July 29, 1941. J. W. BRIGHAM 2,250,444

FOUNTAIN APPLICATOR

Filed Jan. 19, 1940

Fig. 1.

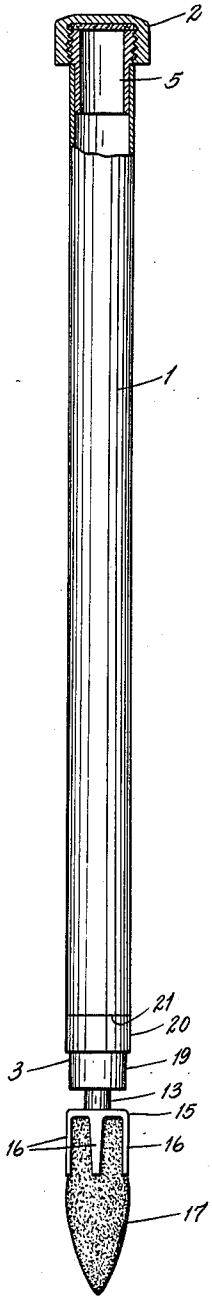


Fig. 2.

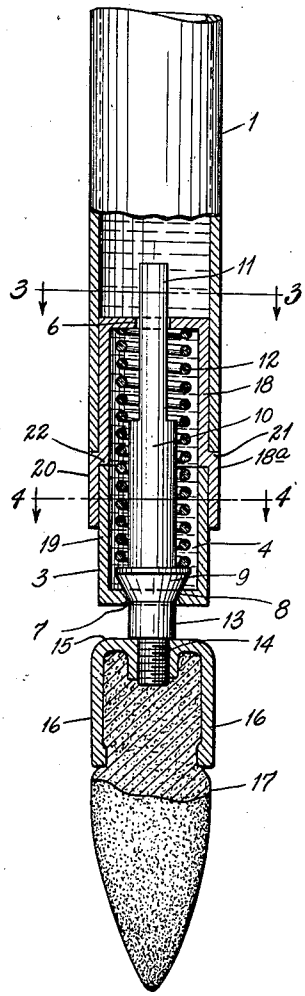


Fig. 3.

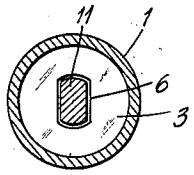
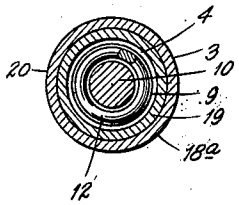


Fig. 4.



INVENTOR:
James W. Brigham,
by Carr Harr & Gravely,
HIS ATTORNEYS.

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FOUNTAIN APPLICATOR

James W. Brigham, Webster Groves, Mo., assignor to Diagraph-Bradley Stencil Machine Corporation, St. Louis, Mo., a corporation of Missouri

Application January 19, 1940, Serial No. 314,621

4 Claims. (Cl. 91—67.2)

This application relates to fountain applicators or markers of the kind having a handle containing a reservoir for liquid, a nib for the application of such liquid and a spring-loaded valve opened by pressure applied to said nib to permit flow of liquid from the reservoir to the nib. The invention has for its principal objects to provide a simple and economical valve, valve spring and sectional housing assembly adapted for ready attachment as a complete preassembled unit to the handle of the applicator to close the reservoir therein, and to dispense with screw threaded connections between the housing sections and between said housing and said handle. The invention consists in the unit valve, valve spring and sectional housing assembly and in construction, combinations and arrangements of parts hereinafter described and claimed.

In the accompanying drawing, which forms part of this specification and wherein like symbols refer to like parts wherever they occur,

Fig. 1 is a side elevation of a fountain applicator embodying my invention, the upper or filling end of the handle reservoir being shown in section,

Fig. 2 is an enlarged central longitudinal section through the lower end portion of said applicator; and

Figs. 3 and 4 are transverse sections on the lines 3—3 and 4—4, respectively, in Fig. 2.

My fountain applicator or marker comprises a hollow cylindrical reservoir handle or holder 1 closed at its upper end by a removable filler cap 2, and at its lower end by a cylindrical discharge valve housing 3 to form a closed reservoir 4 in which liquid is kept for use when wanted. The cap 2 is threaded on the upper end of a sleeve 5 pressfitted in the upper end of the handle 1; and the discharge valve housing is also pressfitted in the lower end of said handle.

The top wall of said housing 3 has a central flat-sided opening 6 therethrough adapted to establish communication between the reservoir 4 and the interior of said housing; and the bottom wall of said housing has a central circular discharge opening 7 therein and a tapered valve seat 8 surrounding said discharge opening. This discharge opening is normally closed by a valve 9 located in the housing 3 and having a tapered surface that cooperates with the tapered valve seat 8 around said opening. This valve has an upwardly extending stem 10 with a flat-sided portion 11 that has a loose sliding but substantially non-rotary fit in the flat-sided opening 6 in the top wall of the valve housing 3. The valve 9 is held down on its seat 8 in the bottom of the housing by a coil compression spring 12 that is sleeved on the valve stem 10 with one end seated against the top of said housing and with the other end seated on said valve.

The valve 9 has a depending stem 13 that extends downwardly through the discharge opening 7 and is of smaller diameter than said opening to provide an annular discharge orifice therebetween when said valve is lifted off its seat. The valve stem 13 terminates below the lower end of the valve and valve spring housing 3 in a reduced threaded portion 14 adapted to engage a threaded axial bore provided therefor in the top of a holder 15 having depending fingers 16 adapted to embrace and retain a suitably shaped liquid applier or nib 17 of felt or other absorbent material.

In the use of the above fountain applicator, the handle 1 thereof is held in the hand after the manner of a pen or pencil and the pointed end of the nib or style is pressed against the surface to which the liquid in the reservoir 4 is to be applied. Such pressure forces the nib, together with the valve stem support therefor, upwardly, thus lifting the spring loaded valve 9 off its seat 8 in the housing 3 and thereby permitting the liquid supplied to said housing through the valve stem guide opening 6 in the top thereof to flow downwardly through the discharge opening 7 in the bottom thereof and thence along the outer surface of the felt nib 17 to the lower end thereof. This supply of liquid to the felt nib continues until the pressure thereof on the surface to which the liquid is applied is relieved, to thereby permit the valve 9 to close.

As shown in the drawing, the cylindrical valve and valve spring housing 3 comprises two light gauge metal or plastic sections, an upper downwardly opening or inverted cup-shaped section 18 and a lower upwardly opening cup-shaped section 19 telescoped with a pressfit in the lower or open end of said upper section, said upper section having the valve stem supporting inlet opening 6 in its top and said lower section having the valve seat 8 and the valve stem supporting discharge opening 7 in its lower end. The upper housing section is pressfitted in the hollow cylindrical handle 1 and has an enlarged or expanded lower end portion 18a that extends below said handle and has an external diameter corresponding to the outside diameter thereof. This enlarged hub or bell 20 at the lower end of the upper housing section 18 forms an external annular shoulder 21 thereon that abuts against the lower end of the handle and thus

limits inward movement of the housing during the operation and pressfitting the same in said handle. At the lower end of the upper housing section 18 the inside diameter thereof is also increased to receive the lower housing section 19. The lower housing section 19 is pressfitted in the enlarged hub or bell end of the upper housing section 18 with the upper end of said lower housing section abutting against an internal annular stop shoulder 22 formed by the large inside diameter or socket portion of the upper housing section and with the inside diameter of said lower section in flush alinement with the small inside diameter of said upper section.

By the arrangement described, the two housing sections are secured together by a pressfit bell and spigot joint with the valve and valve stem mounted therein, and this valve, valve spring and sectional housing assembly is then secured to the hollow handle as a complete preassembled unit merely by pressing the upper end of the housing therein until the external shoulder 21 on the housing abuts against the lower end of the handle. The two housing sections are simple and inexpensive and may be quickly and easily secured together and the complete housing secured to the handle without the use of screw threads or other specially formed securing means.

What I claim is:

1. A fountain applicator comprising a tubular reservoir handle, a housing pressfitted in the lower end of said handle and having a flat-sided inlet opening in its upper end and a discharge opening in its lower end, a spring-loaded valve located in said housing and normally closing the discharge opening therein, and a nib located exteriorly of said housing and operatively connected to said valve to open the same by pressure on said nib, said valve having an upwardly extending stem with a flat-sided portion that has a loose sliding but substantially non-rotary fit in said flat-sided inlet opening.

2. A fountain applicator comprising a tubular reservoir handle, a housing mounted in the lower end of said handle having an inlet opening in its upper end and a discharge opening in its lower end, a spring-loaded valve located in said housing and normally closing the discharge opening therein, and a nib located exteriorly of said housing and operatively connected to said valve to open the same by pressure on said nib, said valve having a stem with a loose sliding but substantially non-rotary fit in said inlet opening, said housing comprising a downwardly opening upper section pressfitted in the lower end of said housing and having a hub portion disposed therebelow in abutting relation thereto, and an upwardly opening lower section pressfitted in said hub portion of said upper section in abutting relation to an internal shoulder provided therefor in said upper section by said hub portion.

3. A fountain applicator comprising a hollow cylindrical reservoir handle, a hollow cylindrical housing mounted in the lower end of said handle having an inlet opening in its upper end and a discharge opening in its lower end, a spring-loaded valve located in said housing and normally closing the discharge opening therein, and a nib located exteriorly of said housing and operatively connected to said valve to open the same by pressure on said nib, said housing comprising a downwardly opening upper section pressfitted in the lower end of said housing and having a hub portion that is disposed therebelow in endwise abutting relation thereto, and has an external diameter corresponding substantially to the outer diameter thereof and an upwardly opening lower section pressfitted in said hub portion of said upper section in endwise abutting relation to an internal shoulder provided therefor in said upper section by said hub portion, the inner diameter of said upper section above said shoulder corresponding substantially to the inside diameter of said lower section, said valve having a stem portion extending loosely through said inlet and discharge openings, said nib having a threaded connection with said stem and said stem and inlet opening being shaped to substantially prevent relative rotary movement of said stem and housing.

4. A self-contained preassembled unit for a fountain applicator comprising a housing having a flat-sided inlet opening in its upper end and a discharge opening in its lower end, and a spring-loaded valve located in said housing and normally closing the discharge opening, said valve having a depending stem passing through said discharge opening and adapted to support an applicator or nib and an upwardly extending stem with a flat-sided portion that has a loose sliding but substantially non-rotary fit in said flat-sided inlet opening, said housing comprising a downwardly opening upper section and an upwardly opening lower section having its open end pressfitted in the open end of said upper section said upper section having the inside diameter of its lower end portion enlarged to receive the upper end of said lower section and to form an abutment shoulder therefor, the inside diameter of said lower section being in substantially flush alinement with the inside diameter of said inner section above said abutment shoulder.

JAMES W. BRIGHAM.