March 6, 1945. A. H. REED ET AL 2,370,995

DISPENSER

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Fig. 1.

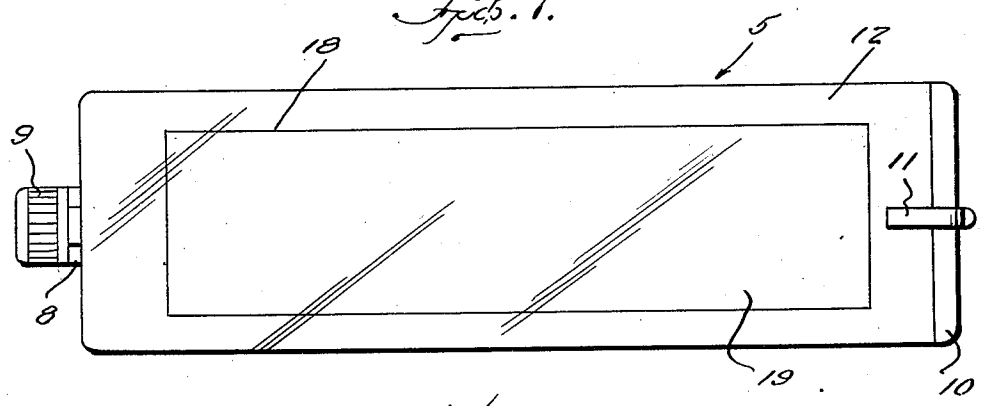
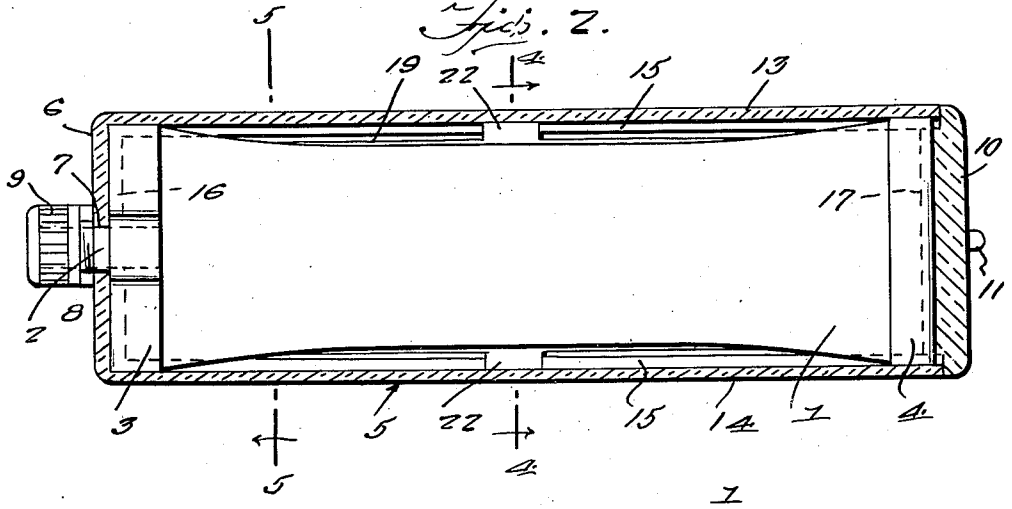


Fig. 2.



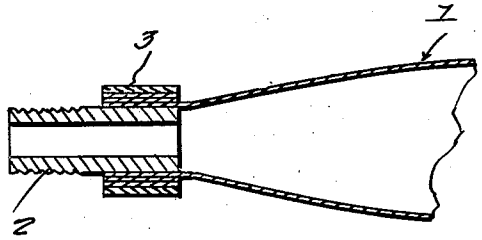


Fig. 7.

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DISPENSER

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Fig. 3.

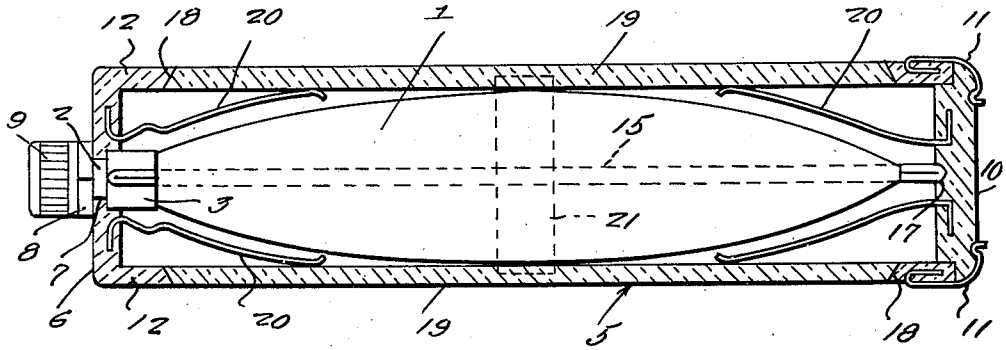


Fig. 4.

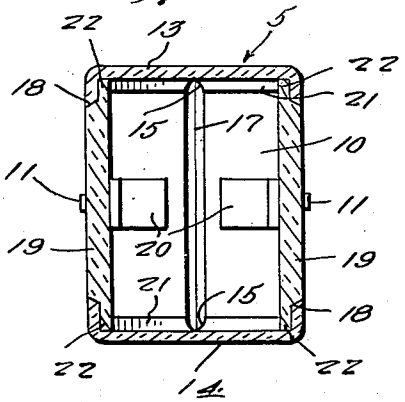
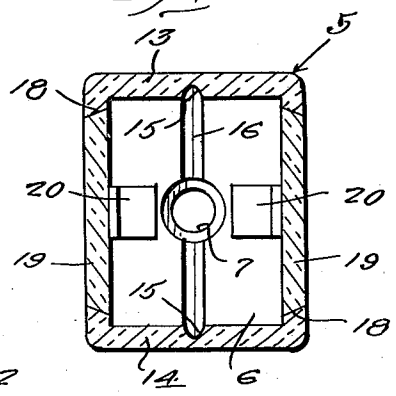


Fig. 5.



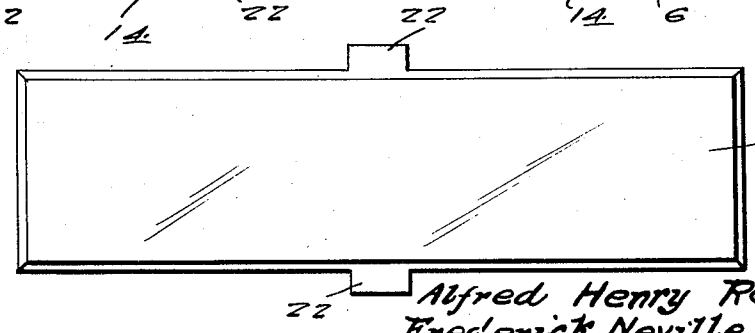


Fig. 6.

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UNITED STATES PATENT OFFICE

2,370,995

DISPENSER

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Application April 28, 1942, Serial No. 440,850

3 Claims. (Cl. 222—103)

The present invention relates to new and useful improvements in dispensers of the collapsible tube type, particularly for tooth paste, shaving cream, et cetera, and has for its primary object to provide, in a manner as hereinafter set forth, a novel combination and arrangement whereby substantially all of the contents of the container may be conveniently ejected therefrom in a neat, sanitary manner, thus preventing waste.

Another very important object of the invention is to provide a dispenser of the character described embodying a construction and arrangement whereby products of the aforementioned character may be satisfactorily sold and used in collapsible tubes or containers of Cellophane lined paper or other suitable material than tin, lead, et cetera, such as are in widespread use at present.

Other objects of the invention are to provide a dispenser of the character described which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact, light in weight, attractive in appearance and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a view in side elevation of a dispenser constructed in accordance with the present invention.

Figure 2 is a view in vertical longitudinal section through the device.

Figure 3 is a view in horizontal section through the device.

Figures 4 and 5 are cross-sectional views, taken substantially on the lines 4—4 and 5—5, respectively, of Figure 2.

Figure 6 is a view in side elevation of one of the ejectors.

Figure 7 is a view in horizontal section through the forward end portion of the collapsible tube.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises an elongated collapsible tube or container 1 of suitable material, said container being of substantially the shape shown to advantage in Figures 2 and 3 of the drawings. The forward end portion of the collapsible container 1 is folded and has formed therein an opening for the reception of one end portion of a discharge neck 2. Pressed over this end portion of the container 1, around the neck 2, is a metallic clip 3. After the container 1 is loaded, the rear end thereof is flattened and closed by a metallic clip 4.

An elongated housing 5 of suitable material is provided for the reception of the collapsible container 1. The forward end 6 of the housing 5 has formed therein a counterbored opening 7 which accommodates the neck 2 and the central portion of the clip 3. A retaining nut 8 is threaded on the neck 2, after which a removable cap 9 is applied to said neck.

The housing 5 further includes, on its rear end, a removable closure 10. Spring latches 11 on the side walls 12 of the housing 5 releasably secure the closure 10 in position on said housing.

The top and bottom 13 and 14, respectively, of the housing 5 have formed longitudinally therein grooves or channels 15. The forward end 6 of the housing 5 has formed therein a vertical groove 16. A vertical groove 17 (see Fig. 4) is provided in the closure 10. The grooves 15, 16 and 17 communicate and accommodate the clips 3 and 4 when the collapsible container 1 is inserted in the housing 5.

The side walls 12 of the housing 5 have formed therein longitudinally elongated openings 18. The openings 18 accommodate ejectors in the form of plates 19 which are engageable with the opposite sides of the container 1 for squeezing and collapsing said container therebetween. The walls of the openings 18 are beveled for permitting the correspondingly shaped edges of the ejectors 19 to seat thereon. Springs 20 are mounted on the forward end 6 and the closure 10 of the housing 5 for opening or spreading the ejectors 19. The top and bottom 13 and 14 of the housing 5 have formed transversely therein guide channels 21. Lugs 22 on the upper and lower edges of the ejectors 19 are operable in the guide channels 21.

It is thought that the manner in which the dispenser functions will be readily apparent from a consideration of the foregoing. Briefly, the closure 10 is removed to permit the collapsible container 1 to be inserted in the housing 5, the end portions of the clips 3 and 4 traveling in the grooves 15. When the discharge neck 2 projects through the opening 7 and the clip 3 seats in the groove 16, the closure 10 is applied, the groove 17 therein receiving the clip 4. The nut 8 is then screwed on the discharge neck 2 and tightened against the forward end 6 of the housing 5. Thus, the collapsible container 1 is firmly secured in

position in the housing. Of course, the cap 9 is applied after the nut 8 has been screwed home. When the dispenser is to be used, the cap 9 is removed. The ejectors 19 may then be forced inwardly against the tension of the springs 20 by the thumb and fingers of the hand which holds the device. When the ejectors 19 are thus forced inwardly the collapsible container 1 is squeezed therebetween and the desired quantity of paste or cream is forced therefrom.

It is believed that the many advantages of a dispenser constructed in accordance with the present invention will be readily understood, and although a preferred embodiment of the device is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

1. A dispenser comprising an elongated collapsible tube having parallel flattened ends, metallic clips pressed over and securing said flattened ends in closed condition, one of said ends having a central opening, and a discharge neck having its inner end secured in said opening by the adjacent clip, a housing in which said tube is arranged, said housing having an end wall provided with a central opening, said neck fitting in and projecting outwardly through said opening of the end wall, a removable closure for the other end of the housing, the inner surfaces of said end wall and said closure having grooves therein receiving the outer longitudinal edge portions of the clips on the ends of the tube, said housing having spaced opposed walls parallel with each other and said grooves, the major central portions of said opposed walls being separate from the surrounding portions thereof and affording ejector plates adapted to be pressed toward each other to collapse said tube, means cooperating with said housing to limit separation of said central wall portions to a position wherein the same are co-planar with said surrounding wall portions, and springs in the housing normally acting to position said central wall portions at their limits of separation.

2. A dispenser comprising an elongated collapsible tube having parallel flattened ends, metallic clips pressed over and securing said flattened ends in closed condition, one of said ends having a central opening, and a discharge neck having its inner end secured in said opening by the adjacent clip, a housing in which said tube is arranged, said housing having an end wall provided with a central opening, said neck fitting in and projecting outwardly through said opening of the end wall, a removable closure for the other end of the housing, the inner surfaces of said end wall and said closure having grooves therein receiving the outer longitudinal edge portions of the clips on the ends of the tube, said housing having spaced opposed walls parallel with each other and said grooves, the major central portions of said opposed walls being separate from the surrounding portions thereof and affording ejector plates adapted to be pressed toward each other to collapse said tube, means cooperating with said housing to limit separation of said central wall portions to a position wherein the same are co-planar with said surrounding wall portions, and springs in the housing normally acting to position said central wall portions at their limits of separation, there being two pairs of said springs respectively anchored at their outer ends to the end wall and to the closure of the housing, the inner ends of the springs engaging opposite end portions of said central wall portions at opposite sides of the tube.

3. A dispenser comprising an elongated collapsible tube having parallel flattened ends, metallic clips pressed over and securing said flattened ends in closed condition, one of said ends having a central opening, and a discharge neck having its inner end secured in said opening by the adjacent clip, a housing in which said tube is arranged, said housing having an end wall provided with a central opening, said neck fitting in and projecting outwardly through said opening of the end wall, a removable closure for the other end of the housing, the inner surfaces of said end wall and said closure having grooves therein receiving the outer longitudinal edge portions of the clips on the ends of the tube, said housing having spaced opposed walls parallel with each other and said grooves, the major central portions of said opposed walls being separate from the surrounding portions thereof and affording ejector plates adapted to be pressed toward each other to collapse said tube, means cooperating with said housing to limit separation of said central wall portions to a position wherein the same are co-planar with said surrounding wall portions, and springs in the housing normally acting to position said central wall portions at their limits of separation, said housing having guide grooves in the inner surfaces of opposed walls thereof, and guide lugs on the longitudinal edges of said central wall portions and engaging in said guide grooves for causing said central wall portions to move in a straight path when pressed toward each other.

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