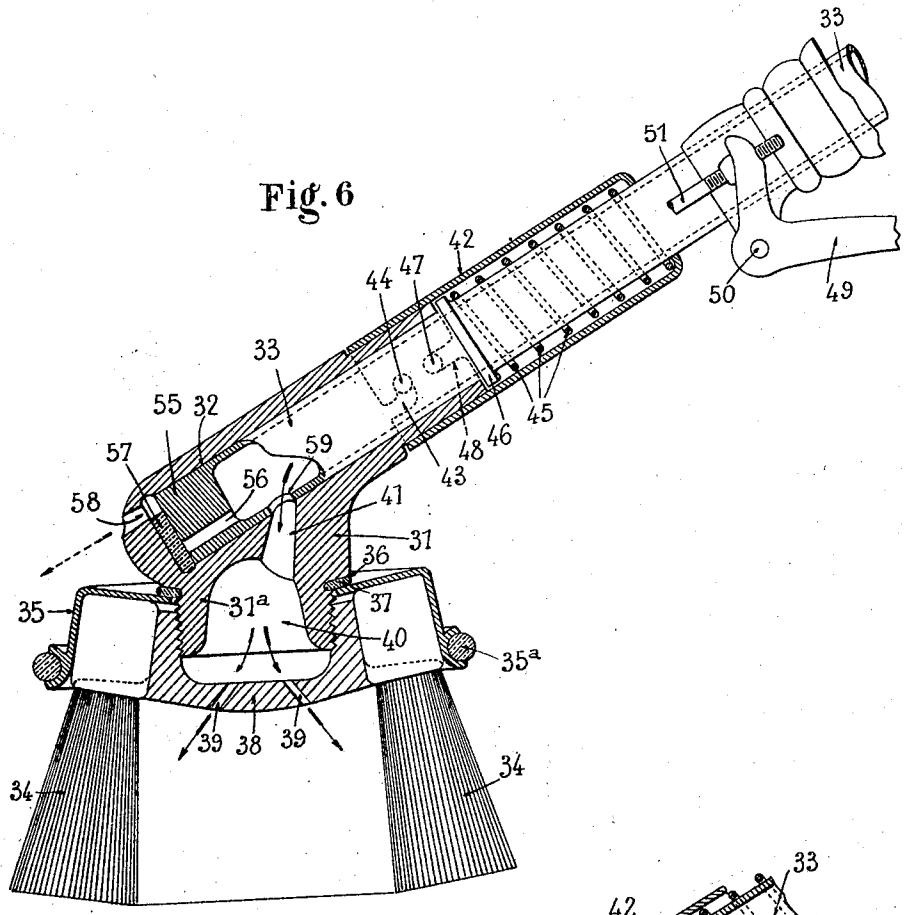
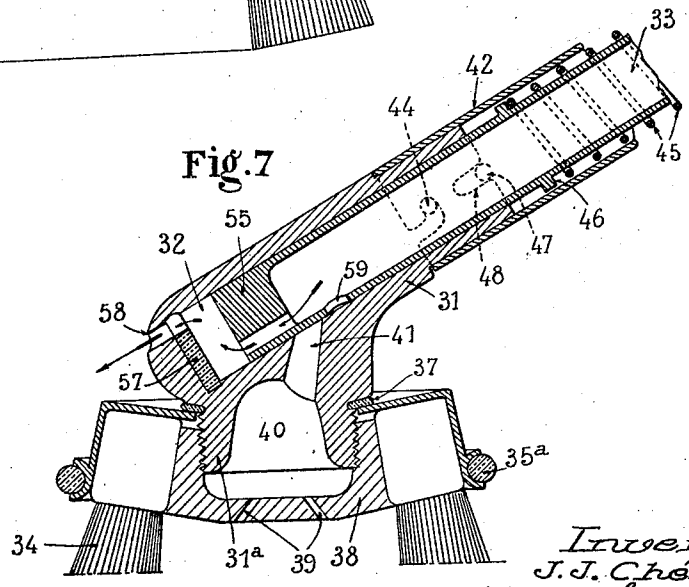



Fig. 7

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# UNITED STATES PATENT OFFICE.

JULES JEAN CHÉRON, OF PARIS, FRANCE.

## FOUNTAIN BRUSH.

Application filed February 17, 1925, Serial No. 9,864, and in France February 19, 1924.

The present invention relates to fountain brushes or self-feeding brushes, i. e. brushes which are provided with a hollow handle for the water supply, opening into the main body of the brush carrying the tufts of bristles and secured in a yielding manner to said body.

According to the invention the end of said hollow handle which opens into the brush body is adjusted in a water tight manner in said body and is adapted to be moved therein, either by rotation, or by longitudinal sliding, in order to modify, according to the relative position of the handle and the brush body, the outlet of the water, by covering or uncovering the various water outlet parts or conduits of said body.

The fountain brushes according to the invention are thus of a simple and inexpensive construction and can be used for all cleaning purposes, in particular for cleaning vehicles, shop fronts, etc.

Other features of the invention will appear from the following description and claims.

In the appended drawings, which show by way of example various embodiments of the invention,

Fig. 1 is an outer view of the brush with the hollow handle removed from the brush body.

Fig. 2 is a longitudinal section of the brush, the handle being in the position corresponding to the flow of the water along the bristles.

Fig. 3 is a bottom plan view, showing only a limited number of the tufts of bristles.

Fig. 4 is a section on the line A—A of Fig. 2.

Fig. 5 is an elevation of a modification, the handle being in the normal position ensuring the water flow along the bristles.

Fig. 6 is the corresponding longitudinal axial section of said modification.

Fig. 7 shows the position of the handle in the main body of the brush in order to provide for the discharge of the water in the form of a stream.

In the construction shown in Figs. 1 to 4, 1 is the head of the brush in which are disposed the tufts of bristles 2. The said tufts are maintained by a star-shaped member 3 whose arms 4 respectively support one tuft; the said member 3 is engaged upon a screw-threaded rod 5 which is secured to the head and is held in place by the nut 6. The hollow handle 7 is engaged with slight friction in a cylindrical recess 8 of the said head, at the bottom whereof is provided the packing member 9. The said handle is secured to the head by means of the socket 10 having therein the slots 11 whereby a bayonet joint is formed with the studs 12 mounted on the outer surface of the head. A coil spring 13 which bears upon a shoulder 14 on the said handle acts to retain the latter in position on the brush head.

The handle comprises one or more bosses or studs 15 co-operating with notches 16 formed in the edge of the recess 8 of the head.

The end of the handle 7 in the head of the brush is closed by a plug 18 which may be integral with the handle or may be separately secured thereto.

In the wall of the hollow handle is an orifice 19 which, for a determined angular position of the handle relatively to the head 1 of the brush, will register with a conduit 20 communicating with the chamber 21 of the head 1.

In the plug 18 is formed the duct 22 which for certain angular positions of the handle may be caused to register with a conduit 23 or a conduit 24. The latter conduit opens above a scraper 25 made of india rubber or any other material and secured to the head of the brush; the said scraper may also be made of metal and may be cast integral with the head. The conduit 23 opens below the said scraper. At 26 is disposed a round elastic member in order to obviate all contact between the metal part of the brush and the objects to be cleaned.

The operation of the brush is as follows:

The handle 7 being attached to the head by means of the bayonet socket 11, the boss 15 is engaged in one of the slots 16 in such manner that the orifice 19 shall not register with the conduit 20 and that the duct 22 shall not register with the conduit 23 nor the conduit 24; in this manner the water entering the said hollow handle will find no outlet, due to the friction engagement of the said sleeve in the head and also to the packing joint at 9.

If it is desired to supply water to the brush, the handle is turned in the head, the handle being first drawn back against the action of the spring 13 so as to release the boss 15 from the notch 16 in which it was engaged; when the orifice 19 registers with

the conduit 20, the boss 15 may engage another notch 16 in which it is maintained by the spring 13. The water will now enter the chamber 21 and will flow therefrom along the bristles of the brush, passing between the branches 4 of the star-shaped member 3.

If the device is to be used as a hose, the handle is turned in the brush and the conduit 22 is made to register with the conduit 23. In order to cause the water to flow along the scraper 25, the conduit 22 is made to register with the conduit 24. In each of these two positions, the boss 15 is fitted closely into a corresponding recess 16.

A plurality of small ducts 24 may be made to register with the conduit 22 so as to obtain instead of a single stream of water a multiple stream or shower such as is provided by a watering pot or like sprinkling device.

Obviously, instead of employing the above-described bayonet joint for the mounting of the socket 10 upon the head of the brush, the said socket may be attached by screwing, by a simple fitting with suitable fastening means, or in like manner.

The arrangement comprising the bosses 15 and the recesses 16, for determining the exact positions of the said handle relatively to the head of the brush, may be inverted, the bosses being formed upon the head and the recesses in the said handle.

In the construction shown in Figs. 5 to 7, the head of the brush has a cylindrical recess 32 in which is engaged the end of the hollow handle 33 to whose outer end the water is supplied by a hose or like conduit. The elements 34 of the brush are disposed in the casing or cap 35 which surrounds the hollow extension 31 of the head; the cap 35 is applied against the shoulder 36 with the interposition of the packing washer 37. The whole is maintained by a star-shaped nut 38 forming a cap which is screwed upon the extension 31. The said nut has at the periphery a set of recesses in each of which is disposed one of the brush elements 34. In the drawings, the said recesses consist of cut-out portions in the nut 38.

It will be observed that by screwing the nut the brush elements are pressed against the cap 35 and the latter is thus pressed tightly upon the packing 37. The nut 38 has formed therein the apertures 39 whereby the water will be preferably directed towards the end of the bristles of the brush element, the water entering the chamber 40 of the head through the conduit 41 in such manner as to evacuate to the exterior the impurities which may be detached when washing with the brush.

The edge of the cap 35 is provided with a round elastic band $35^a$, for instance of india rubber, preventing all accidental contact between the metal and the objects to be cleaned.

The hollow handle 33 is maintained upon the head 31 by the socket 42 which has therein the slots 43 whereby it forms a bayonet joint with the studs 44 formed on the head; a spring 45 which bears upon a shoulder 46 on the said handle acts to retain the latter in position on the brush head. The handle further comprises the nibs 47, which engage in the slots 48 of the head and serve to prevent the rotation of the handle in the head but allow a relative longitudinal motion of these two parts.

By way of example, this longitudinal motion is shown as controlled by a bent lever 49 pivoted on the axle 50 which is mounted on the said handle near the part which is to be held in the hand; said lever acts upon the rod 51 which is attached at the other end to a boss 52 cast integral with the head. It should be noted that in order to facilitate the mounting and removal of the said handle relatively to the head, the rod 51 is inserted loosely through an aperture 53 in the lever 49 and the latter acts upon a nut 54 screwed on the said rod. When the handle is removed from the head, it carries only the lever 49, whilst the rod 51 remains connected with the head.

The end of the hollow handle 33 opposite the water inlet end is closed by a plug 55 which may be cast integral or separately secured to the handle; said plug has formed therein an orifice 56, whilst the head of the brush as well as the elastic washer 57 disposed at the bottom of the recess 32 have therein the apertures 58 which do not register with the orifice 56 but are open to the exterior. The wall of the hollow handle has therein the orifice 59 which registers with the conduit 41 when the end of the handle 33 comes into contact with the end of the recess 32.

The operation of the brush is as follows:

The handle being mounted upon the head, the spring 45 presses the end of the said handle against the elastic packing 57 so that the orifices 56 and 58 will be closed; since at this time the orifice 59 registers with the conduit 41, the water entering the handle will flow into the chamber 40 and thence through the holes 39, thus moistening the bristles of the brush elements 34 as shown in Fig. 6.

By acting on the lever 49 according to the arrow 60, Fig. 5, the main body of the brush will be displaced relatively to the handle according to the arrow 61, compressing the spring 45. The nibs or studs 47 will slide in the slots 48, thus preventing all rotation of the head with respect to the handle.

Due to this rectilinear motion, the orifice 59 will no longer register with the conduit 41, and the plug 55 is no longer in contact with the washer 57. The water supplied by the handle can now flow through the orifice

56; it will fill the space between the end of the recess 32 and the end of the handle 33, and escapes to the exterior in the form of a stream through the orifice 58 (Fig. 6). If the lever 49 is released, the spring 45 will return the parts into the position shown in Figs. 5 and 6, so that the water no longer flows through the orifice 58 but again flows along the bristles of the brush.

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

1. A fountain brush comprising in combination: a head carrying the bristles at its lower part and having therein a recess and water outlet conduits which open at one end into said recess, some of said conduits opening at their opposite end towards the bristles and the other conduits opening at the forward part of the head, a hollow water supply handle guided at one end in said recess and having a watertight fit therein, a plug for closing the end of the handle, outlet ports in said end of the handle and in the plug and adapted to respectively and alternatively register with said outlet conduits according to the position of the handle with respect to the head and means for assembling the handle with the head and whereby a relative displacement is permitted between the same.

2. A fountain brush comprising in combination: a head carrying the bristles at its lower part and having therein a recess and water outlet conduits which open at one end into said recess, some of said conduits opening at their opposite end towards the bristles and the other conduits opening at the forward part of the head, a hollow water supply handle guided at one end in said recess and having a watertight fit therein, a plug for closing the end of the handle, outlet ports in said end of the handle and in the plug and adapted to respectively and alternatively register with said outlet conduits according to the position of the handle with respect to the head and means for assembling the handle with the head and whereby said plug is normally caused to bear in a watertight and yielding manner upon the bottom wall of said recess.

3. A fountain brush comprising in combination: a head carrying the bristles at its lower part and having therein a recess and water outlet conduits which open at one end into said recess, some of said conduits opening at their opposite end towards the bristles and the other conduits opening at the forward part of the head, a hollow water supply handle guided at one end in said recess and having a watertight fit therein, a plug for closing the end of the handle, outlet ports in said end of the handle and in the plug and adapted to respectively and alternatively register with said outlet conduits according to the position of the handle with respect to the head, an assembling member having a bayonet connection with the head and a spring in engagement with the assembling member and the handle.

4. A fountain brush according to claim 1, in which the handle is slidably mounted in the head so as to be capable of an axial displacement with respect to the head.

5. A fountain brush according to claim 1, in which the handle is slidably mounted in the head and comprising also a lever pivoted on the handle and a thrust rod pivoted to said lever and in engagement with the head, whereby the handle may be displaced axially with respect to the head.

In testimony whereof I have signed my name to this specification.

JULES JEAN CHÉRON.