G. H. POOLE.

HYDRAULIC FOUNTAIN BRUSH.

APPLICATION FILED DEC. 16, 1914.

1,252,837. Patented Jan. 8, 1918.

Fig. 1.

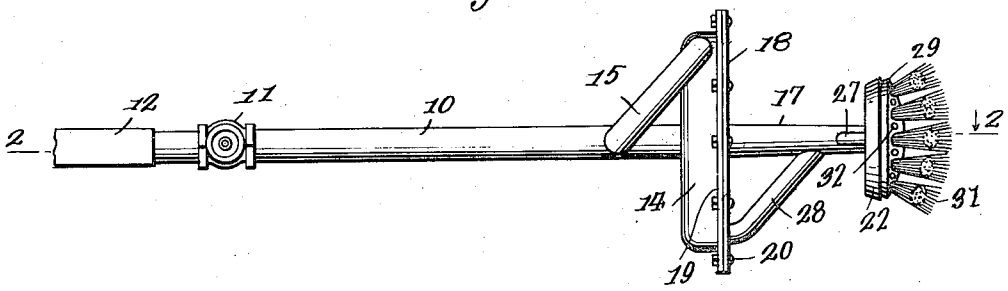


Fig. 2.

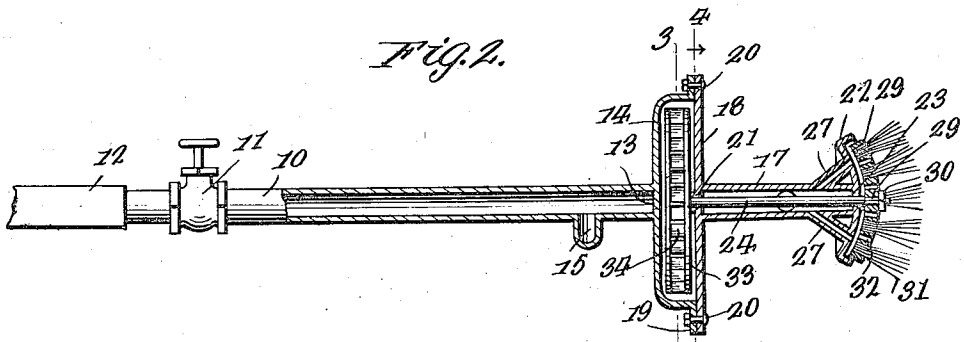


Fig. 3.

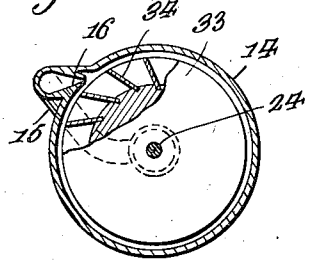


Fig. 4.

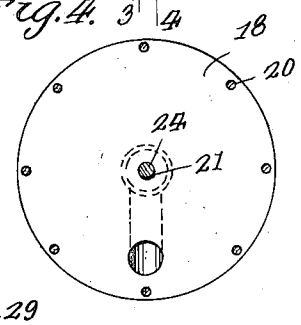
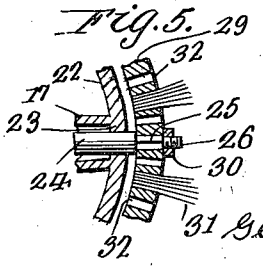


Fig. 5.



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HYDRAULIC FOUNTAIN-BRUSH.

1,252,837. Specification of Letters Patent. Patented Jan. 8, 1918.

Application filed December 16, 1914. Serial No. 877,577.

To all whom it may concern:

Be it known that I, GEORGE HOWARD POOLE, a subject of the King of Great Britain, residing at Perth, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Hydraulic Fountain-Brushes, of which the following is a specification.

This invention relates to an improved hydraulic fountain brush and the principal object of the invention is to provide a brush of the character described which is so constructed that the brush carrying shaft may be rotated by water engaging the cup of a turbine motor and the water then returned to the casing through which the brush carrying shaft passes to the rear of the brush head through which it passes.

Another object of the invention is to so construct the casing that it may be removed from the housing in which the turbine is mounted, thus permitting easy access to the turbine for repairs or cleaning.

Another object of the invention is to provide a brush of the character described which is so constructed that it may be easily cast and very easily assembled or taken to pieces.

Another object of the invention is to so construct the improved brush as to require a very few parts, the handle and shaft casing which form conduits being formed respectively in single pieces and the brush and turbine motor being mounted upon a common shaft extending through the casing.

This invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a view showing the improved brush in side elevation,

Fig. 2 is a sectional view taken along the line 2—2 of Fig. 1,

Fig. 3 is a sectional view taken along the line 3—3 of Fig. 2,

Fig. 4 is a sectional view taken along the line 4—4 of Fig. 2,

Fig. 5 is an enlarged fragmentary sectional view showing the manner of releasably connecting the brush head with its supporting shaft.

The hollow handle 10 which forms a conduit is provided adjacent its inner end with a valve 11 and has its inner end connected with a fluid supply pipe 12 in any suitable manner. The outer end of the handle is closed by the web 13 which forms the center of the housing or casing 14 and is provided with a branch 15 which leads from the forward end portion of the handle and communicates with the housing 14 as shown in Figs. 1 and 3 with its ends at the housing constricted to form a nozzle 16. This nozzle is positioned as shown in Fig. 3 so that the water which passes through the same will have a tendency to circulate in the housing instead of passing diametrically across the housing.

The casing 17 is provided at its inner end with a head 18 which fits against the flange 19 of the housing 14 and is secured thereto by means of bolts 20. A water tight joint should be provided between the flange 19 and head 18 by any suitable means so that there will be no leakage of water when this brush is in operation. In the center of the head 18 there is formed a bearing to support a shaft which will be hereinafter described.

At the forward end of the casing 17 there is provided a cup 22 the central portion of which forms a bearing 23 for the shaft 24. This shaft 24 is rotatably mounted in the bearings 21 and 23 and extends into the housing 14 and also beyond the cup 22 with its outer end portion 25 squared and then reduced and threaded as shown at 26 in Fig. 5. Branches 27 lead from the casing 17 and communicate with the cup so that water which passes through the lead pipe 28 connecting the housing 14 with the casing 17 may pass through the branches 27 into the cup.

Upon the outer end portion 25 of the shaft 24 there is mounted a brush head 29 which is rigidly held upon the squared portion of the shaft by the nut 30 mounted upon the threaded end portion 26 of the shaft. The brush head can therefore be easily removed if the brush bristles 31 are worn out and a new brush head quickly put in place. Openings 32 are formed in the brush head so that water which passes into the cup through the branches 27 can pass through the brush head and be sprayed upon the vehicle or other article which is being cleaned. By having the brush head spaced from the bottom of the cup as clearly shown in Figs. 2 and 5 there is provided a space in which the water can circulate and thus be evenly distributed and practically the same amount of water pass out of all of the openings 32.

It is desired to have the shaft 24 rotate and therefore the turbine motor 33 has been

rigidly secured to the inner end of the shaft 24 within the housing 14 with its abutment plates 34 extending as shown in Fig. 3 for engagement by the jet of water which passes out of the nozzle 16. When the motor 33 is rotated it revolves the shaft 24 and of course the brush 29 will also rotate. The water after passing around the housing 14 to rotate the motor will pass out through the pipe 28 and enter the casing 17 through which it will pass and then pass into the cup through the branch pipes 27. It should be noted that the branch 28 enters the casing 17 adjacent the pipes 27 and that therefore the water will more readily enter these branches and will circulate in the space between the bottom of the cup 22 and the brush head and then pass out through the openings 32.

If it is desired to take this brush to pieces for cleaning or to remove broken parts and replace them the bolts 20 are removed and the head 18 will then be detached from the flange 19. After the head has been detached the brush can be removed from the shaft 24 and the shaft can then be drawn outwardly through the casing, if necessary, thus giving free access to the branch pipes 27 for cleaning purposes. The pipe 28 can be cleaned by thrusting a cleaning instrument into the end which opens at the head 18 as shown in Fig. 4. If it is only desired to replace the brush it is not necessary to take the device completely apart but the nut 30 can be removed thus releasing the brush and permitting it to be drawn off of the squared portion 25 of the shaft. A new brush can then be put in its place and the nut 30 replaced.

I have therefore provided a cleaning brush which is very simple in construction and easy to assemble or take apart while at the same time I have provided a brush which will be very strong and durable and not liable to easily get out of order. It will be further noticed that the shaft 24 acts as a common means for mounting the motor and brush head and that the casing 17 not only serves as a carrying member for the rotary shaft 24 but also acts as a conduit through which the water may pass to the brush head after serving as a medium for rotating the motor.

What is claimed is:,

A cleaning device comprising a hollow inner handle section, a hollow outer section, a housing carried by and closing the outer end of the inner handle section, a conduit leading from the inner handle section and communicating with the side of the housing, a closure for the housing carried by the outer section and forming a bearing at the inner end of the outer section, a cup carried by the outer end of the outer section and forming a bearing at the outer end thereof, a conduit leading from the closure and communicating with the outer section, conduits leading from the outer section and communicating with said cup, a shaft extending through the outer section and journaled in the bearings of the closure and cup, a fluid motor carried by said shaft and positioned within said housing, and a perforated brush head carried by said shaft and positioned within the cup.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE HOWARD POOLE.

Witnesses:

LAURA POOLE,

SUSAN POOLE.