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TUBE COLLAPSING MECHANISM FOR DISPENSERS

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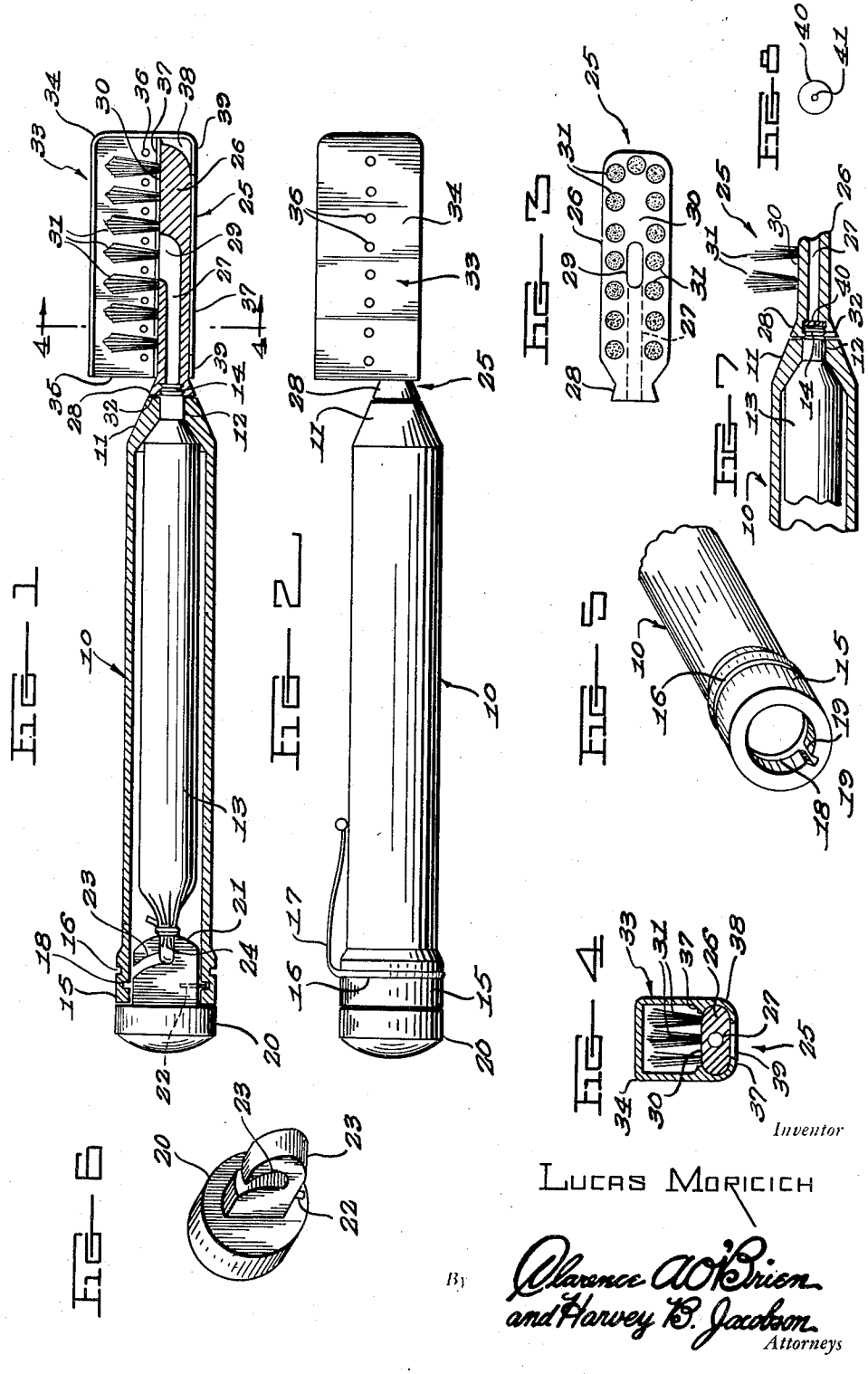

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TUBE COLLAPSING MECHANISM FOR DISPENSERS

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1 Claim. (Cl. 222—104)

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This invention relates to new and useful improvements and structural refinements in dispensers, more specifically, to a device of the character herein described, in which a brush structure is connected to the outlet of a collapsible tube of dental cream to provide what may be referred to as a fountain toothbrush.

While the scope of the invention may be readily extended to dispensers and applicators of shaving cream, or to any other substances which are ejectible from a collapsible tube and applicable with a brush, the following description will explain the invention particularly as applied to a toothbrush.

The principal object of the invention is, as aforesaid, to provide the combination of a collapsible tube and a brush into which the contents of the tube may be readily and conveniently ejected. The utility of such device will be clearly apparent not only when used in the home, but particularly when traveling, the dispenser being provided with a ventilated cover for the brush and with a resilient clip whereby the entire assembly may be conveniently attached to wearing apparel.

A further object of the invention is to provide a dispenser in which the contents of the tube may be easily ejected and in which the tube when empty, may be readily replaced.

Another object of the invention is to provide a dispenser which may be quickly and easily disassembled for purposes of cleaning.

An additional object of the invention is to provide a dispenser which is of simple construction and which will not easily become damaged.

A still further object of the invention is to provide a dispenser which will readily lend itself to economical manufacture.

With the above more important objects in view, and such other objects as may become apparent as this specification proceeds, the invention consists essentially of the arrangement and construction of parts as illustrated in the accompanying drawings, in which:

Figure 1 is a longitudinal, cross-sectional view of the invention.

Figure 2 is a side elevation of the same.

Figure 3 is a top plan view of the brush assembly per se.

Figure 4 is a cross-sectional view, taken in the plane of the line 4—4 in Figure 1.

Figure 5 is a fragmentary perspective view showing one end of the tube casing.

Figure 6 is a perspective view illustrating the ejecting knob.

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Figure 7 is a fragmentary cross-sectional view showing a modified embodiment of the invention, and

Figure 8 is a plan view of a flow regulator disc used in Figure 7.

Like characters of reference are used to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the invention consists of a tubular casing assuming substantially the form illustrated and designated by the general reference character 10. One end of this casing is formed with a frusto-conical portion 11, the latter in turn, being provided with a central bore 12.

A collapsible tube 13, containing suitable dentifrice, is replaceably positioned in the casing 10, the threaded end portion 14 of this tube projecting through the bore 12.

The remaining end of the casing 10 is of a somewhat enlarged outside diameter as indicated at 15 and an annular groove 16 is formed in the portion 15, to accommodate a suitable resilient clip 17 of conventional design, whereby the entire invention may be conveniently attached to wearing apparel.

An internal annular groove 18 is formed adjacent the end of the casing 10 and a longitudinally extending recess 19 connects the latter groove with the end of the casing. An ejecting knob 20 is formed on one side thereof with an integral extension 21, this in turn, being provided with a radially projecting pin 22. It will be noted that by sliding this pin along the recess 19 into the groove 18, the knob 20 may be applied to the end of the casing, as shown in Figures 1 and 2. Furthermore, when the pin 22 engages the groove 18, the knob 20 and the associated extension 21 will be rotatably and removably retained in the end of the casing, as will be clearly understood with reference to the accompanying drawings.

The extension 21 is also provided with an arcuate slot 23 and the closed end of the tube 13 is twisted to form a loop 24. This loop is removably engageable with the hook defined by the slot 23 in the extension 21, and it will be noted that by rotating the knob 20, twisting motion will be imparted to the tube 10 and the contents thereof will be conveniently ejected.

The brush assembly used in the invention is designated generally by the reference character 25 and comprises an elongated body 26 formed with an outlet passage 27. This passage extends from the end of the body indicated by the character 28 and opens into an enlarged bowl or elon-

gation 29 disposed medially the length of the side 30 of the body 26.

Suitable tufts of bristles 31 are also provided on this side of the body, the same being secured in position in any conventional manner.

The remaining end of the passage 27 opens into a screw-threaded counter bore 32, whereby the assembly 25 may be removably attached to the threaded portion 14 of the tube 13 and hence to the associated casing 10. The portion 28 of the body 26 may, if desired, be of a frusto-conical configuration, in order to constitute a continuation of the portion 11 of the casing.

The removable cover for the brush assembly is designated generally by the reference character 33 and consists of a shell 34, configurated substantially as shown, and provided with an opening 35 at one end thereof. The shell 34 is also formed with a plurality of ventilating openings or apertures 36 and with pairs of longitudinally extending, inturned flanges 37, constituting the channels 38. The outer of the flanges 37 are reinforced by the end cross-members 39 and by slidably inserting the body 26 into the channels 38, the shell 34 will conveniently enclose the bristles 31, as is best shown in the accompanying Figures 1 and 4.

When using a liquid dentifrice, the rate of flow of the same to the brush may be effectively governed by a regulator disc 40, the same being formed from rubber or other resilient material and provided with a central aperture 41. The disc 40 is positioned in the inner end of the counter-bore 32 at the outlet of the tube 13 and it will be apparent that the elastic properties inherent in the disc will open or close the aperture 41 in accordance with application or removal of pressure on the tube 13.

It is believed that the operation and use of the invention will be clearly understood from the foregoing and further description thereof at this point is therefore considered unnecessary.

While in the foregoing there has been shown and described the preferred embodiment of this invention it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

What I claim as my invention is:

In a dispenser of the class described including a tubular casing and a collapsible tube positioned in said casing and having a loop provided at one end thereof, a tube collapsing mechanism comprising a knob rotatably positioned at one end of said casing and provided integrally with a flat-sided and relatively narrow extension projecting into the casing, said extension being formed with an arcuate slot having open sides and an open end at one longitudinal edge of the extension whereby the inner end portion of the extension constitutes an arcuate hook, said hook being slidably inserted in said loop whereby said tube may be axially twisted by rotation of said knob.

LUCAS MORICICH.

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