June 1, 1937. F. TAYLOR 2,082,527

DISPENSING DEVICE

Filed Oct. 9, 1936

Fig. 1.

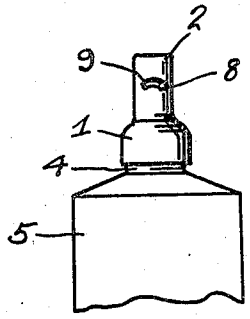


Fig. 2.

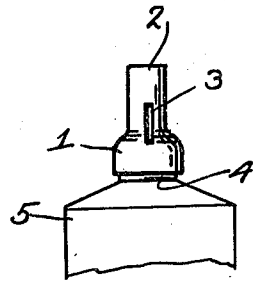


Fig. 3.

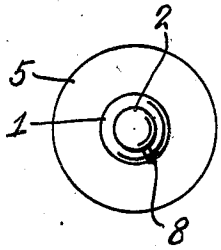


Fig. 4.

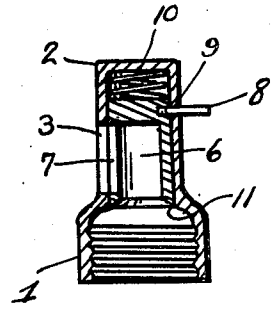


Fig. 5.

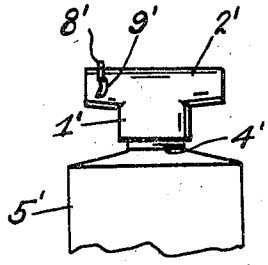


Fig. 7.

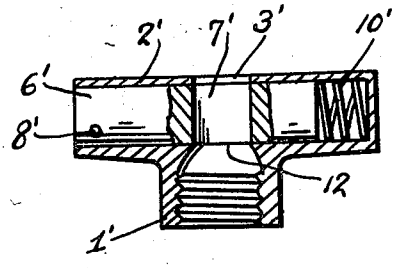
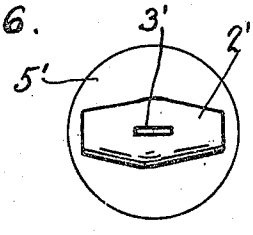


Fig. 6.



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DISPENSING DEVICE

Frank Taylor, Sedalia, Mo.

Application October 9, 1936, Serial No. 104,873

3 Claims. (Cl. 221—60)

This invention relates to a dispensing device to replace the ordinary screw cap of a collapsible or compression tube receptacle such as is conventionally used for holding and dispensing toothpaste, cream, etc.

An object of the invention is to provide a dispensing device through which the paste contents of the tube or container are ejected in ribbon-like form, and which is operated to dispense a sharp-cut strip of the paste and to close the dispensing opening in a manner leaving the container unsmeared and in a sanitary condition.

A further object of the invention is to provide novel automatic means for holding the dispensing device in open and closed position.

With the above objects in view, the invention consists generally in the novel arrangement, construction and combination of parts hereinafter more fully described and pointed out with reference to the accompanying drawing, wherein:

Figure 1 is a side view of a portion of a collapsible tube or container with the dispensing device applied thereto.

Figure 2 is a view from the opposite side thereof.

Figure 3 is a top plan view of the device shown in Figure 1.

Figure 4 is a vertical central sectional view thereof.

Figure 5 is a side view of a modification of the invention.

Figure 6 is a top plan view of the structure shown in Figure 5.

Figure 7 is a vertical central sectional view thereof.

Referring more particularly to the dispensing device illustrated in Figures 1 to 4 inclusive, the device comprises a base or cap portion 1 having a vertical extension or nozzle 2; the latter being closed at its outer end but having a rectangular opening 3 in the side thereof and adjacent the cap 1. The cap 1 is internally screw-threaded to screw on the threaded neck 4 of the tube or container 5 and, upon compression of the tube the paste contents thereof are forced up through the cap and into the nozzle area from whence it is ejected in ribbon-like form through the dispensing opening 3. The passage of the paste through the cap and dispensing opening is regulated and controlled by a valve plug or cylinder 6 having a cylindrical bore or passage in communication with the cap at its lower end but being closed at its upper end. The bore has an outlet through a rectangular opening 7 in the side wall of the cylinder and is adapted to be rotated axially within the nozzle 2 for placing the opening 7 into and out of registration with the dispensing opening 3. A laterally projecting pin or lever 8 is mounted in the outer end of the valve plug and provides the means for rotating the plug, said pin travelling in an angular slot 9 in the side wall of nozzle 2 and substantially diametrically opposite the dispensing opening 3. The valve plug is retained in any position to which rotatably adjusted by means of a coil spring 10 confined within the nozzle between the top or outer end of the valve plug and the adjacent closed end of the nozzle.

The spring, by reason of its tendency to expand, exerts an axial thrust against the valve plug and causes the operating pin to frictionally bear against the inner cam edge of the angular guide opening 9. The lower extremity of the valve cap 6 and the adjacent inner wall of cap 1 are correspondingly rounded as shown at 11 to permit smooth and unobstructed passage of the paste or cream from the tube to the nozzle. Openings 3 and 7 have square edges so that when the opening 7 is moved past the opening 3 during the rotation or turning of the valve plug from the open to the closed position, the strip or paste or cream material protruding from the nozzle is sheared off with no residue remaining on or clinging to the nozzle. Wastage of the material is thereby prevented and the smearing of the nozzle and the container is avoided.

In the modified or T-type of dispensing device illustrated in Figures 5 to 7 inclusive, the nozzle 2' is horizontally disposed and centered crosswise of the cap 1' with the dispensing opening or port 3' at the top center thereof as shown in Figures 6 and 7. The nozzle is substantially cylindrical and is closed at one end and open at the other end for the reception of the valve plug 6' and the valve plug locking spring 10'. The plug 6' is a solid body having a narrow rectangular port 7' extending centrally and transversely therethrough. When it is desired to dispense all or part of the contents of the tube 5' to which the device is attached, the plug 6' is turned, by the operating pin or lever 8' exposed through the arcuate slot 9' in the nozzle, to dispose the port 7' in line with the dispensing port 3' at the top of the nozzle and a port 12 in the top of the cap directly below the dispensing port to provide a clear passage from the tube to the nozzle port. The T-type dispensing device is operated in substantially the same manner as the type of connection with

the straight or vertical type device shown in Figure 1.

Having thus described the invention, what is claimed is:

1. A collapsible tube closure comprising a screw cap having a port, a rotary plug in said cap having an opening therethrough, a pin projecting from said plug and providing means for rotating the latter to place the said opening in and out of registration with the said port, said pin travelling in an angular slot in the said cap, and a spring between one end of the plug and the adjacent end of the cap and tensioned to exert axial pressure on the plug to hold the latter and the pin in any position to which turned.

2. A dispensing device for a paste tube comprising a screw cap having a hollow vertically disposed nozzle extension provided with an axial bore apertured to provide a dispensing opening on one side and a transversely disposed and upwardly arched slot on the opposite side, a valve plug mounted in said nozzle for rotary and axial movement in the said bore thereof, said plug having a passage leading axially inwardly of its lower end and laterally outwardly of its upper portion, and operating pin carried by said plug and extending outwardly through the slot in the nozzle for turning said plug to place the lateral end of the plug passage in and out of registration with said dispensing opening, and elastic means in compression between the outer end of the plug and the adjacent end of the nozzle for imparting thrust axially on the said plug to yieldably hold the pin against an edge of the said slot.

3. A dispensing closure for a paste tube comprising a screw cap, a cylinder integral with said cap and extending centrally and crosswise of the upper end of the cap and having a dispensing port at the top center thereof, said cylinder being of hollow construction closed at one end and having a circumferentially disposed angular slot in its other end, a rotatable valve plug in said cylinder and provided with a transverse port for registration with the dispensing of the cylinder, a spring between the closed end of the cylinder and the adjacent end of the plug for imparting thrust axially on said plug in the direction of the slotted end of the cylinder, and an operating element carried by said plug and extending outwardly through the said angular slot in the cylinder.

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