

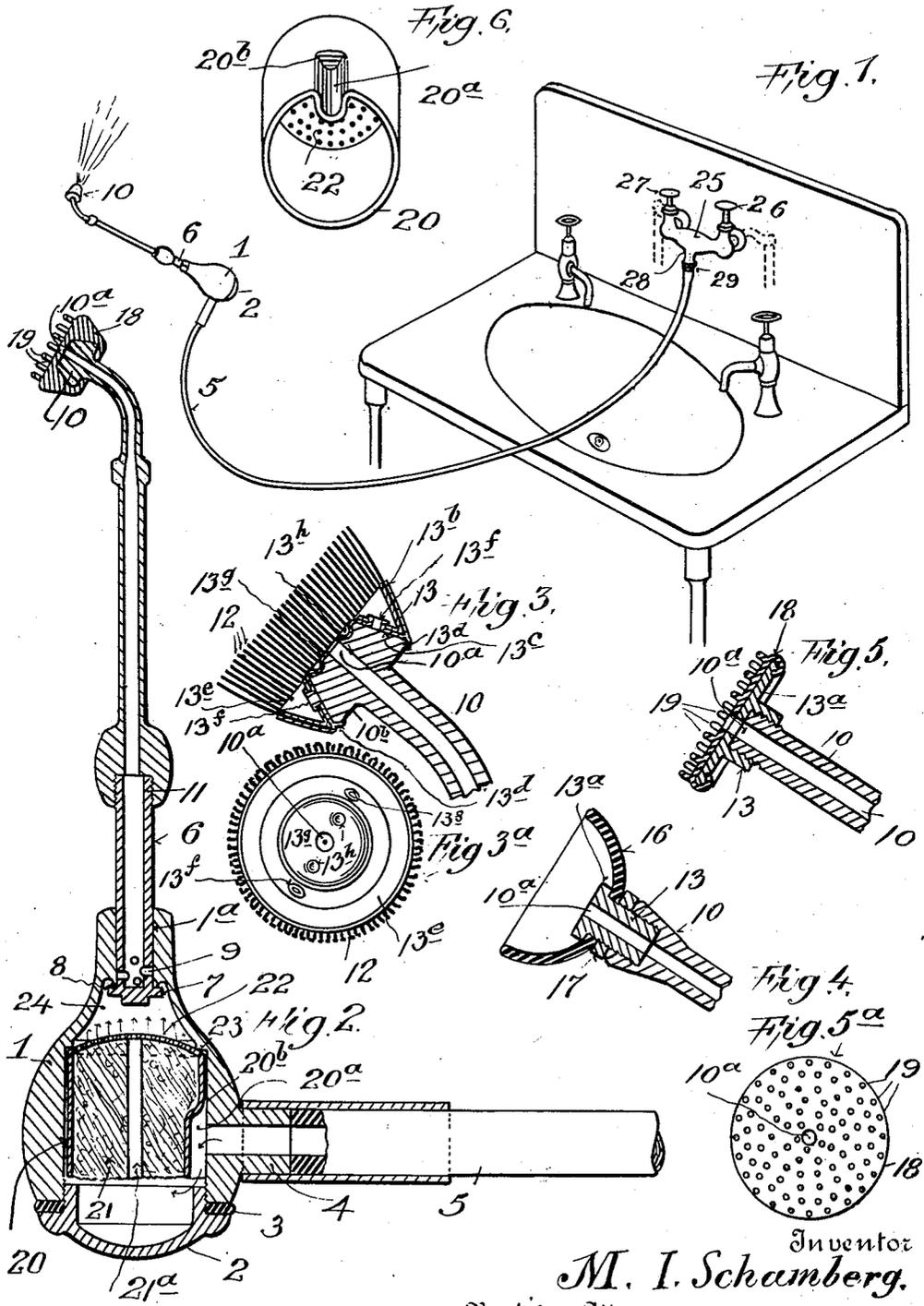
M. I. SCHAMBERG.

TOOTH AND MOUTH CLEANSER.

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1,278,225.

Patented Sept. 10, 1918.



Inventor  
**M. I. Schamberg.**

By his Attorney  
**P. F. Brunel**

# UNITED STATES PATENT OFFICE.

MORRIS I. SCHAMBERG, OF NEW YORK, N. Y.

TOOTH AND MOUTH CLEANSER.

1,278,225.

Specification of Letters Patent. Patented Sept. 10, 1918.

Application filed July 29, 1916, Serial No. 111,969. Renewed February 7, 1918. Serial No. 215,920.

*To all whom it may concern:*

Be it known that I, MORRIS I. SCHAMBERG, a citizen of the United States, and resident of New York city, borough of Manhattan, in the county of New York and State of New York, have invented certain new and useful Improvements in Tooth and Mouth Cleansers, of which the following is a specification.

The object of my invention is to provide means to permit the application to the teeth, gums and mouth of a relatively fine stream or jet of water under pressure, adapted to clean the teeth and to dislodge particles from the interspaces between the teeth, as well as micro-organisms that may collect at or adjacent to the teeth, a further object being to permit such water to be medicated in its flow to the teeth, and also to provide means to permit brushing the teeth and massaging the gums while such flow of water continues.

My invention comprises novel details of improvement and combinations of parts that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming part hereof, wherein, Figure 1 is a diagrammatic perspective view illustrating a manner of attaching my improvements to a water supply under pressure;

Fig. 2 is an enlarged central section through my improved implement;

Figs. 3, 3<sup>a</sup>, 4, 5 and 5<sup>a</sup> are detail sections through nozzles or jets provided with means for rubbing or brushing the teeth and massaging the gums, and

Fig. 6 is a perspective view of the shell or cartridge adapted to contain a medicament in the implement for medicating water flowing therethrough;

Similar numerals of reference indicate corresponding parts in the several views.

The numeral 1 indicates a hollow casing shown provided with an opening at one end having a removable cap or closure 2, which may be connected with the casing by screw threads, a gasket being indicated at 3 to afford a watertight joint. Casing 1 is shown provided with a hollow hub or extension 4 for connection with a hose or tube 5, which preferably will be a flexible tube of rubber or other suitable material adapted to withstand high water pressure from water supplied in buildings or otherwise. At 6 is a tubular stem longitudinally slidable and ro-

valve on said stem within the casing adapted to coact with a seat 8 to control the outflow of water from the casing. Seat 8 is shown extending slightly into the casing, and sharpened at its end to coact with the valve to form a tight closure. Stem 6 at a suitable point adjacent to but beyond valve 7 is provided with one or more apertures 9, whereby when said stem and valve are pushed into the casing, and the valve is unseated, water may flow through said aperture or apertures into the hollow stem, and thence to the nozzle or jet for delivery into the mouth. In the construction shown, pressure of water within the casing against the valve will cause the latter to be forced against seat 8 to shut off the outflow of water from the casing. The nozzle or jet is indicated generally at 10, and by preference its delivery orifice 10<sup>a</sup> will be quite small in order to direct a fine stream of water under high pressure against or between the teeth in the mouth. The outer portion of the nozzle is shown off-set or projecting angularly from the axis of the main part of the nozzle and stem, to permit the directing of a stream of water to all parts of the mouth. The nozzle is shown detachably connected with stem 6, for which purpose I have shown threads at 11 connecting the inner end of the nozzle with stem 6, whereby the nozzles may be readily removed and replaced on the stem.

When it is desired to enable the teeth to be brushed or rubbed, particularly while the stream of water flows from the nozzle, the delivery end of the nozzle may be provided with a suitable brush or rubbing or massaging device, which may be detachably connected to the nozzle or permanently secured thereto. In Figs. 3 and 3<sup>a</sup> I have shown bristles at 12 attached to the nozzle, for which purpose I have shown a bristle holder 13 having an outer wall 13<sup>b</sup>, shown outwardly diverging and having an inner wall 13<sup>c</sup> tapering to snugly fit the tapering exterior surface of the head 10<sup>b</sup> of the nozzle 10. The holder 13 may be provided with one or more prongs 13<sup>a</sup> adapted to snap or spring under or against the adjacent end of head 10<sup>b</sup> to detachably retain said holder on said head. The bristles 12 are shown fitting along wall 13<sup>b</sup> of holder 13, and to retain said bristles within said wall I have shown a shell 13<sup>e</sup> fitted within walls 13<sup>b</sup> and 13<sup>c</sup>, said shell bearing firmly against said bristles. Said shell may be secured within

holder 13 by suitable means, such as by one or more projections 13<sup>f</sup> pressed out from wall 13<sup>e</sup> and passed through a corresponding aperture in the adjacent wall of shell 13<sup>e</sup> and riveted over on said wall. The outer end or wall 13<sup>e</sup> of holder 13 is shown fitted over the outer end of nozzle 10 and apertured for the passage of water from orifice 10<sup>a</sup>. The wall 13<sup>e</sup> may have one or more projections 13<sup>b</sup>, shown pressed out of said wall to enter a corresponding recess in the end of the nozzle to retain the holder 13 from rotation on the nozzle. By the construction described the holder may be readily removed from the nozzle and may be easily replaced by pushing the holder on the nozzle. The bristles are shown arranged in annular or cup-like form permitting the outflow of the stream of water from within the bristles through central opening 10<sup>a</sup>.

In Fig. 4 the rubbing device is shown in the form of a cup-like member 16, which may be made of pliable rubber, apertured to receive holder 13, the latter being shown in the form of a tubular or hollow plug provided with an opening 10<sup>a</sup> and a flange 13<sup>a</sup> engaging one side of cup 16, a nut 17 threaded on the plug serving to clamp said rubber cup against said flange. The holder is thus readily detachable from the nozzle.

In Figs. 5 and 5<sup>a</sup> the flange 13<sup>a</sup> of the holder plug 13 is suitably extended laterally, in disk-like form, to receive an apertured cap 18 that is provided with spaced outwardly-extending projections or teats 19, said cap being shown shaped to snap or spring over the edge of flange 13<sup>a</sup> to retain said cap detachably thereon and with opening 10<sup>a</sup> centrally located for flow of water. The cap 18 may be readily detached from and replaced on flange 13<sup>a</sup>. Flange 13<sup>a</sup> may be made of metal, hard rubber, or other suitable material, and the cap 18 may be made of elastic material, such as rubber, to snap or spring over the flange. In Fig. 2 the cap 18 is substantially the same as in Figs. 5 and 5<sup>a</sup> and adapted to snap or spring from the form of nozzle enlargement shown in Fig. 1.

In order to cause the water flowing through the implement to become medicated, I provide a shell or cartridge 20 adapted to enter the open end of the casing and fit within the casing to contain a suitable medicament 21 of such a nature as to be gradually absorbed by the flowing water within the casing to medicate the water. Said shell is shown perforated at its inner end 22 opposing the valve 7. The shell is retained within the casing by cap 2. The casing is shown provided with an inner abutment or shoulder 23 against which the shell or cartridge may rest, providing a space at 24 between the perforated portion

of the shell or cartridge and valve 7 for the water in the casing. Stem 6 may be pushed within the casing to engage the shell or cartridge to move the latter outwardly to enable it to be grasped for removal, when cap 2 has been detached from the casing. The shell or cartridge should preferably fit within the casing sufficiently snug to cause the inflowing water to pass through the former and its medicament instead of around the shell or cartridge. Since I have illustrated the hub 4 on the casing at right angles to the stem 6, (whereby the nozzle is conveniently supported on the casing with respect to the hose 5 to permit ready manipulation of the nozzle in the mouth,) and since under such conditions the water will flow into the casing against the side of the shell or cartridge, I provide means to direct such water toward the outer end of the shell or cartridge. For such purpose I have shown the shell or cartridge provided with an inwardly disposed recess 20<sup>a</sup> shown opening through the outer rim of the shell and closed at 20<sup>b</sup> at the opposite end, whereby water flowing into the shell will enter said recess and will be directed thereby to the outer end of the shell through a passage between the latter and cap 2. The recess 20<sup>a</sup> may be formed by depressing the side of the shell or cartridge. The shell or cartridge may be made of metal, celluloid or other suitable material. The medicament 21 is shown provided with a bore or passage 21<sup>a</sup> to direct the water therethrough, and with a groove to receive recess 20<sup>a</sup> of the shell.

Since it will be preferable to utilize warm or tepid water under pressure, the hose or tube 5 may be connected with any suitable water supply fitting. In Fig. 1 I have illustrated at 25 a combined hot and cold water fitting to be connected with hot and cold water house pipes in any well known manner, fitting 25 being shown provided with the hot and cold water cocks 26, 27, and a common outlet 28 to which hose 5 may be detachably connected. Any suitable means, such as a union, may be provided for detachably connecting the hose with outlet 28.

When my improvements are attached to the water supply and the water turned on, its pressure will cause closing of valve 7, the water meanwhile coming in contact with the medicament in the cartridge or shell. When the device is to be used it may be held conveniently in the hand and readily manipulated, and the nozzle may be directed against the teeth in the mouth to cause the fine high-pressure jet of water to be ejected against the teeth and into the interspaces between the teeth, it being merely necessary to draw back the stem 6 to unseat the valve, retaining the valve unseated as long as desired. At any moment that it is desired to

stop the flow of water into the mouth, it is merely necessary to release the stem, whereupon the valve will automatically be seated by the water pressure to shut off the flow. Since stem 6 is rotatively journaled in the casing, the user may readily rotate the stem and the nozzle to direct the stream of water at any position into the mouth, such as along the exterior or interior of the teeth on either side of the mouth without requiring the entire instrument to be inconveniently manipulated for such purpose. Where the brush or rubbing or massaging device is used upon the nozzle, the teeth may be brushed or scrubbed or the gums massaged while the high pressure jet of water is flowing against the teeth or gums, whereby particles may be loosened and will be washed away. In the cup-like form of the brush or rubbing device shown in Fig. 4, the same may be set against the teeth to confine the water against the teeth or gums in the mouth to a greater extent than occurs where the bristles 12 or the projections or teats 19 are used.

By means of my improvement, which is designed to cause a fine high pressure stream of water to be directed into the mouth, micro-organisms, that collect along the teeth or gums, or in the interspaces between the teeth, may be dislodged without injury to the teeth or the gums, thereby overcoming the necessity for removing such organisms by brushing or picking between the teeth, with the consequent advantages to the user.

According to the arrangements set forth, the nozzles may be applied to stem 6 by anyone, whereby the implement not only may be installed for family use, but may be installed in public places for use by any one having an individual nozzle, the sanitary character of the implement being thus apparent.

While I have set forth a simple, cheap and practical embodiment of my invention, the same is not limited to the particular details and arrangements set forth, since the same may be altered or modified, without departing from the scope of my invention.

By the term "brush" herein is to be included a brushing or rubbing device for the teeth or gums of the character set forth, whether comprising bristles or other flexible projections or teats, or whether in cup form, through which the water flows from the nozzle orifice.

The rubber cup 16 may be clamped between the wall 13<sup>b</sup> and 13<sup>a</sup>, in the manner of the bristles 12, if desired, and the holder of the form shown in Figs. 5 and 5<sup>a</sup>, having the flange 13<sup>a</sup> and cap 18 may be detachably held on the nozzle by the means shown in Fig. 3 if desired.

Having now described my invention what I claim is:—

1. An implement for cleaning the teeth

comprising a casing provided with an inlet and outlet, a valve to control the outflow and provided with a tubular stem slidable relatively to the outlet and having means to admit fluid thereto when the valve is unseated, said stem projecting beyond the casing in position to be manipulated by the fingers of the operator to unseat the valve, said stem having a nozzle located beyond the casing, said nozzle having a portion offset from the axis of the stem to permit a stream of water under pressure to be directed to all parts of the mouth.

2. An implement for cleaning the teeth comprising a casing provided with an inlet and outlet, a valve to control the outflow and provided with a tubular stem slidable and rotative relatively to the outlet and having means to admit fluid thereto when the valve is unseated, said stem projecting beyond the casing in position to be manipulated by the fingers of the operator to unseat the valve, said stem having a nozzle located beyond the casing.

3. An implement for cleaning the teeth comprising a casing provided with an inlet and outlet, a valve to control the outflow and provided with a tubular stem projecting beyond the casing and slidable relatively to the outlet and having means to admit fluid thereto when the valve is unseated, a nozzle having a delivery portion offset from its axis, and means for detachably connecting the nozzle with the stem at a point outside the casing.

4. An implement for cleaning the teeth comprising a casing provided with an inlet and outlet, a valve to control the outflow and provided with a tubular stem slidable relatively to the outlet and having means to admit fluid thereto when the valve is unseated, a nozzle, and means for detachably connecting the nozzle with the stem, said nozzle being rotatively supported relatively to the casing, and having a delivery orifice at a distance beyond the casing offset from the plane of the nozzle.

5. An implement of the class described comprising a casing having an inlet and outlet, a valve to control the outlet, a stem and nozzle for the outflow of fluid when the valve is unseated, the valve being operatively connected with the stem, an apertured shell fitted within the casing, and having an open outer end, the shell fitting snugly within the casing and being adapted to contain a medicament, the stem being slidably opposed to said shell to move the shell outwardly when the stem is pushed inwardly, said casing having an opening to receive the shell, and a cap to close said opening and retain the shell in the casing.

6. An implement of the class described comprising a casing having an inlet and outlet, a valve to control the outlet, a stem

and nozzle for the outflow of fluid when the valve is unseated, an apertured shell fitted within the casing and adapted to contain a medicament, said shell having a recess in its side wall opposing the inlet to receive the impact of inflowing fluid and to direct fluid over the end of the shell, said casing having an opening to receive the shell, and a cap to close said opening and retain the shell in the casing.

7. An implement of the class described comprising a casing having an inlet and outlet, a valve to control the outlet, a stem and nozzle for the outflow of fluid when the valve is unseated, an apertured shell fitted within the casing and adapted to contain a medicament, said stem being slidably opposed to said shell to move the shell outwardly when the stem is pushed inwardly, said shell having a recess in its side wall opposing the inlet to receive the impact of inflowing fluid and to direct fluid over the end of the shell, said casing having an opening to receive the shell, and a cap to close said opening and retain the shell in the casing, said shell and cap affording a passage therebetween for fluid from said recess into the end of the shell.

8. An implement for cleaning the teeth comprising a casing having an inlet and outlet, a valve to control the outlet, a stem and nozzle for the outflow of fluid when the valve is unseated, the stem being rotative and connected with the valve to unseat the same, the nozzle extending beyond the casing and being offset at its outer end relatively to the axis of the nozzle, a brush, and means for detachably connecting the brush with the nozzle for the flow of fluid through the brush, the offset end of the nozzle sup-

porting the brush at an angle to the axis of the nozzle, whereby the jet and brush may be directed to all parts of the mouth.

9. An implement for cleaning the teeth comprising a casing having an inlet and outlet, a valve to control the outlet, a rotatable and slidable stem and nozzle for the outflow of fluid when the valve is unseated, the valve being secured to the stem to move therewith, the nozzle having a single orifice to direct a stream therefrom under high pressure, said nozzle having an enlargement, and a brush having means to grip said enlargement for detachably connecting said brush with the nozzle, said brush having an opening registering with said single orifice for the flow of a single stream through the brush.

10. An implement for cleaning the teeth comprising a casing having an inlet and outlet, a valve to control the outlet, a rotatable and slidable stem and nozzle for the outflow of fluid when the valve is unseated, the valve being secured to the stem to move therewith, the nozzle being offset at its outer portion and provided with a single orifice, the nozzle being provided with an enlargement, and a cap fitted on the enlargement and having projections, said cap having a marginal portion fitting over the edge of the enlargement, said cap having a single opening registering with the nozzle orifice for the flow through the cap of a single stream of fluid.

Signed at New York city in the county of New York and State of New York this 28th day of July A. D. 1916.

MORRIS I. SCHAMBERG.

Witnesses:

T. F. BOURNE,

MARIE F. WAINRIGHT.