April 18, 1933. M. L. BRAMSON 1,904,612

SHAVING BRUSH AND LIKE BRUSH

Filed Oct. 25, 1929

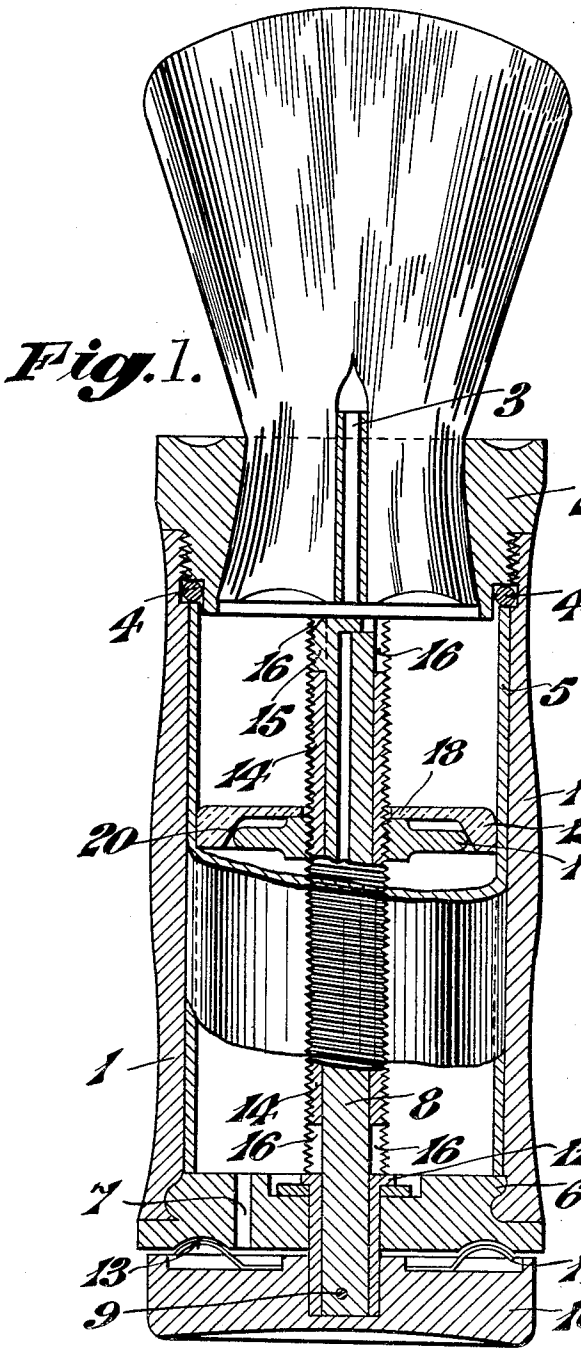


Fig. 1.

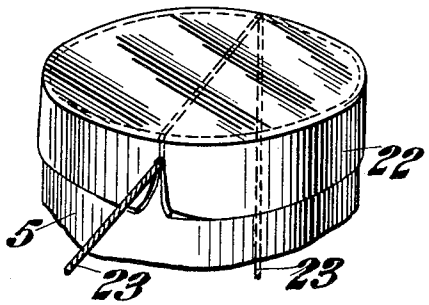


Fig. 5.

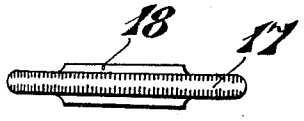


Fig. 3.

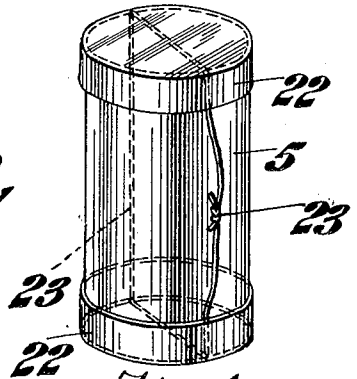


Fig 4

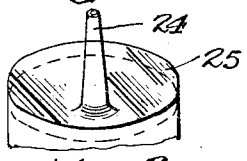


Fig 2

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UNITED STATES PATENT OFFICE

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SHAVING BRUSH AND LIKE BRUSH

Application filed October 25, 1929, Serial No. 402,337, and in Great Britain April 24, 1929.

This invention relates to shaving brushes and like brushes of that kind in which the handle portion of the brush is utilized as a receptacle for a cartridge containing soap paste or other similar substance which it is desired to supply to the brush bristles, such substance being supplied to the bristles by a hand-operated piston.

That is to say, the invention consists of a particular construction of reservoir shaving brush comprising a body or casing adapted to receive a cartridge of shaving cream or soap having a closed end provided with a neck or nozzle through which the shaving cream is extruded, a bristle-carrying end member provided with a socket, a tube leading from the interior of the body to the bristles, an end closing cap operating to retain said open-ended cartridge in position upon a packing ring, a removable and reversible screw located centrally within said cartridge, a piston comprising a binding disc co-operating with said screw and restrained from rotation by co-operation with a piston fitting closely around the inside of the cartridge, and means for rotating said screw to ensure advancement of the said binding disc and subsequent advancement of the piston disc to eject the shaving cream.

A further object of the invention comprises the provision on the end of the cartridge other than the extruding end of a cap which fits closely over said end, and having a cord thread or the like placed loosely over the said end prior to the end cap being placed in position whereby by pulling the cord the cap is fractured and thus easily removed from the cartridge prior to inserting the cartridge in the brush.

A still further object of the invention comprises the provision of a cartridge adapted to be received by the brush body or casing, and having a cord, whereby the caps can be fractured and thus easily removed from the ends of the cartridge.

The advantages of the present invention are that the cartridges can be easily and quickly inserted in leakproof engagement with the brush body, the piston disc need not be screwed back to initial position after refilling, as the screw member can be bodily reversed in position, and the cartridges do not need to be provided with any keying means to prevent rotating of the piston in them.

Reference is now directed to the accompanying drawing, wherein

Figure 1 is an enlarged sectional view of a brush according to my invention,

Figure 2 is a portion of a cartridge prior to insertion in the brush,

Figure 3 is the binding disc portion of the piston used in Figure 1,

Figure 4 is a cartridge prior to insertion in the brush shown in Figure 1, and

Figure 5 shows the cartridge cap in the act of being fractured by the pulling of the cord.

The numeral 1 designates a body portion consisting of ivory, ebonite or other suitable material. One end of this body 1 is closed by a bristle carrying closure 2 which has a tube or socket 3 passing completely through it, the bristles being bound and secured around this socket whose inner end communicates with the interior of the brush body and whose outer end projects slightly beyond the outer wall of the end closure member 2. The inner end of the closure member 2 makes a joint with a rubber or like ring 4 located adjacent the bristle end of the body member 1, and this rubber ring forms a seating on its other side for the end flange 25 of a removable cartridge 5 which contains the shaving cream.

The cartridge 5 may be provided at its extruding end with a spout or nozzle 24, which when the cartridge 5 is placed within the brush body 1 fits within the socket 3 of the head 2. The extruding end of the cartridge 5 may be moulded integral with the cartridge or may be attached in any convenient manner so that a leak-proof cartridge end is ensured.

In order that the rubber ring 4 may engage the cartridge 5, the cartridge is provided with the upwardly extending flange 25, the edge of which may be knurled.

The end of the brush body remote from the bristles is closed by an end cap 6 and this end cap 6 serves to clamp the cartridge 5 between it and the rubber ring 4. A central spindle 8

is connected to a rotatable feeding head 10 a split spring washer 11 retaining the feeding head 10 to the end cap 6 so that the parts 6 and 10 are inseparable while permitting relative rotation of the feeding head 10. The head 10 carries spring catches 12 which co-operate with recesses 13 in the end cap 6 the shape of the catches 12 being such as to permit the relative movement of the feeding head if sufficient force is exerted while at the same time giving a clear check to the rotation to indicate to the user at each half turn, for example, that a half turn has been made. A screw sleeve 14 is carried by and rotates with the feeding head 10 and the spindle 8 and the connection of the spindle 8 to this screw sleeve 14 is ensured by the spring detent 15 which engages in the slotted ends 16 of the sleeve 14 so that the feeding head 10 spindle 8 and sleeve 14 all turn together. The sleeve 14 is externally screw threaded and a piston disc 19 co-operates with the screw thread.

The other end of the cartridge 5 (see Figure 2) is enclosed prior to being used by a cap 22 which fits closely over it. Before fitting the cap 22 over the end of the cartridge 5 a cord thread or the like 23 knotted at its ends, is placed over the end of the cartridge, and the cap 22 then put in place over the cord 23.

In operation, the cartridge 5 containing the shaving cream is prepared for insertion into the brush body by pulling the cords 23, which fractures the cap 22 and thus permits its easy removal from the cartridge 5. The cord 23 being knotted at both ends is thus prevented, upon being pulled in order to fracture the cap 22, from slipping through between the cap 22 and cartridge 5.

The cartridge 5 is then placed within the brush body 1 so that the nozzle 24 resides within the socket 3 when such nozzle is provided.

The end of the brush body remote from the bristles is closed by an end cap 6 having an air vent 7, the cap serving to clamp the cartridge 5 between it and the rubber ring 4.

A piston comprising a binding disc 17 and a piston disc 19 co-operate with the sleeve 14 to expel the soap from the interior of the cartridge 5 through the tube 3. The binding disc 17 is provided with a central boss portion 18 which is bored and screw-threaded to co-operate with the sleeve 14, which is externally screw-threaded. The outside edge of the binding disc 17 is knurled, as shown in Figure 3. Fitting closely and slidable in relation to the inside of the cartridge case 5 is the piston disc 19 of rubber or similar material having a central hole through which the sleeve 14 freely passes. On the lower side and around the edge of the piston disc 19 is a flange 20 which provides an increased bearing surface between the piston disc 19 and the cartridge case 5, the inner surface of the flange 20 being substantially concave. The boss 18 of the binding disc 17 bears upon the portion of the piston disc 19 surrounding the hole through which the sleeve 14 passes, whilst the knurled edge of the binding disc 17 engages the concave inner surface of the flange 20 of the piston disc 19. The knurled edge of the binding disc 17 bites into the flange 20 when the spindle 8 and sleeve 14 are turned, and thus the binding disc 17 is frictionally held against rotation and merely travels upwards, carrying with it the piston disc 19 which by means of its close contact with the cartridge 5 is held against rotation. Thus each half turn of the head 10 ensures a definite axial movement of the binding disc 17, the upward movement of the piston disc 19, and the consequent displacement through the tube 3 of a definite quantity of shaving cream contained in the cartridge 5.

A small clearance 21 is provided on the lower side of the closure 2 to enhance the accessibility of the shaving cream to the tube 3.

A piston disc 19 is provided within each cartridge 5.

The cartridge 5 (see Figure 1) in which the shaving cream is contained is preferably made of celluloid or other transparent inert material and enclosed at its ends by caps 22 of the same or other suitable material for example viscose and adapted to fit tightly around the cartridge ends. The cartridge case 5 after having been filled with soap paste has a cord 23 loosely tied around it lengthwise. Then the caps 22 are put into place over the ends of the cartridge and the cord 23.

When it is desired to open the cartridge (Figs. 4 and 5) prior to its insertion into the brush, a pull at the cord 23 at say its knot portion will cause the rims of the caps 22 to be fractured, as shown in Figure 5, whereupon the caps may be removed from the cartridge ends with ease.

A cartridge containing cream is inserted into the handle or body 1. The end cap 6 carrying the feeding head 10 and the spindle 8 and screwed sleeve 14 is screwed into position care being taken that the binding disc 17 is at its extreme position adjacent the cap 6. The feeding head 10 is then rotated until sufficient of the shaving cream has been ejected from the tube 3 into the bristles and after the brush has once been used it will be found that one turn or even in some cases a half turn of the feeding head 10 will be sufficient to eject the quantity of the cream necessary for each operation. It will be appreciated that the binding disc 17 will gradually creep forward and carry the piston disc 19 with it until all the cream in the cartridges has been used up and the binding disc 17 will then be at its extreme position at the bristle end of the body or casing 1.

The end cap 6 is then unscrewed and re-

moved together with the head 10, spindle 8, sleeve 14 and binding disc 17. The empty cartridge case 5 with the piston disc 19 is removed and another one inserted. The screwed sleeve 14 is pulled off the spindle 8 and reversed so as to adjust the binding disc adjacent the cap 6 again. The sleeve 14 is then forced on the spindle 8 again.

The end cap 6 is then screwed into its closing position and the brush is again ready for use and it will be seen that when the feed head 10 is turned the detent 15 snaps into one or other of the slots 16 and clutches the spindle 8 to the sleeve 14 when further rotation of the head 10 will cause rotation of the screw-sleeve 14 and corresponding advancement of the binding disc 17 to cause ejectment of the shaving cream through the tube 3 as before.

By this arrangement of spindle 8 and sleeve 14 the bother of screwing back the binding disc 17 at each refilling operation is avoided.

What I claim and desire to secure by Letters Patent is:—

1. A reservoir brush comprising a casing, a cartridge containing shaving soap or cream in the casing, a bristle carrying end member secured on one end of the casing, a cream supplying tube extending from the inside of the casing to the inside of the bristles, an end closing cap operating to clamp the cartridge in the casing, a screw located centrally within the cartridge, means for rotating the screw, a binding disc operated by the screw, and a piston disc the periphery of which bears on the inner surface of the cartridge, a concave recess being formed by a flange provided on the under side of the piston disc, the inner side of which frictionally engages the edge of the binding disc so that the latter will drive the former in one direction only when the screw is rotated.

2. A reservoir brush comprising a casing, a cartridge containing shaving soap or cream in the casing, a bristle carrying end member secured on one end of the casing, a cream supplying tube extending from the inside of the casing to the inside of the bristles, an end closing cap operating to clamp the cartridge in the casing, a screw located centrally within the cartridge, means for rotating the screw, a binding disc having a knurled periphery operated by the screw, and a piston disc the periphery of which bears on the inner surface of the cartridge, a concave recess being formed by a flange provided on the under side of the piston disc, the inner side of which frictionaly engages the knurled periphery of the binding disc so that the latter will drive the former in one direction only when the screw is rotated.

In witness whereof I affix my signature.

MOGENS LOUIS BRAMSON.