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T. M. HAHN ET AL

1,840,194

CLOSURE DEVICE

Filed April 10, 1930

Fig. 1.

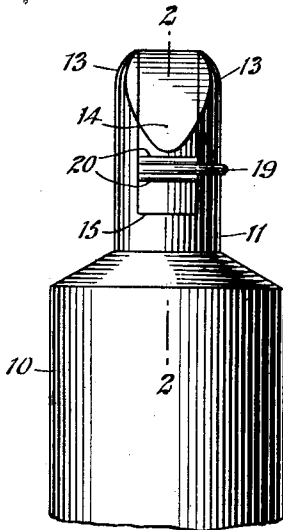


Fig. 2.

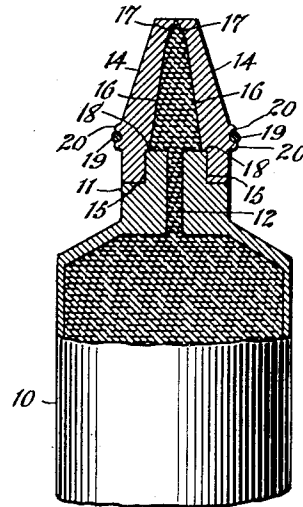
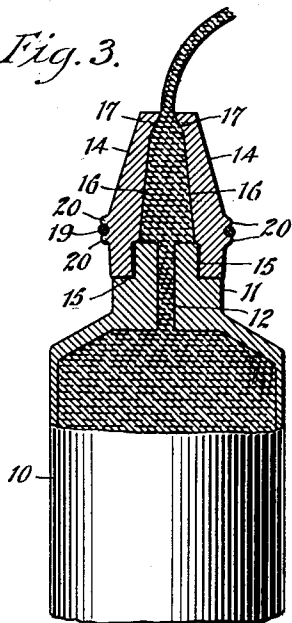


Fig. 3.



WITNESSES

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Chris Feinle.

Fig. 4.

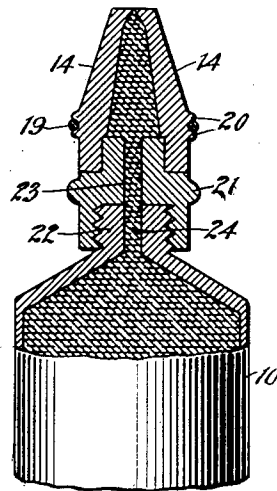
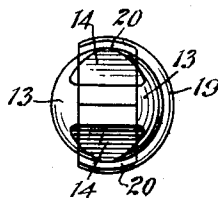


Fig. 5.



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CLOSURE DEVICE

Application filed April 10, 1930. Serial No. 443,216.

This invention relates to a closure device for the outlet of a container or collapsible tube filled with tooth-paste, shaving cream, and other semi-liquid or liquid substances.

5 The principal object of the invention is the provision of a simple, efficient, reliable and inexpensive closure device for the outlet of a container or collapsible tube, which is self-closing and operatively yielding by contain-
10 er or tube contents, when pressure is exerted thereon, whereby the desired quantities may be discharged through the outlet at will.

The nature of the invention and its distinguishing features and advantages will appear when the following specification is read in connection with the accompanying drawings, in which

15 Figure 1 is a side view of the outlet end of a container or collapsible tube having the device of the present invention applied to the outlet thereof;

Figure 2 is a section taken on the line 2—2 of Figure 1;

25 Figure 3 is a view similar to Figure 2 showing the manner in which the contents is discharged from the outlet;

Figure 4 is a view similar to Figure 2 but showing a modification;

30 Figure 5 is a plan view of the device detached.

The device of the present invention will be used in conjunction with a container or collapsible tube 10 having a neck 11 having an outlet passage 12 which communicates with the interior of the container or tube 10. In accordance with the invention the device for controlling the outlet passage 12 is applied to the neck 11. The device includes closure members 13 which are arranged in spaced relation and are secured to or formed integral with the neck 11. The device also includes a pair of co-operative closure members 14 which are arranged diametrically opposite to each other between the closure members 13.
45 The lower end of each closure member 14 is received in a recess 15 in the neck 11. Each closure member 14 has relatively angularly disposed faces 16 and 17 on the inside thereof and a shoulder 18 which rests on the upper
50 surface of the neck 11. The closure members

14 are arranged for movement toward and away from each other in frictional engagement with the closure members 13. When the closure members 14 are brought together, the outer ends will abut each other to thereby
55 close or seal the outlet formed by the neck 11. When the closure members 14 are in abutting relation, the faces 16 will converge relatively toward the outer ends of the closure members 14 and the faces 17 will also converge relatively in a similar manner. In order to resiliently or yieldingly retain the closure members 14 normally in the abutting relation to close the outlet, there is provided
60 resilient means, which in the present instance is in the form of a semicircular spring 19 whose terminals respectively co-operate with means on the closure members 14. In the present instance each terminal of the spring is disposed between laterally projecting
65 spaced lugs or projections 20 on the related member 14. The spring 19 embraces or extends around one of the closure members 13.

From the foregoing it will be apparent that the device herein above described is one which
75 is self-closing to prevent unintentional discharge of the contents from the container or collapsible tube 10. It will also be apparent that when pressure is exerted on the contents of the container or collapsible tube 10, the
80 contents will exert pressure on the faces 16 and 17 of the closure members 14 causing them to move away from each other against the action of the spring 19. In this way the desired quantity of the contents of the container or collapsible tube 10 may be discharged from the container or collapsible tube through the outlet. It will also be understood that when a collapsible tube is used
85 pressure may be exerted on the contents thereof by collapsing the tube by exerting pressure on the tube. When a non-collapsible container is used pressure may be exerted on the contents by a plunger or the like to force it toward the outlet.
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If desired, the device may be applied to a standard screw-threaded neck forming a part of a container or tube, as shown in Figure 4, in which case use will be made of an adapter 21. The adapter will be adapted for
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threading engagement with the threaded neck 22 and will have a passage 23 therein which forms a continuation of the passage 24 in the neck 22. In other respects the closure
5 devices will be similar to the device as described hereinabove.

We claim:

1. In combination with a neck outlet, fixed
closure members on said outlet, movable clo-
10 sure members arranged between said fixed closure members, said outlet having recesses which receive the lower ends of said movable closure members to maintain said ends separated, and a resilient member which embraces
15 at least one of said fixed closure members and also said movable closure members whereby to retain said movable closure members normally in contact with each other at their outer ends to close said outlet, and
20 also to yield from the closed relation to an opened relation.

2. In combination with a neck outlet, fixed
closure members on said outlet, movable clo-
25 sure members arranged between said fixed closure members, said outlet having recesses which receive the lower ends of said movable closure members to maintain said ends separated, and a substantially semicircular spring
30 which embraces at least one of said fixed closure members and also said movable closure members, whereby to retain said movable closure members normally in contact with each other at their outer ends to close said
35 outlet, and also to yield from the closed relation to an opened relation.

3. In combination with a neck outlet, fixed
closure members on said outlet, movable clo-
40 sure members arranged between said fixed closure members, said outlet having recesses which receive the lower ends of said movable closure members to maintain said ends separated, a substantially semicircular spring
45 which embraces at least one of said fixed closure members and also said movable closure members, and the opposite ends of said spring member being received respectively between portions of said movable closure
50 members, whereby to retain said movable closure members normally in contact with each other at their outer ends to close said outlet, and also to yield from the closed relation to an opened relation.

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