A. G. STEVENSON.

BRUSH.

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1,374,330.

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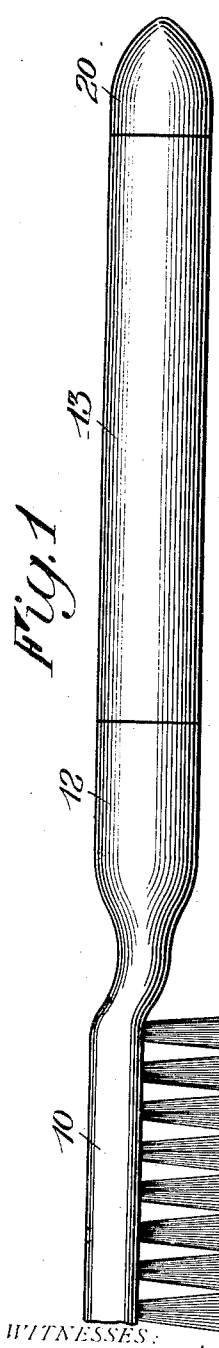


Fig. 1

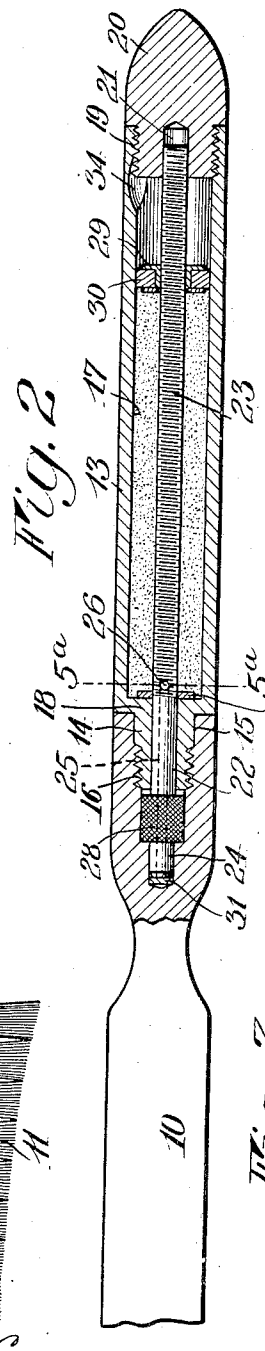


Fig. 2

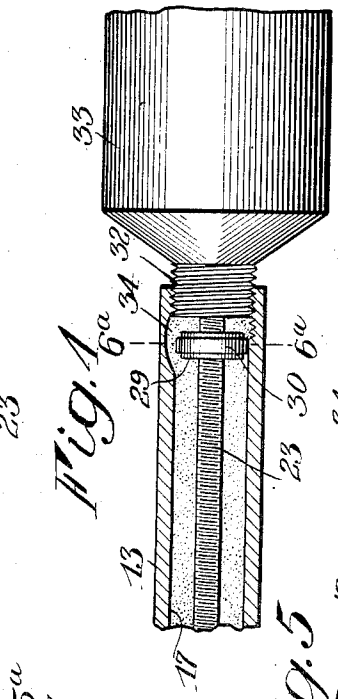


Fig. 4

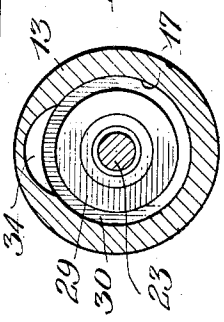


Fig. 6

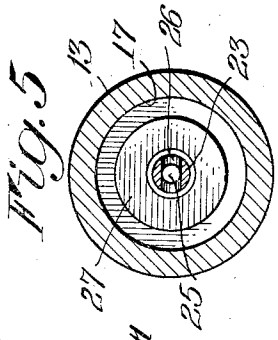


Fig. 5

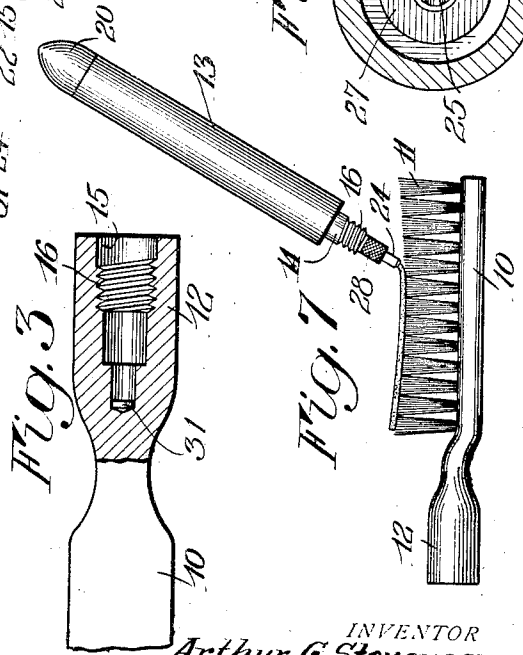


Fig. 7

Fig. 3

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BRUSH.

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To all whom it may concern:

Be it known that I, ARTHUR G. STEVENSON, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Brushes; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

This invention relates to brushes of the variety provided with a container or reservoir, for detergent or other material to be used with the brush, and more particularly, to brushes of the variety in which the material is carried in a handle which is detachable so that it may be applied directly to the surface of the brush and the container may be closed when not in use, one object of the invention being to provide a brush of this description which is simple and efficient in construction and cleanly and convenient in operation.

A further object is the provision of a brush of the above character so constructed that the reservoir is necessarily closed after an application of the material to the brush, thus insuring a cleanly and sanitary condition of the parts and obviating the hardening of the material and clogging of the reservoir which results from leaving the latter open and exposed to the air.

Another object is the provision of simple and convenient means for refilling the reservoir from a supply container such as the usual collapsible tube. A still further object is to provide a simple and durable construction of the operating parts which are inexpensive to manufacture and not likely to get out of order. To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a side elevation of a brush, partly broken away, having the invention applied thereto.

Fig. 2 is a top plan view of the same with the handle portion in central section.

Fig. 3 is a fragmentary view of the brush head partly in section.

Fig. 4 is a fragmentary view showing the handle in central section with a refilling container attached thereto.

Fig. 5 is a transverse section on the line 5^a—5^a of Fig. 2.

Fig. 6 is a similar view on the line 6^a—6^a of Fig. 4.

Fig. 7 is a view showing the handle detached for applying the material to the bristles.

The invention, in the embodiment at present preferred as best illustrating the principles involved, is disclosed as applied to a tooth brush, but is, of course, capable of a wide variety of applications, and also of various modifications of the details of construction and operation within the scope of the invention. The present embodiment comprises a brush head 10 provided with the usual bristles 11 and having a portion 12 to which is attached a handle 13, the latter being detachably secured to the portion 12 of the brush head preferably by means of a reduced portion 14 on the handle which is received in a recess or socket 15 formed in the portion 12, the parts being provided with interengaging screw threads 16 so that the head and handle may be securely fastened together for a brushing operation or readily detached for applying material to the brush as hereafter described.

The handle 13 is hollow, having a substantially cylindrical bore 17 forming a reservoir for paste, powder or other material to be used with the brush, the reservoir being closed at its inner end preferably by a partition 18 which supports the reduced portion 14, and open at its opposite or outer end where it is formed interiorly with screw threads 19 with which engages a reduced threaded end of a closure plug 20. The latter has formed therein, centrally of its interior surface, a bearing 21, and the portion 14 at the other end of the handle has formed therein a second bearing 22, in which bearings is rotatably supported a rod 23 which is threaded at its portion within the reservoir, and projects outside the portion 14 of the handle where it terminates in a nozzle 24 having an opening or channel 25 extending centrally thereof and communicating through side openings 26 with the inner end of the reservoir. The rod carries adjacent the wall 18 a lug or flange 27, and adjacent

the end of the portion 14 the rod has fixed thereto a knurled fingerpiece 28 by means of which it may be conveniently rotated in its bearings.

Within the reservoir is a plunger or piston 29 having threaded engagement with the rod 23 and provided with a packing 30 which snugly engages the sides of the reservoir and prevents the rotation of the plunger during the rotation of the rod. It is apparent that after the reservoir has been filled with material, rotation of rod 23 by means of the fingerpiece 28 serves to advance the plunger and force the material from the nozzle 24 to apply it to the bristles of the brush as illustrated in Fig. 7. A disk 31 is provided at the inner end of recess 15, forming a closure for nozzle 24 when the brush head and handle are attached to each other for a brushing operation.

As illustrated in Fig. 4 the plug 20 at the outer end of the handle may be removed and the threaded end 32 of the nozzle of a supply container, such as the ordinary collapsible tube, 33, may be inserted instead, the plug 20 being of a suitable size for this purpose so that the supply nozzle is brought in communication with the reservoir, at which time the rod is operated to bring plunger 29 to the outer position shown, where a by-pass 34, extending around the plunger, permits the material to be forced from the supply container to the reservoir to fill the latter, after which plug 20 may be reinserted and the brush will be ready for use.

In the operation of the device, when it is desired to apply material from the reservoir to the brush, the handle is detached from the brush head and fingerpiece 28 is operated to advance the plunger and force a quantity of material from the nozzle 24 for application to the ends of the bristles where it is most effective. The handle is then attached to the brush head as shown in Fig. 2 in which position the brush is ready for use and the nozzle of the reservoir is closed by the disk 31. The material is thus supplied to the brush in the most effective manner and the construction is such that the reservoir must be reattached to the brush before the latter can be used, thereby insuring the closure of the reservoir. The invention thus overcomes the objectionable feature of a common form of reservoir brush in which the material is applied through the brush head at the base of the bristles where it tends to harden and cake by exposure to the air and to close the outlet of the reservoir, the present invention thus having the advantages of being more cleanly and sanitary, and of applying the material to the ends of the bristles where needed, instead of at their roots. The construction is simple and inexpensive to manufacture and durable and convenient in operation, and lends itself readily to combination with a design of the article of neat and pleasing appearance.

I claim as my invention:

1. The combination with a brush head of a detachable handle formed to provide a reservoir having an opening, a plunger in said reservoir, and operating means for said plunger to dispense the reservoir contents through said opening, said brush head being formed to protect said operating means and close said opening when the head and handle are attached.

2. The combination with a brush head of a detachable handle therefor formed with a reservoir therein, said reservoir having a passageway on the end portion of the handle adjacent the brush head and adapted to be closed by the latter when said head and handle are attached, means for expelling the contents of said reservoir, operating means for said expelling means adjacent one end of the handle and means for filling the reservoir adapted to be attached to the other end of the handle.

3. The combination with a brush head of a detachable handle therefor formed with a reservoir therein, said reservoir having a filling opening at its outer end portion and a dispensing opening at its inner end portion adapted to be closed by said head when said head and handle are attached, means for expelling the contents of said reservoir, and operating means for said expelling means remote from the filling opening.

4. The combination with a brush head, of a detachable handle formed with a reservoir therein having an opening at an end portion thereof, a plunger in said reservoir, an elongated member connected with said plunger for actuating the latter, operating means for said member for dispensing the contents of the reservoir through said opening and located adjacent thereto, and brush head connecting means on said handle between said operating means and reservoir for attachment of the handle to the brush head.

5. The combination with a brush head of a detachable handle formed with a reservoir therein having an outlet opening, and a filling opening adapted for connection with the outlet of a supply container, a plunger in said reservoir, said filling opening having a channel by-passing the plunger in one position of the latter, and operating means for said plunger to dispense the contents of the reservoir.

6. The combination with a brush head of a detachable handle formed with a reservoir therein having a filling opening, said handle having means adjacent said opening for connecting with the latter the discharge nozzle of a supply container, a closure for said filling opening provided with a bearing,

a bearing in said handle, a rod rotatable in said bearings, and a plunger in said container having a threaded connection with said rod for actuation thereby, said rod having a portion extending outside said handle and provided with a channel communicating with said reservoir for dispensing the contents of the latter.

7. The combination with a brush head, of a detachable handle therefor, formed with a reservoir therein, said reservoir having a passageway therefrom, and an actuating means for dispensing the contents of the reservoir, which means is adjacent said passageway, and both the passageway and actuating means being adapted to be entirely closed by said brush head when said handle is attached thereto.

8. The combination with a brush head of a detachable handle therefor provided with a reservoir and passageway therein, means within the reservoir for expelling the contents thereof, means for filling said reservoir, and operating means for the expelling means which operating means is independent of said filling means.

9. The combination with a brush head of a detachable handle therefor provided with a reservoir and passageways therein, means for filling the reservoir located adjacent one end of the handle, means for expelling the contents of the reservoir, and operating means to control the expelling means and dispense the contents of said reservoir, said operating means located adjacent the other end of said operating handle remote from the filling means.

10. The combination with a brush head, of a detachable handle therefor having a reservoir therein, a plunger located in the reservoir, a rod in coöperation with the plunger for sliding the same, actuating means on an end portion of the handle for rotating said rod, said handle having an opening adjacent the actuating means, screw threads for securing the brush head to the handle and located between the reservoir and actuating means, a threaded cap on the handle remote from the actuating means and provided therein with a bearing for said rod, and a by-pass around said plunger when adjacent the end of the handle provided with the cap, the brush head being adapted to inclose said actuating means to prevent accidental rotation thereof.

ARTHUR G. STEVENSON.