Aug. 6, 1940. A. A. WEISBERGER 2,210,226

TUBE SQUEEZER

Filed Jan. 20, 1939

Fig. 1.

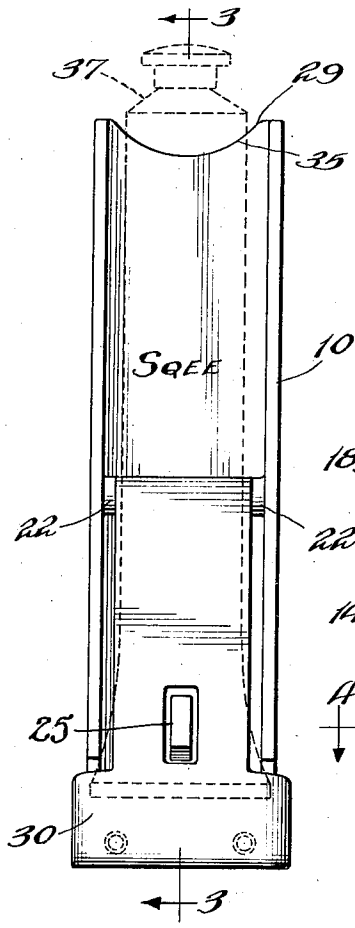


Fig. 2.

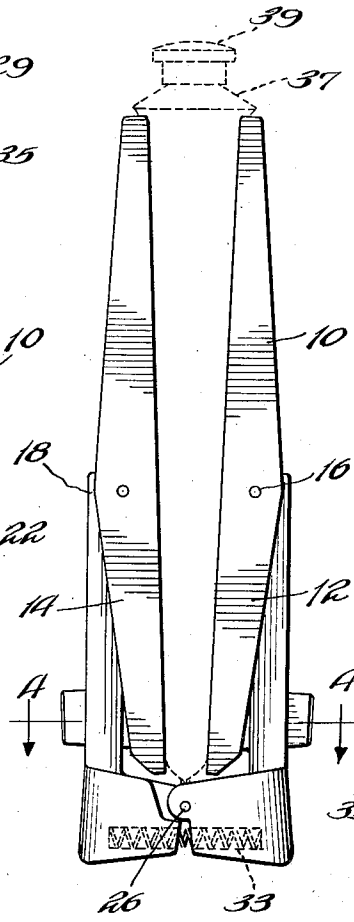


Fig. 3.

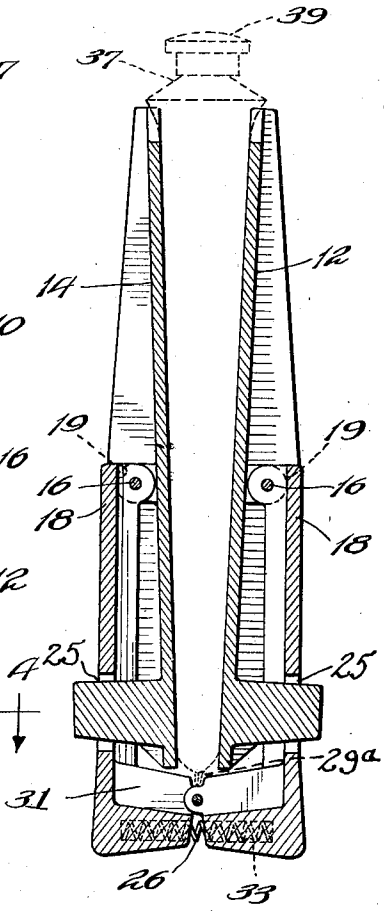


Fig. 4.

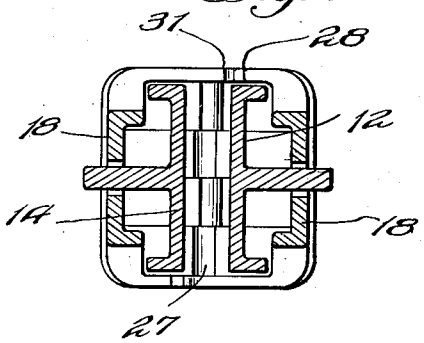
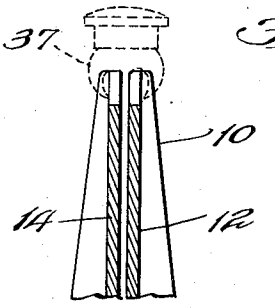


Fig. 5.



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TUBE SQUEEZER

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Application January 20, 1939, Serial No. 251,877

7 Claims. (Cl. 221—60)

The object of my invention is the provision of a tube holder and squeezer primarily adapted for use in association with collapsible tubes. At present, the collapsible tube is widely utilized as a container for tooth pastes and shaving creams, and while this type of container is on the whole admirably adapted for use use, my invention enhances the utility of the same, minimizes sales resistance, creates consumer acceptance, and adds to the economy of the same in the hands of the ultimate user.

As is well known, collapsible tubes are used by persons of all ages and in all walks of life, including children old enough to brush their teeth, and unless patience and care is exercised in discharging the contents of the tube, the tube will perforce assume a crumply, sloppy appearance, distasteful to the average housewife and many users; a blot upon the tidy appearance of the washroom or cabinet. At the same time complete exhaustion of the tube is rendered difficult with a consequent increase in costs for tooth paste and shaving cream.

An object of this invention is the construction of a tube squeezer from molded plastics capable of being produced in any color or combination of colors, which is not only beautiful to the eye, and of necessity enhances the appearance of the washroom or cabinet, but one which is simple and efficient, especially adapted for expressing the entire contents from collapsible tubes, so easy to operate that a child old enough to use tooth paste could insert the tube, and yet capable of being produced at a low cost and adapted for large-scale mass production.

I do not claim to be the first person to invent a tube squeezer for collapsible tubes, but tube squeezers of the prior art of which I have knowledge require that the tube be triangular in form. Actually, no tube is a truly triangular section. If the plane of the sides of the tube were extended and projected, the apex would form a triangle. But the clip on the tube breaks off the triangle at a point between its sides. As will be more fully understood as the details of construction of my invention are delineated, my invention contemplates the use of bellows to encase the tube regardless of the shape thereof, thus permitting the bellows to squeeze the metallic portions of the tube metal to metal, assuring complete exhaustion of the contents.

Further, I have found by experiment that it is not possible to eject the contents of a tube by application of pressure to one end of a hinged construction. Generally, the internal resistance of the contents of the tube to flow causes a deformation in the intermediate portion of the side pressure parts. My invention eliminates this deficiency of the prior art by the production of a squeezer capable of receiving the pressure in the center of the beam, and also at either end, thereby diminishing the flexural element involved.

Prior-art constructions of which I have knowledge provide no clearance for the clip and collar of the tube. The collar, in effect, is an inverted dish and requires tremendous pressure to collapse; if collapsing is obtained, there is the difficulty of piling up the crushed metal stock of the collar, thus preventing complete exhaustion of the material in the tube, and with no allowance for clearance of the clip, the minimum closeness between compressing parts could be not less than the thickness of the clip.

With these and other objects in view, the invention resides in the novel construction, combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claims, and illustrated in the accompanying drawing, in which:

Fig. 1 is a front elevational view of my improved tube squeezer housing a collapsible tube;

Fig. 2 is a side elevation of the same;

Fig. 3 is a cross-sectional view taken on the line 3—3 of Figure 1;

Fig. 4 is a cross-sectional view taken on the line 4—4 of Figure 2, and

Fig. 5 is a fragmentary view similar to Figure 3, disclosing the collar of a tube folded over on itself.

In the drawing the reference character 10 indicates the squeezer generally; 12 and 14 indicate respectively, the side pressure elements or complimentary bellows, respectively hinged at 16, by horizontal hinge pins 19, upon which side members 18 are pivotally mounted adjacent their upper ends, to permit of substantially arcuate transverse movement, annular stops 22, causing horizontally disposed finger tabs 24, carried adjacent the base of members 12 and 14, on the outer surface thereof to movably register with rectangular openings 25, adjacent the base of side members 18. It will be noted that finger tabs or buttons 24 are purely auxiliary, being designed for facile manual manipulation when it is desired to exhaust material in the lower portion of the tube

Side members 18 are hingedly secured adjacent the base thereof by hinge pin 26, disposed be-

tween rectangular blocks **27**, so as to provide channel **28**, which functions as a centering channel for aligning clip **29***a* of tube **29**, flanges **31** preventing transverse movement of the tube. It will be noted that the clip of the tube when housed in channel **28** is below the plane of the compression members as clearly shown in Fig. 3, thus permitting the bellows to squeeze the tube, metal to metal.

Compression springs **33** are provided adjacent the base of my device being two in number in the present preferred embodiment of my invention. It will be noted that the upper portions of the squeezer **10** are substantially arcuated in form, as indicated by reference character **35**, in Figure 1. As shown in Fig. 5 this arcuation permits collar **37** of tube **29** to fold inwardly over the arcuated portion **35**, thus permitting the complete exhaustion of the contents of the tube, and preventing the squeezing elements from acting on the collar of the tube.

In operating my invention it is only necessary to remove the tube from its package, straighten out the clip, spread the bellows open on the squeezer and insert the tube. After cap **39** is removed from the tube, pressure may then be exerted in the center, and from time to time at either end as circumstances may dictate.

From the foregoing it will be obvious that many advantages reside in the structural features of the invention, combination and arrangement of the several parts and in the particular mode of operation, and that modifications may be made in the same without departing from the spirit and scope of the invention, and hence I do not wish to be limited in any particular, but rather what I seek to secure by United States Letters Patent is shown in the appended claims:

1. A tube squeezer for collapsible tubes comprising two wall or jaw members with equalized pressure members mounted on a double-hinged joint, a unitary base hinge, and means for manually compressing said pressure members to eject the contents of the tube.

2. A tube squeezer for collapsible tubes comprising two wall or jaw members with an arcuated upper portion, complimentary hinged pressure members adjacent the medial portion thereof, a unitary base hinge, and means for manually compressing said pressure members to expel the contents of the tube.

3. A tube squeezer for collapsible tubes comprising two walls, each of said walls being mounted on a hinged joint so as to provide equalized pressure means, a unitary hinge connecting the walls adjacent the base thereof, said hinge defining a horizontal channel adapted for the reception and alignment of a clip, the said structure being capable of compressing and ejecting the contents of a collapsible tube.

4. A tube squeezer constructed essentially of moulded plastic or the like comprising two wall or jaw members with a closed movable bottom wall housing compression springs and defining a clip alignment channel, side walls comprising equalized bellows on a double hinged joint, said walls being arcuated at their upper extremity, and capable of manual compression to express the contents of a collapsible tube inserted between said side walls.

5. A container and squeezer for collapsible tubes comprising side walls with closed hingedly secured bottom wall having a central horizontal channel for the reception of a clip, integral flanges to prevent transverse movement of said clip, said side walls having respectively a hinged joint whereby equal pressure may be exerted on a collapsible tube, and means for mounting said hinges to said side walls.

6. A container and squeezer for collapsible tubes or the like comprising two side walls hingedly secured to a bottom wall housing compression members, and having an internal horizontal channel with flanges adjacent the ends thereof, the said walls defining a hollow body portion adapted for the reception and retention of a collapsible tube, hinged means for compressing the side walls to express the contents of the tube.

7. A container and squeezer for collapsible tubes or the like comprising two side walls having an arcuated upper portion with equalized pressure means, a hingedly secured bottom wall, said bottom wall having a channel for alignment of a clip and means to prevent transverse movement of said clip and means for normally urging transverse motion on the part of the side walls.

ARTHUR A. WEISBERGER.