Aug. 4, 1925. 1,548,118

A. A. DENSMORE

DISPENSING TOP FOR RECEPTACLES

Filed June 8, 1923

Fig. 1

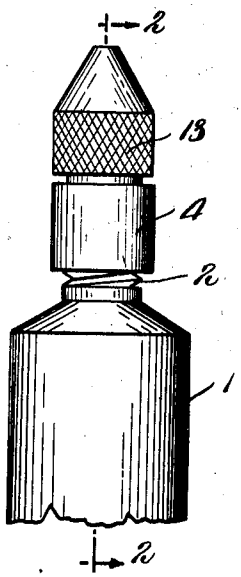


Fig. 2

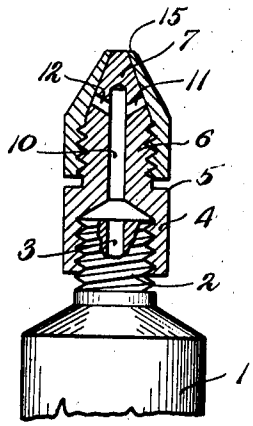


Fig. 3

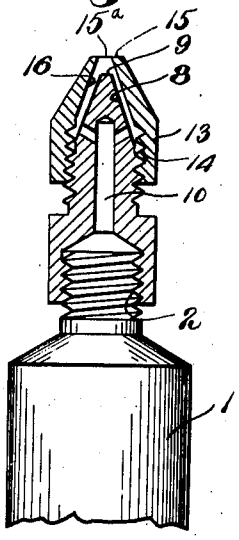


Fig. 6

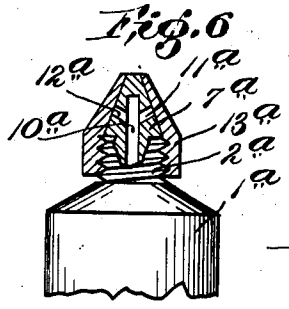


Fig. 4

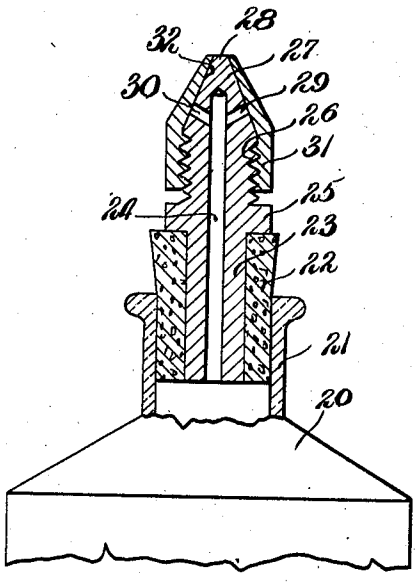
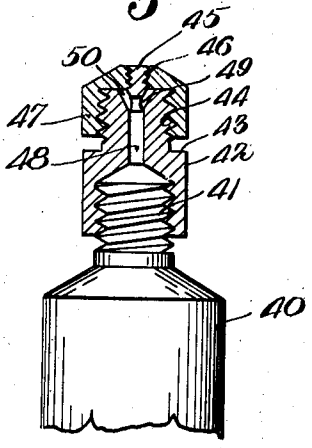


Fig. 5



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UNITED STATES PATENT OFFICE.

ALBERT A. DENSMORE, OF BROOKLINE, MASSACHUSETTS.

DISPENSING TOP FOR RECEPTACLES.

Application filed June 8, 1923. Serial No. 644,155.

To all whom it may concern:

Be it known that I, ALBERT A. DENSMORE, citizen of the United States of America, and resident of Brookline, in the county of Norfolk and State of Massachusetts, have invented new and useful Improvements in Dispensing Tops for Receptacles, of which the following is a specification.

This invention pertains to dispensing tops for receptacles such for example as collapsible tops, bottles or cans adapted to hold paste, liquid, or powder and relates more particularly to dispensing tops of that type wherein the cap, cover, or other closure member remains attached to the top during the dispensing operation.

Many substances commonly dispensed from tubes, bottles or cans provided with dispensing tops, and particularly pastes and powders, are injuriously affected by exposure to the air or moisture. The most common effect of such exposure is to harden or cake the exposed material, making it unfit for its intended use and blocking or clogging the apertures of the dispensing top.

Dispensing tops of the above type as usually constructed provide a recess, cavity, or pocket in which a small portion of the material is exposed after the dispensing operation and after the closure of the cap, and the material thus exposed as above stated frequently hardens or cakes so that when the top is again opened, it is difficult to dispense further material therefrom. Moreover, the small portion of the contents of the container which is exposed in such pocket or cavity may, from its nature, cause injury to surrounding materials or articles, as for example, if the container is carried in the pocket or packed in contact with articles of wearing apparel.

The principal object of the present invention is accordingly to provide a dispensing top of such character that when the cap or cover is in closed position the dispensing orifice or aperture is completely obturated, thus eliminating cavities, pockets, or recesses in which portions of the extruded material may remain exposed to the atmosphere during the intervals of dispensing operations.

Further objects are to provide a dispensing top of the above character applicable to collapsible tubes, cans or bottles of the usual type, or which may alternatively form an inseparable portion of such containers, as well as to provide a top of simple construction capable of dispensing the material freely and rapidly.

In the accompanying drawings several desirable embodiments of the invention are illustrated and in such drawings:

Fig. 1 is a fragmentary side elevation of a container of usual type having a preferred form of dispensing top constructed in accordance with the present invention applied thereto;

Fig. 2 is a vertical section on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view similar to that of Fig. 2 but showing the parts of the top as positioned for the dispensing operation;

Fig. 4 is a view in vertical section illustrating a modified form of dispensing top as applied to a bottle;

Fig. 5 is a vertical section of a modified form of top; and

Fig. 6 is a view in vertical section showing the dispensing top as forming an inseparable part of a container.

Referring to Figs. 1 to 3 inclusive the numeral 1 indicates a container, such for example as a collapsible tube or can, provided with an exteriorly screw-threaded neck 2 having an axial passage or channel 3.

The dispensing top proper comprises a body portion 4 which is internally screw-threaded at its lower end for engagement with the screw threads of the neck 2 of the container. This body portion is preferably reduced in diameter at its upper part, providing a shoulder at 5 and the cylindrical tubular portion 6 which is externally screw-threaded.

The cylindrical portion 6 has a truncated conical end 7 which is imperforate, having the conical peripheral surface 8 and the flat top 9.

The body portion is provided with an axial passage or canal 10 from the upper part of which one or more lateral branch passages such as 11, 12 extend outwardly and open at the conical surface 8.

The cap 13, of tubular form, is provided with internal screw threads at 14 for engagement with the threads of the cylindrical part 6 of the body portion. This cap preferably terminates at its upper end in a substantially flat surface 15 and the interior cavity of the cap ends at such surface in an opening 15ª of substantially the same diameter as that of the end surface 9 of the part 7. The interior surface 16 of the upper part of the cap is

conical and adapted to fit snugly against the conical surface 8 of the part 7 when the cap is in closed position.

The dispensing top thus provided is attached to the neck 2 of a collapsible tube or can and during the intervals between dispensing operations the cap 13 occupies the position shown in Figs. 1 and 2. As thus arranged the extrusion of the contents of the container outwardly through the passages 11, 12 is entirely prevented while the end of the top presents a smooth surface having no aperture or pocket for the retention of extruded material. When it is desired to dispense material from the container the cap is unscrewed until it occupies the position shown in Fig. 3. This leaves an annular passage between the cap and the conical surface 8 and the material from the container may now pass freely up through the channel 10, the passages 11, 12, the annular chamber between the cap and the part 7, and out through the opening at 15^a.

At the conclusion of the dispensing operation the cap is returned to its original position and as the top surface 15 of the cover comes into the plane of the end surface 9 of the member 7 the opening at 15^a is entirely obliterated so that none of the extruded material is left in a position where it may be exposed to the air or where it may cause damage to articles with which the device may come in contact.

In Fig. 4 the container 20 is illustrated as a bottle of ordinary form having a neck 21 and a cork 22. The dispensing top comprises a body portion having a cylindrical part 23 adapted to be inserted in an opening in the cork 22. The part 23 is provided with an axial channel or passage 24 and has an outstanding flange 25 which limits its downward movement through the cork. The upper part of the body portion of the top is externally screw-threaded at 26 and terminates in a truncated conical end 27 having a flat top 28. The passage 24 has branches 29, 30 which open at the conical surface of the top 27. A cap 31 is arranged to engage the screw threads at 26 and this cap has a conical inner surface 32 adapted to fit snugly against the conical part 27 when the cap is closed.

The operation of the top in this case is substantially the same as that of the top above described, the only substantial difference being that the top shown in Fig. 4 is adapted for application to a cork rather than to the screw-threaded neck of a collapsible tube or can.

Referring to Fig. 5, the container 40, which may be a collapsible tube or can, is shown as provided with a neck 41 externally screw-threaded for engagement with the body portion 42 of a dispensing top. This body portion may, as in the previous instances, be reduced in diameter at its upper part to provide a shoulder at 43, the upper part being externally screw-threaded at 44.

In this instance, however, the body portion terminates in a cylindrical, externally screw-threaded part 45 instead of the tapered or truncated conical portion disclosed in the preceding figures.

A cap 47 has screw-threaded engagement with the threads 44 of the body portion and also with the external screw threads 46 of the part 45. The body portion is provided with a central passage 48 provided with the branches 49, 50 which open substantially at the base of the part 45. The upper end of the cap has a flat surface, which, when the cap is closed, is substantially flush with the upper end of the part 45.

With this arrangement the cap is unscrewed until it is entirely disengaged from the part 45 thus leaving a passage around the screw threads 46 for the material to be dispensed. At the end of the dispensing operation the cap is again screwed down so that the part 45 entirely fills the opening in the end of the cap.

The device shown in Fig. 6 is substantially identical as that shown in Figs. 1 to 3 inclusive except that in this case the container 1^a is provided with a neck 2^a which is externally screw-threaded for direct engagement with the cap 13^a. The neck 2^a terminates in an end portion 7^a having the axial passage 10^a provided with the branches 11^a, 12^a opening at the conical surface of the tapered part 7^a.

In the devices shown in all of the several figures the closure of the cap completely obliterates the dispensing orifice or aperture so that by the use of either of such orifices the principal object of the invention is attained.

I claim:

1. A dispensing top for receptacles comprising a nozzle terminating in a truncated conical end, the nozzle having a canal or passage opening at the conical surface of said end, and a cap having a conical inner surface adapted to fit snugly over the conical end of the nozzle, the end of the cap when closed being flush with the end of the nozzle.

2. A dispensing top for receptacles comprising a body portion provided with means for detachably securing it to the receptacle and having a truncated conical end imperforate at its extremity, said body portion having a passage leading therethrough and opening at its conical surface, and a cap having screw-threaded engagement with said body portion and having a conical inner surface adapted to fit snugly against the conical surface of said end.

3. A dispensing top comprising a body portion having a cylindrical, externally

screw threaded part and a truncated conical end, said cylindrical part having an axial channel and the end having a lateral passage communicating with said channel and opening at its conical surface, and a tubular cap having an internally screw threaded part engaging the cylindrical part of the body portion and an inner conical surface adapted to fit snugly against the conical surface of the end of the body portion.

Signed by me at Boston, Massachusetts, this 7th day of June, 1923.

ALBERT A. DENSMORE.