

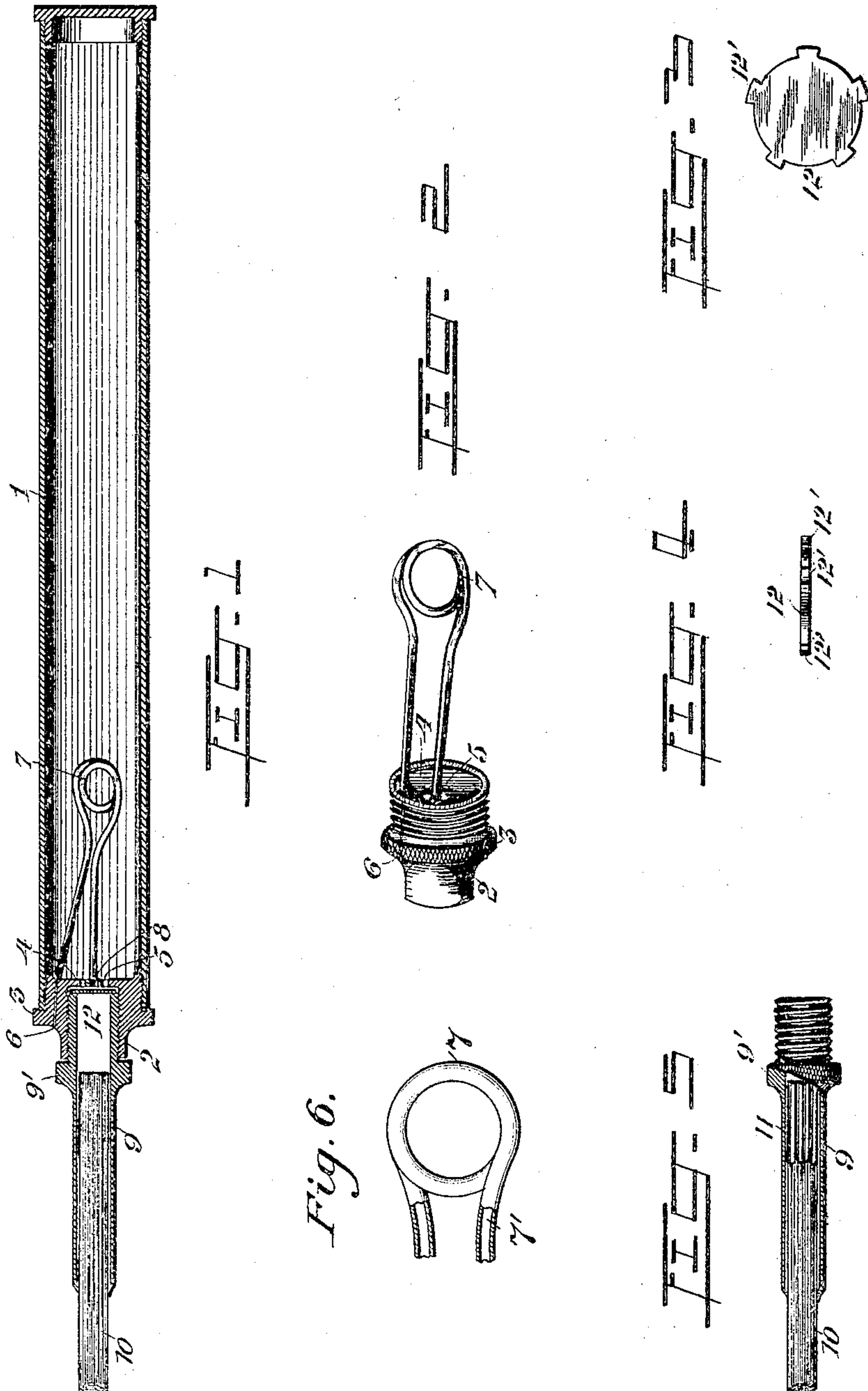
No. 767,194.

PATENTED AUG. 9, 1904.

W. J. WRIGHT & G. J. PAINTER.
FOUNTAIN BRUSH.

APPLICATION FILED OCT. 31, 1903,

NO MODEL.



UNITED STATES PATENT OFFICE.

WILFRED J. WRIGHT AND GEORGE J. PAINTER, OF NEW YORK, N. Y.

FOUNTAIN-BRUSH.

SPECIFICATION forming part of Letters Patent No. 767,194, dated August 9, 1904.

Application filed October 31, 1903. Serial No. 179,297. (No model.)

To all whom it may concern:

Be it known that we, WILFRED J. WRIGHT and GEORGE J. PAINTER, citizens of the United States, and residents of Manhattan borough, in the county of New York, city of New York, and State of New York, have invented certain new and useful Improvements in Fountain-Brushes, of which the following is a specification.

The object of the present invention is to provide a fountain-brush adaptable for marking cases, stenciling, and analogous purposes, and its advantages relate principally to the method of feeding the liquid from the reservoir or containing-tube to the bristles, the regulation of such flow, and means for feeding air to the supply-reservoir.

The device consists of a liquid-containing reservoir, an air-supply coil, and means for conducting the liquid to the bristles of the brush and for regulating or wholly shutting off the flow of the liquid, all of which will now be set forth in detail.

In the drawings, Figure 1 is a vertical longitudinal section of the fountain-brush. Fig. 2 is a perspective view of the adjustable feed-controlling coupling, showing the air-supply tube. Fig. 3 is a top view, enlarged, of the diaphragm which regulates the flow of liquid. Fig. 4 is an edge view of same. Fig. 5 is a side elevation of the nozzle with the side broken away, showing the brush therein. Fig. 6 is a side view of portion of the air-tube, partly in section.

In constructing this invention we provide a tube 1, closed at its upper end and having its open lower end internally threaded to receive therein a corresponding threaded coupling 2, having an annular flange 3. The upper portion or seat 4 of this coupling is provided with perforations 5 (shown in Fig. 2) to admit of the passage of fluid from the reservoir to the brush 10. A port 6 through the wall of the coupling 2 communicates with an aperture in the seat 4, through which air is admitted to a coil 7, which is tubular, as shown at 7', and discharged therefrom through an aperture 8, approximately in the center of the seat 4, such movement of air being induced by the flow of liquid from the tube to the

point of exit below. The lower reduced portion of the coupling 2 is internally threaded to receive therein a nipple or nozzle 9, which has near its upper end an exterior annular flange 9', forming a flush surface when in juxtaposition to the plug 2, and within the same is a brush 10, secured within the nipple by frictional contact at its head 11. The head 11 of the brush is provided with longitudinal corrugations, for reasons which will be explained hereinafter. The bristles of the brush are so disposed as practically to clear the inner wall of the nozzle 9, although they are in light contact therewith at the point where they project through the reduced end of the nozzle.

Resting normally upon the head 9 is a diaphragm 12, having peripheral lugs or projections 12', as shown in Fig. 3, the function of the diaphragm being to control the flow of liquid through the perforations 5, the purpose of the lugs being to keep the diaphragm 12 from having lateral movement and at the same time to admit of passage of fluid around the diaphragm to the brush below.

The operation is as follows: The reservoir 1 is filled with the ink or liquid to be used, the nozzle 9 being secured into the coupling 2, so as to force the diaphragm 12 upwardly against the under side of the seat 4 of coupling 2, thus acting as a valve closing the openings therein and preventing any passage of liquid from the reservoir to the lower part of the brush. To allow passage of liquid to the bristles, the nozzle 9 is then unscrewed, so as to open the ports 4 and air-apertures 6, the liquid thus running downwardly around the edges of the diaphragm into the nozzle 9, thence through the spaces formed by the corrugations in the brush-head 10 to the outer portion of the bristles below. Air is supplied to the tube 1 for the purpose of displacing the liquid through the port 6, to the coil 7, thence downwardly through the central opening in the coupling or plug 2, and finds its way upwardly into the reservoir through the openings 4.

As will be observed, the diaphragm 12 rests normally upon the top of the nozzle 9, and the latter is secured into the lower end of the

coupling 2. The diaphragm is moved upwardly until it rests against the lower portion of the perforated seat 4, thus closing the openings 5 and preventing egress of liquid from the reservoir. To cause resumption of the flow, the nozzle 9 is unscrewed, causing the diaphragm to become unseated, the distance between the diaphragm and the perforations in the seat 4 regulating the flow. The space intermediate the diaphragm and the perforated seat is at all times so small that should the liquid have any tendency to flow upward through the central port of the seat 4 into the air-supply tube or coil 7 the suction thus created would cause the diaphragm to be drawn upwardly and to rest against the seat 4, thus cutting off further backflow.

By the peculiar conformation and arrangement of the air-feeding tube we are enabled to produce a fountain-brush which is secure against leakage of the liquid in whatever position the brush may be placed. We also overcome the disadvantages which are apt to arise where there is but one passage for the liquid from the reservoir to the brush and are also enabled to obtain at all times uniform distribution of the liquid to the bristles.

What we claim as new is—

1. A fountain-brush comprising a hollow handle, closed at one end and provided at the other end with a plug having perforations through the top and a port through the side wall thereof, a tube within the handle one end thereof communicating with the said port and the other with a perforation in the top of said plug, a brush-containing nozzle on the lower end of said plug, and a diaphragm within the space between the top of the nozzle and the perforated seat of said plug, substantially as set forth.

2. A fountain-brush comprising a liquid-containing handle closed at its upper end and having a plug on its lower end, a hollow coil within said tube having one end thereof communicating with a port through the wall of

said plug and the other end communicating with a perforation in the top of said plug, said plug being provided with perforations for passage of liquid therethrough from the handle, a nozzle in the lower end of said plug upon which rests a diaphragm, said nozzle having means for causing the said diaphragm to move to or from the perforated top of the plug to control flow of liquid therethrough, said nozzle containing therein a brush, the head of said brush having longitudinal corrugations and the bristles depending from said head and projecting through the lower reduced opening in said nozzle, as set forth.

3. In a fountain-brush the combination of a liquid-containing handle closed at one end and a plug at the other end, said plug having perforations in its upper end, the central perforation communicating with one end of a tubular air-coil extending upwardly into the said handle the other end communicating with a port in the exterior side wall of said plug, a nozzle on the lower open end of said plug, a diaphragm movably located in the space between the top of said nozzle and perforated top of plug to control the flow of liquid through said perforations said diaphragm having peripheral lugs thereon, a brush within said nozzle having a head provided with external longitudinal corrugations to admit of the flow of liquid interstices between said brush-head and the containing-nozzle the bristles of the brush depending downwardly through the lower reduced end of said nozzle, as set forth.

In testimony whereof this instrument is by us duly signed, at New York city, in the county of New York and State of New York, this 30th day of October, A. D. 1903.

WILFRED J. WRIGHT.
GEORGE J. PAINTER.

Witnesses:

JOHN MORTON BOLAND,
FRANCES KINREICH.