June 23, 1931. W. MARSH 1,811,512

FOUNTAIN BRUSH

Filed Sept. 16, 1929

Fig. 1.

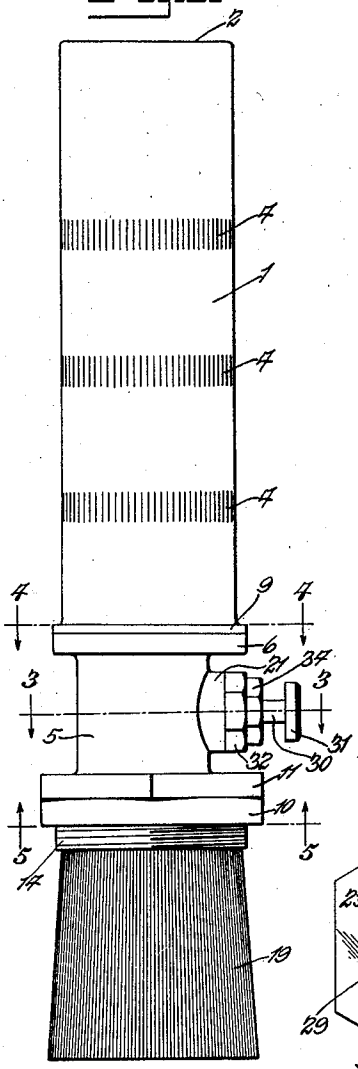


Fig. 2.

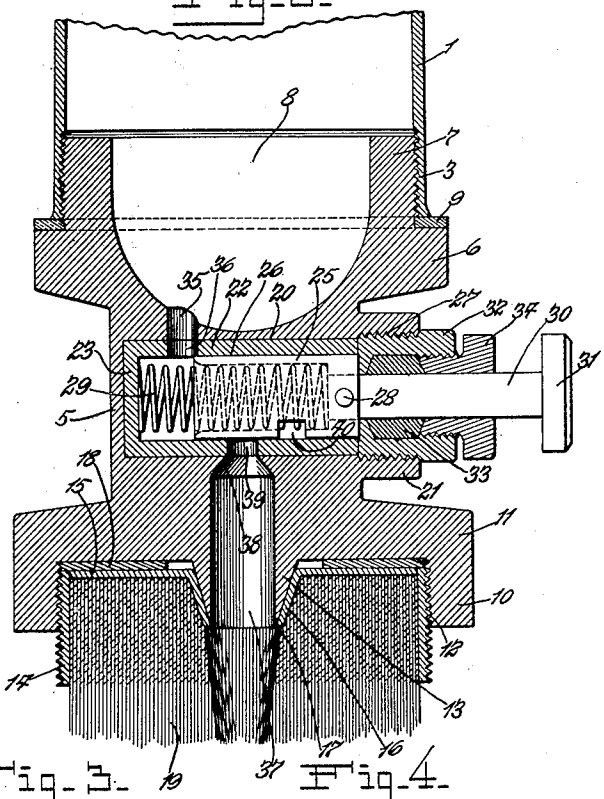


Fig. 3.

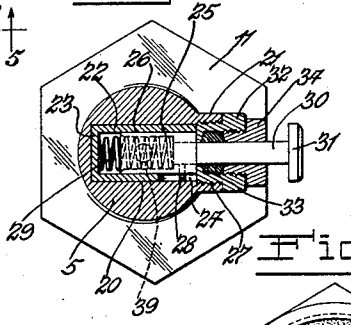


Fig. 4.

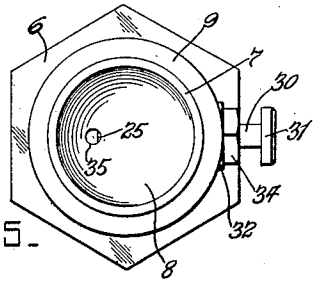


Fig. 5.

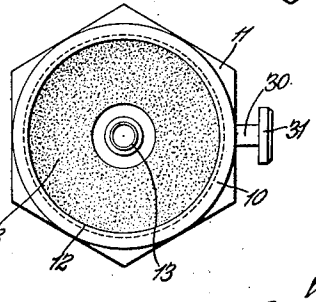
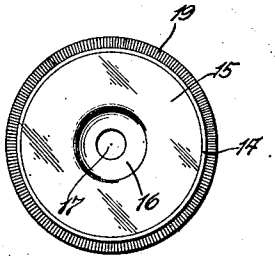


Fig. 6.



Inventor:
Walt Marsh,
by Kippey & Klingsland.
His Attorneys.

Patented June 23, 1931 1,811,512

UNITED STATES PATENT OFFICE

WALT MARSH, OF BELLEVILLE, ILLINOIS, ASSIGNOR TO MARSH STENCIL MACHINE COMPANY, OF BELLEVILLE, ILLINOIS, A CORPORATION OF ILLINOIS

FOUNTAIN BRUSH

Application filed September 16, 1929. Serial No. 392,821.

This invention relates to improvements in fountain brushes, and consists of the novel construction hereinafter disclosed.

An object of the invention is to provide a fountain brush wherein the neck is fed from a receptacle to the bristles through a valve constructed to form a forced feed which is positive in action and which will deliver, under pressure, a measured quantity of ink to the bristles upon each manual operation of the valve.

The detailed advantages of the invention will be apparent from the following description taken in connection with the accompanying drawings in which—

Fig. 1 is a vertical elevation of the brush.

Fig. 2 is a vertical section illustrating the internal construction of the feeding mechanism.

Fig. 3 is a cross section taken substantially on the line 3—3 of Fig. 1.

Fig. 4 is a cross section taken substantially on the line 4—4 of Fig. 4.

Fig. 5 is a cross section taken substantially on the line 5—5 of Fig. 1.

Fig. 6 is a top plan view of the brush tip removed from the assembly.

In the embodiment of the invention the construction is shown as including a hollow cylindrical handle 1 having a top wall 2 closing the upper end thereof, and a lower portion of the handle being internally threaded at 3. The external wall of the handle has a plurality of spaced knurled bands 4 to facilitate the handling of the brush.

A body member comprising a casting, preferably of aluminum or some other light metal, is adapted to be attached to the handle. The body member is formed with a central substantially cylindrical portion 5 having an enlarged portion which includes a flange 6, a threaded cylindrical portion 7 and a recess 8 formed in the top wall thereof. The threaded portion 3 of the handle threads over the portion 7 of the neck member and a tight joint is formed between the two elements by interposing a washer 9 between the lower end of the handle and the shoulder formed by the flange 6. The lower portion of the neck member is integrally formed with the intermediate portion, said lower portion comprising a circular bottom section 10, above which is a polygonal band 11 to facilitate the connection of the brush tip therewith. In the bottom wall of the lower portion of the neck member is a cylindrical recess having its internal wall threaded, as indicated at 12. The axial portion of the bottom wall within the recess is formed with a conical projection 13.

The tip member of the brush comprises a base piece including an externally threaded ring 14 and a top wall 15. The top wall may be integral with the ring, or may be a separate piece. The top wall has an internal axial downwardly deflected wall 16 with a central opening 17 therein. In connecting the brush tip with the body portion the ring 14 is threaded into the threads 12 and a ring washer 18 is interposed between the upper face of the brush tip and the base of the recess formed in the lower portion of the body member. The bristles 19 are set into the ring 14 whereby they are held in assembly therewith.

A transverse cylindrical opening 20 is formed in the body member, said opening extending through one wall thereof across the axis of this portion of the body member. Extending beyond the side wall of the portion 5 of the body member is a hollow boss 21 in axial prolongation of the opening in the body of the member, said boss being internally threaded. Within the opening 20 there is inserted a valve cylinder 22 open at one end and closed at the opposite end by a wall 23. The valve cylinder has a longitudinally extending notch 24 at its open end constituting a guideway for the valve piston. Within the valve cylinder is a slide valve piston 25 having an internal recess 26 and a reduced internal threaded opening 27 in axial prolongation of the recess.

A pin 28, located near the outer end of the piston, extends from the side wall thereof and operates in the recess 24, thereby constituting a guide for the piston and preventing it from rotating.

An expansion spring 29 is interposed between the end wall of the piston cylinder and

the base of the recess 26 formed thereby, said spring normally tending to actuate the valve piston to its outer position. A plunger comprising a stem 30 and a finger piece 31 is connected with one end of the piston by threading into the reduced opening 27 in the end thereof. The stem 30 of the plunger extends through a packing gland 32 threaded into the boss 21, the inner end of the gland bearing against the end of the valve cylinder and the end of the valve to hold the same in place. A quantity of packing 33 is seated around the stem 30 and is held in place by a packing nut 34, thus preventing leakage at the entrance of the stem of the plunger into the internal valve construction. In the bottom of the recess 8 and offset from the axis thereof is an opening 35 which registers with an opening 36 through the wall of the valve cylinder.

Extending axially of the neck member and through the bottom portion thereof is an enlarged opening 37 having a tapered top wall 38, the opening registering at its upper end with an opening 39 through the wall of the valve cylinder. The lower portion of the opening 37 extends downwardly through the body of the neck member and through the conical enlargement or projection 13. The throat of the opening 37 is, therefore, well below the upper face of the bristles and within the group of bristles.

In the operation of the device the ink that accumulates in the recess 8 flows through the passage way formed by the openings 35 and 36 into the end of the valve cylinder and into the recess formed therein. The normal position of the valve is such that this passage way is open. When the plunger is pressed inwardly against the tendency of the spring 29 the slide valve moves so that the end thereof closes the throat of the opening 36. Continued inward movement of the valve compresses the ink trapped therein, so that when the opening 40, formed through the wall of the valve piston, registers with the opening 39, the fluid is forced out under pressure into the body of the bristles.

It is obvious, therefore, that the construction has the advantage of providing a positive pressure for feeding the inking fluid upon each operation of the plunger, as the flow of the fluid is not dependent upon gravity. The brush may be used either in a vertical or horizontal position, and a predetermined amount of liquid will be positively delivered and will be under control of the operator at all times.

In fountain brushes of known construction, considerable difficulty is experienced with the feed of the viscous fluid to the brushes by reason of the same clogging. This is avoided in the present construction because of the forced feed which cleans out the passage each time a measured quantity of fluid is forced therethrough. Due to the forced feed, fresh inking fluid is forced throughout the body of the bristles and is distributed evenly and quickly.

I am aware that the invention may be modified in numerous particulars without departure from the nature and principle thereof. I do not limit myself in unessential particulars, but what I claim and desire to secure by Letters Patent is:

1. A fountain brush comprising a body member having in one end an inlet opening and in the opposite end an outlet opening that is out of alinement with said inlet opening, a device mounted in said body member between said openings controlling passage of fluid from said inlet opening to said outlet opening, a receptacle in connection with that end of said member having said inlet opening, an internally threaded extension in connection with the opposite end of said member concentric with said outlet opening, a ring screwed into said extension, a wall attached to the upper portion of said ring, a downwardly tapered central portion in connection with said wall, a downwardly tapered portion in connection with said body surrounding said outlet opening and engaging said tapered portion of said wall, and brush bristles having their upper ends clamped between said ring and said downwardly tapered wall portion for receiving and distributing the substance discharged from said outlet opening.

2. A fountain brush comprising a receptacle, a body member attached to one end of said receptacle and having an opening communicating with said receptacle and having a discharge opening in its opposite end, an internally threaded circular portion projecting from said opposite end of said receptacle, a downwardly tapered projection coaxial with said circular portion and surrounding the adjacent opening, and means located in said body between said openings for regulating the discharge of the contents of said receptacle through said openings, in combination with a brush device comprising a ring removably screwed in said circular portion, a wall rigid with said ring, a downwardly tapered portion in connection with said wall seating against said downwardly tapered projection of said body member, and a mass of brush bristles having their upper ends clamped between said ring and said downwardly tapered portion of said wall and arranged to distribute the substance discharged thereto from said receptacle.

WALT MARSH.