No. 818,666. PATENTED APR. 24, 1906.

J. CADDELL & A. SUTHERLAND.

FOUNTAIN BRUSH.

APPLICATION FILED JUNE 3, 1905.

Fig. 1.

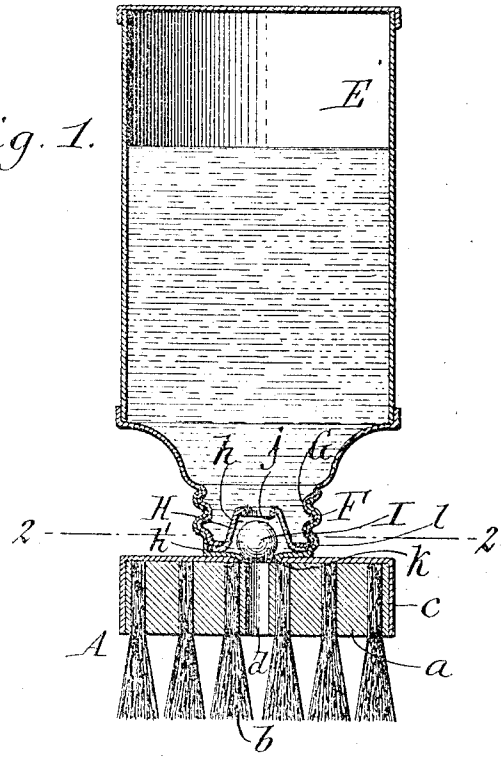
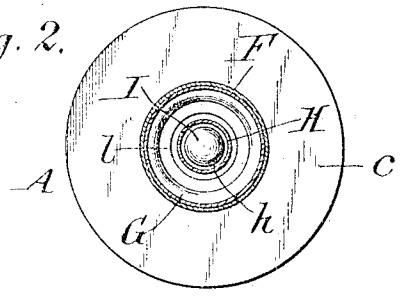


Fig. 2.



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UNITED STATES PATENT OFFICE.

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FOUNTAIN-BRUSH.

No. 818,666. Specification of Letters Patent. Patented April 24, 1906.

Application filed June 3, 1905. Serial No. 263,531.

To all whom it may concern:

Be it known that we, JAMES CADDELL and ALEXANDER SUTHERLAND, citizens of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Fountain-Brushes, of which the following is a specification.

This invention relates to a brush in which the liquid is supplied from a fountain connected with the brush.

The object of our invention is the production of a brush of this character which is more particularly designed for applying liquid polish to stoves: and the invention to that end consists, essentially, in so constructing the brush that the same can be attached directly to the cans in which the liquid polish is marketed and to provide a valve mechanism which shuts off the connection between the can and the brush when turned either up or down, but permits the liquid polish to flow from the can to the brush in the act of moving the same while in use.

In the accompanying drawings, Figure 1 is a vertical section showing our improved brush applied to a liquid-supply can or reservoir. Fig. 2 is a horizontal section in line 2 2, Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

A represents the brush whereby the liquid is spread over the surface to be coated. This brush may be variously constructed, but consists, preferably, of a wood stock *a*, carrying the bristles *b*, and a sheet-metal jacket *c*, fitting over the stock. Extending from the upper to the lower side of the stock and jacket in the central parts thereof is a conduit or passage *d*, through which the liquid to be spread is conducted to the bristles of the brush. This liquid is supplied from a can, fountain, or reservoir E, which has its outlet connected with the delivery conduit or passage *d*. As shown in the dawings, this can is constructed of sheet metal and is detachably connected with the brush by means of an internally-threaded sheet-metal socket F, secured centrally to the top of the brush-jacket by soldering or otherwise and receiving the externally-threaded neck G of the supply-can.

For the purpose of interrupting communication between the supply-can and the brush either when the brush projects downwardly or upwardly, but establishing communication between the same when the brush is in use, a double-acting valve mechanism is provided, which is preferably constructed as follows:

H represents a short circular casing or thimble mounted on the bottom of the socket F and forming therewith a valve-chamber *h*. This thimble, if desired, may be permanently secured to the bottom of the socket by soldering or otherwise; but the same is preferably made detachable for convenience in cleaning by forming an external annular flange *h'* on the lower end of the thimble and securing the same in place by engaging its periphery frictionally with the bore of the socket and also by clamping the same between the bottom of the socket F and the inner end of the neck G, as shown in Fig. 1. Within the valve-chamber is a valve or stopper I, having preferably the form of a ball or sphere. At its opposite ends the chamber is provided with an inlet-opening surrounded on its inner side by an annular valve-seat *j* and an outlet-opening surrounded on its inner side by an annular valve-seat *k*. The inlet-opening and valve-seat *j* are formed on the top of the valve-chamber, and the outlet-opening and valve-seat *k* are formed on the bottom of the socket, assuming the brush to be facing downwardly.

The valve-chamber is preferably of such diameter or width that no shoulders are formed around the valve-seats on which the valve can lodge, and the walls of the chamber also taper or converge toward the valve-seats. By this means the valve is permitted to move laterally out of alinement with the seats for uncovering the same, while the brush is moved by the hand in the act of brushing, thereby permitting the liquid to flow from the can to the brush; but when the brushing movement ceases or the can and brush are inverted the ball-valve is guided to either seat and prevents the escape of the liquid or the admission of air.

For the purpose of forming a liquid-tight joint between the can and the valve-casing the latter is made to taper toward its inlet-opening and the neck of the can is provided at its outer end with an inwardly-projecting flange *l*, which bears against the base of the tapering part of the valve-casing, as shown in Fig. 1. By this means these parts engage each other with a wedge-like action when the

can and brush are screwed together, producing a joint between the same which is not liable to leak.

In the use of this brush the same is screwed with its socket onto the neck of the can while the latter is upright. When the parts are in this position, the valve is seated over the inlet-opening, thereby excluding the atmosphere and dust and preventing evaporation and deterioration of the contents of the can. Upon turning the can upside down the ball-valve seats itself over the outlet-opening of the casing, thereby preventing the escape of the liquid from the can in this position of the parts. As the brush while projecting downwardly is moved back and forth laterally over the surface to be coated the ball-valve rolls off from the outlet-opening and alternately from one side thereof to the other, thereby permitting the liquid to flow intermittently from the can through the valve-casing and delivery-passage to the bristles of the brush, which latter spread the same over the surface to be coated as the liquid issues from the delivery-passage. The instant the lateral movement of the brush ceases the ball seats itself over the outlet-opening and arrests the further discharge of liquid. It will thus be noted that the supply of liquid continues so long as the same is consumed by the motion of the brush; but when this motion, and consequently the consumption of the liquid, stops the supply of liquid is also automatically arrested.

Our improvement is especially useful for applying liquid polish to stoves. This polish is usually put up for the market in small cans, which can be screwed directly into the sockets of the brushes and serve as handles for manipulating the latter. All liability of soiling the hands is thus avoided, because the substitution of an empty liquid-polish pocket by a filled one may be effected without danger of getting the liquid on the hands.

We claim as our invention—

1. A fountain-brush provided with a valve-chamber having an inlet and an outlet, and a single movable stopper operating to close either said inlet or said outlet, substantially as set forth.

2. A fountain-brush provided with a valve-chamber having an inlet and an outlet at opposite ends, and a ball-valve arranged in said chamber and adapted to close either said inlet or said outlet, substantially as set forth.

3. A fountain-brush comprising a stock having a delivery-conduit, a socket for receiving the neck of a fountain secured to said stock and having an outlet-opening which communicates with said delivery-conduit, a thimble bearing at one end against said socket and having an inlet-opening at its opposite end, said thimble and socket forming a valve-chamber, and a valve arranged in said chamber and adapted to close either of said openings, substantially as set forth.

4. The combination of a brush provided in its stock with a liquid-delivery conduit, a screw-socket secured to said stock and having an outlet-opening communicating with said conduit, a thimble having an external flange fitting the bore of said socket and provided with an inlet-opening, said thimble and socket together forming a valve-chamber, a ball-valve arranged in said chamber and adapted to close either said inlet or said outlet opening, and a liquid-supply having a threaded neck which screws into said socket and bears against said flange of the thimble, substantially as set forth.

5. The combination of a brush provided in its stock with a liquid-delivery conduit, a screw-socket secured to said stock and having an outlet-opening communicating with said conduit, a thimble having an external flange at one end which rests on the bottom of said socket and tapering toward its opposite end and is provided at the last-mentioned end with an inlet-opening, said thimble and socket together forming a valve-chamber, a liquid-supply can or fountain having a threaded neck which screws into said socket and an internal flange in its neck which engages with the flange and the base of said thimble, and a ball-valve arranged in said chamber and adapted to close said inlet-opening or said outlet-opening, substantially as set forth.

Witness our hands this 31st day of May, 1905.

JAMES CADDELL.
ALEXANDER SUTHERLAND.

Witnesses:
THEO. L. POPP
MAY E. MCARTHUR.