Sept. 27, 1932. H. M. GUSDORF 1,879,208

DISPENSER

Filed May 24, 1930

Fig. 1.

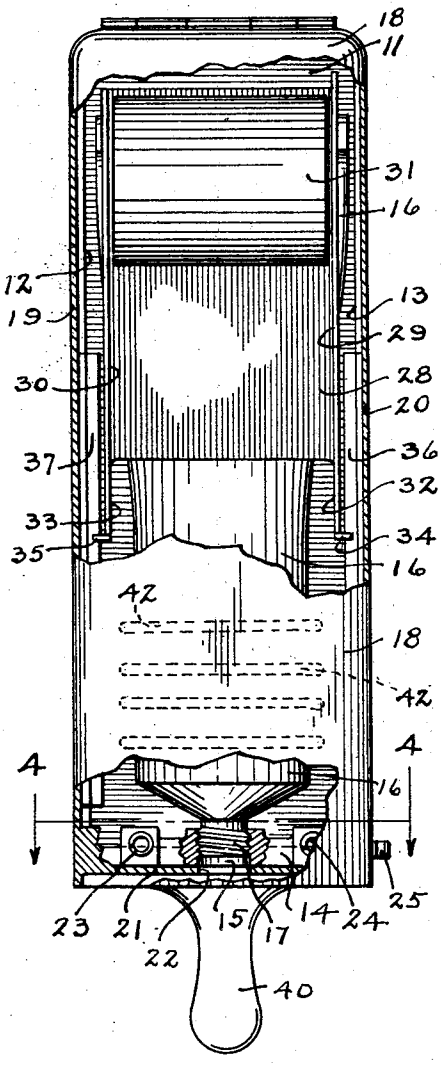


Fig. 2.

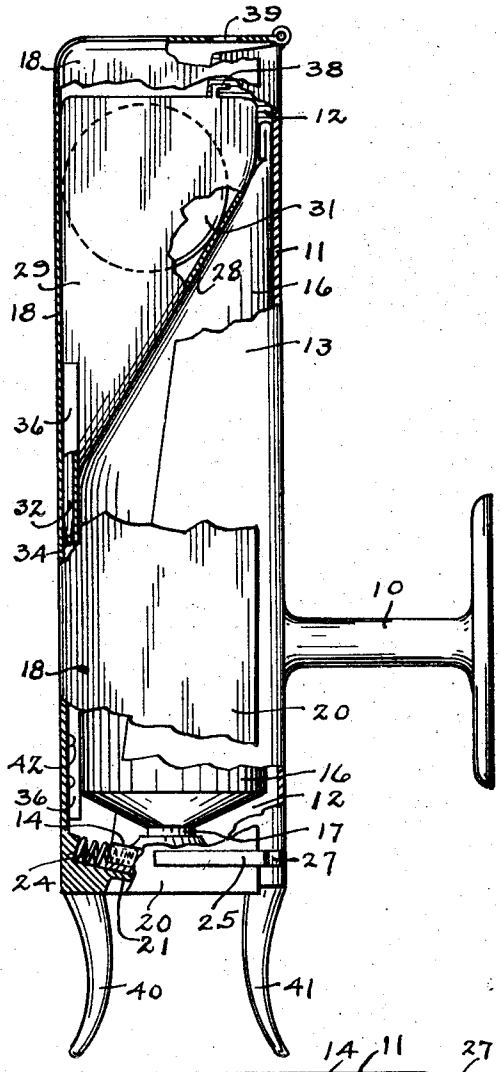


Fig. 3.

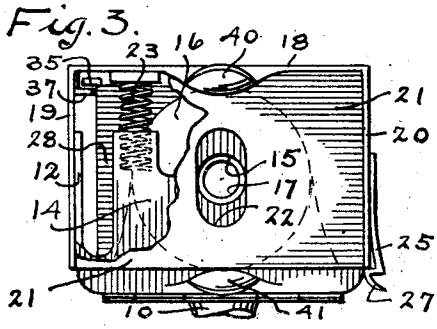
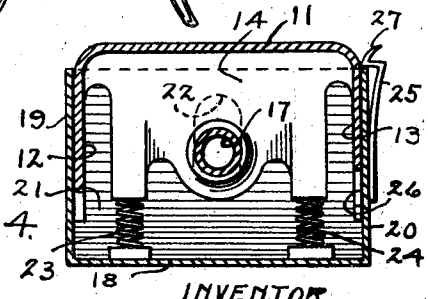


Fig. 4.



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UNITED STATES PATENT OFFICE

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DISPENSER

Application filed May 24, 1930. Serial No. 455,220.

This invention relates to a device for dispensing soap and has for its primary object the provision of means whereby a squeezing action of a member in the device will cause an exudation of soap. The invention is particularly applied to a device for dispensing soap in the paste or cream form and is adapted to employ a soap container that may be readily collapsed.

An important object of the invention resides in the means permitting operation thereof by one hand and that is entirely automatic in its function following a simple compressive action. Important objects also reside in the means for following the length of the soap container as it may be collapsed in pressing soap therefrom and in the means for forcing the soap from the last short length of the container in order to secure substantially all of the soap therefrom.

Other objects reside in the specific formation of the dispensing device permitting its manufacture at an extremely low cost of production and in providing a simple means permitting placing and removing the soap containers in and from the device. These and other objects will become apparent in the following description of the invention with reference being made to the accompanying drawing, in which

Fig. 1 is a fragmentary front elevation of a device embodying my invention;

Fig. 2, a fragmentary side elevation of the device;

Fig. 3, a fragmentary bottom plan view; and

Fig. 4 is a horizontal transverse section on the line 4—4 of Fig. 1.

Like characters of reference indicate like parts throughout the several views in the drawing.

I form a supporting body carried by the bracket 10 to have the rear wall 11 and the forwardly projecting side members 12 and 13, the body being open from its forward side. A shelf 14 is fixed to the lower end of the wall 11 to extend forwardly and a hole 15 is formed therethrough to screw-threadedly receive the nipple 17 on the end of a tube 16. The tube 16 is of the well known type which is collapsible to force soap out through the nipple by pressure on the wall of the tube.

A cover member 18 is hinged to the top end of the wall 11 and is provided with the side aprons 19 and 20 which telescopically receive the side members 12 and 13 therewithin. The cover 18 has a plate 21 projecting inwardly from near its lower end adapted to slide over the under side of the shelf 14, the contacting surfaces being arcuate in order that there may be a close sliding fit therebetween. The plate 21 has an elongated hole 22 therethrough to register over the hole in the shelf 14 as the cover 18 may be swung inwardly to carry the plate 21 thereacross.

At each side of the forward edge of the shelf 14, I mount springs 23 and 24 which extend therefrom to compressively engage the inner side of the cover 18 so as to normally cause the cover 18 to be swung outwardly at an angle to the wall 11 about the hinge at the upper end thereof. On the apron 20, I attach a spring catch 25, the rear end of which normally slides compressively over the side 13 but which may drop into the slot 26 toward the front edge of the side 13 to limit the outward swing of the cover 18. The catch is provided with the outwardly inclined lip 27 which will raise the catch out of the hole 26 upon inward travel of the cover 18.

I form a wedge member to have the inclined tube contacting wall 28 and the sides bent around therefrom 29 and 30 respectively. The width of the walls 29 and 30 is sufficient to carry the wall 28 at its upper end away from the cover 18 toward the wall 11 a distance permitting the thickness of the collapsed tube 16 to pass between the inner edges of these side walls and the wall 11 when the wedge member is positioned within the cover 18 and the cover 18 swung toward the wall 11, as indicated in Fig. 2. It is to be noted that in all of the views in the drawing the cover 18 is shown as being swung inwardly to compress the springs 23 and 24. A roller 31 is preferably of solid metal to give weight and provided to be in rolling contact with the outer side of the inclined wall

28 with the side walls 29 and 30 freely receiving the roller therebetween. Legs 32 and 33 depend respectively from the walls 29 and 30 for a distance to have the outturned lugs 34 and 35 at their lower ends to engage between the retaining flanges 36 and 37 and the inner face of the cover 18. The entire wedge member may rock forwardly and backwardly between the cover 18 and the wall 11 with the lugs 34 and 35 serving as the axis of rotation.

The flanges 36 and 37 terminate at a slight distance above the plate 21 so that the lugs 34 and 35 may slide out from thereunder when the wedge member reaches a low enough position within the space defined between the cover 18 and the wall 11. The side wall 29 is preferably provided with a hook 38 which may freely pass through a slot 39 in the upper end of the cover 18 whereby the entire wedge member may be held at the upper end of the cover 18 when the tube 16 is being positioned on the shelf 14, by pressing the wedge member upwardly against the top and there allowing the hook 38 to engage over the rear edge of the slot 39, the roller 31 being carried on the inclined wall 28 and bearing against the inside of the cover 18 and thereby normally maintaining the hook 38 in engagement in the slot 39, the lugs 34 and 35 preventing the movement of the inclined wall 28 at its lower end away from the cover 18.

To operate the dispenser, the spring catch 25 is released from the hole 26 and the cover 18 swung around and upwardly. A tube 16 of the soap is inverted over the shelf 14 and revolved to cause the nipple 17 to screw-threadedly engage in the hole therein. The wedge member is entered along the cover 18 to have the lugs 34 and 35 pass under the flanges 36 and 37 and is carried therealong to have the hook 38 engage over the edge of the slot 39 as above described, whereupon the cover 18 may then be swung around downwardly and pressed toward the wall 11 to overcome the springs 23 and 24 sufficiently to permit the catch 25 to engage within the hole 26.

The hole 22 in the plate 21 is located so that when the cover 18 is in the outermost position as limited by the catch 25 and yieldingly maintained by the springs 23 and 24, the hole 22 is not in register with the hole in the shelf 14 so that in the outer position, the plate 21 serves as a cover over that hole and it is only upon the moving of the cover 18 inwardly by its lower end that the hole 22 registers over the hole in the shelf 14. Handles 40 and 41 are here shown as depending respectively from the cover 18 and wall 11 which may be gripped by the operator's hand to force the cover 18 inwardly to press the inclined surface 28 against the upper end of the tube 16, this action causing soap to flow out of the nipple 17 through the hole 22 in the plate 21 into the operator's hand or onto a shaving brush or whatever may be held thereunder to receive the soap. The slot 39 is of sufficient length that when the above action takes place, the hook 38 is moved forwardly to be released from over the rear edge of the slot so that when the handle 40 is released, and the cover 18 swung outwardly by the springs 23 and 24, the wedge member may drop downwardly and the hook 38 may then be removed entirely from the slot 39, the downward movement of the wedge member being accomplished by the action of gravity which is permitted by reason of the fact that as the cover 18 swings outwardly additional space is found between the cover 18 and the upper end of the tube 16 since the tube 16 has been compressed in the initial action of the wedge member thereagainst. The angle of the inclined wall 28 to the cover 18 is such that the wedge member will not tend to slide upwardly as it is being pressed against the tube 16.

By repetition of the above described operation, the alternate movement of the cover 18 inwardly and outwardly will effectively press out all of the soap within the tube 16 down to a volume as has its upper limit defined by the angular plane of the tube wall as formed when the lugs 34 and 35 contact the plate 21. Continued pressing in and out of the cover 18, as these lugs are below the lower ends of the flanges 36 and 37, will cause the roller 31 to carry the inclined wall 28 successively toward an upright parallel position with the wall 11, compressively engaging the flattened tube therebetween. Since the lower end of the wedge member is released upon the lugs passing out from under the flanges, the roller 31 by gravity and alternate in and out movement of the cover 18, drops downwardly and effects this travel of the lower end of the wall 28. The legs 32 and 33 are of sufficient length to hold the lower end of the wall 28 up above the conical end of the tube 16 so that the roller may carry the wall 28 thereacross without undue resistance. As a positive means for preventing the roller 31 from slipping upwardly, ribs 42 may be provided in parallel arrangement transversely across the inner side of the cover 18 so that there will be a definite rearward movement of the lower end of the wall 28 upon each inward travel of the cover 18. The width of the walls 29 and 30 at their upper ends prevents the upper end of the inclined wall 28 from moving forwardly toward the cover 18 as the lower end is being moved across under action of the roller 31.

While I have here shown and described my invention in the form as now best known to me, it is obvious that structural changes may be made from that form and I, therefore, do not desire to be limited to that precise form

nor any more than may be required by the following claims.

I claim:

1. In a dispenser employing a collapsible container, a support for said container, a wedge member, a movable member carried by the support adapted to carry said wedge member against the container, and weight means between the movable member and the wedge member normally causing the upper end of the wedge member to contact with said container, said wedge member being initially slidingly engaged toward its lower end by said movable member, said movable member being reciprocatably mounted on said support to permit lateral reciprocation in relation to the container and said weight means being free to drop by gravity between the movable member and the wedge member.

2. In a dispenser employing a collapsible container, a support for said container, a wedge member, a movable member carried by the support adapted to carry said wedge member against the container, weight means between the movable member and the wedge member normally causing the upper end of the wedge member to contact with said container, said wedge member being initially slidingly engaged toward its lower end by said movable member, and a stop member on the wedge member limiting the swing of the upper end thereof away from said container, said movable member being reciprocatably mounted on said support to permit lateral reciprocation in relation to the container and said weight means being free to drop by gravity between the movable member and the wedge member.

3. In a dispenser employing a collapsible container, a support for said container, a wedge member, a movable member carried by the support adapted to carry said wedge member against the container, weight means between the movable member and the wedge member normally causing the upper end of the wedge member to contact with said container, said wedge member being initially slidingly engaged toward its lower end by said movable member, and means for releasing the lower end of said wedge member toward the lower end of said movable member, said weight means moving said lower end upon release toward said container by dropping therebehind upon successive movements of said movable member, said movable member being reciprocatably mounted on said support to permit lateral reciprocation in relation to the container and said weight means being free to drop by gravity between the movable member and the wedge member.

4. In a dispenser employing a collapsible container, a support for said container, a wedge member, a movable member carried by the support adapted to carry said wedge member against the container, weight means between the movable member and the wedge member normally causing the upper end of the wedge member to contact with said container, said wedge member being initially slidingly engaged toward its lower end by said movable member, means for releasing the lower end of said wedge member toward the lower end of the movable member, and spring means normally holding said movable member outwardly from said container, said movable member being reciprocatably mounted on said support to permit lateral reciprocation in relation to the container and said weight means being free to drop by gravity between the movable member and the wedge member.

5. In a dispenser employing a collapsible container, a support for said container, a wedge member, a movable member carried by the support adapted to carry said wedge member against the container, weight means between the movable member and the wedge member normally causing the upper end of the wedge member to contact with said container, said wedge member being initially slidingly engaged toward its lower end by said movable member toward the lower end of the movable member, spring means normally holding said movable member outwardly from said container, said support having an opening through which contents of said tube may discharge, and a valve member normally across said opening.

6. In a dispenser employing a collapsible container, a support for said container, a wedge member, a movable member carried by the support adapted to carry said wedge member against the container, weight means between the movable member and the wedge member normally causing the upper end of the wedge member to contact with said container, said wedge member being initially slidingly engaged toward its lower end by said movable member toward the lower end of the movable member, spring means normally holding said movable member outwardly from said container, said support having an opening through which contents of said tube may discharge, and a valve member normally across said opening, said valve member comprising a plate fixed to said movable member.

7. In a dispenser employing a collapsible container, a container support, a movable wall hinged to the support, a wedge member loosely inserted between said wall and said container having an upwardly inclined surface presented toward the container, said wedge member normally dropping progressively downwardly under the influence of gravity between said wall and container upon successive reciprocations of the wall swinging in to carry the wedge member against the container to compress it against a wall of said support and swinging out to provide

room to allow the wedge member to drop by its own weight down to rest against an uncompressed part of the container.

8. In a dispenser employing a collapsible container, a carrier having a rear wall, a shelf projecting from the wall, a front wall rockably supported from the rear wall, a wedge member loosely carried between the rear and front walls having its greatest width at the top thereof and substantially equal to the distance between the said two walls when the front wall is rocked toward the rear wall, said wedge member normally dropping by gravity toward said shelf and being intercepted in its fall by uncompressed portions of said container, the small end of the wedge member passing between said front wall and the container.

9. In a dispenser, a carrier having a rear wall, a shelf projecting from the wall, a front wall rockably supported from the rear wall, a wedge member between the rear and front walls having its greatest width substantially equal to the distance between said two walls when the front wall is rocked toward the rear wall, said wedge member having forwardly projecting side members, and a roller resting on said wedge member.

10. In a dispenser, a carrier having a rear wall, a shelf projecting from the wall, a front wall rockably supported from the rear wall, a wedge member between the rear and front walls having its greatest width substantially equal to the distance between said two walls when the front wall is rocked toward the rear wall, said wedge member having forwardly projecting side members, and a roller resting on said wedge member, the lower end of said wedge member being slidably retained for an appreciable distance along said front wall.

11. In a dispenser employing a collapsible container, a container carrier, a wall along the container reciprocatably carried by the carrier, a wedge member back of the wall adapted to be pushed against the container upon inward travel of the wall to collapse the walls of the container, said wedge member being free to slide down between the wall against the uncollapsed part of the container upon outward travel of the wall, a weight resting on the upper side of said wedge member adapted upon reciprocation of said wall to work down between said wedge member and said wall to cause the lower end of said wedge member to be shifted laterally toward the container upon the stopping of downward movement of the wedge member.

12. In a dispenser, a carrier having a rear wall, a front wall reciprocatably mounted on the carrier to be movable toward and away from the rear wall, a wedge member having a floor sloping inwardly and upwardly from the front wall toward the rear wall and having lateral legs extending toward the front wall on its upper end substantially equal in length to the distance between said walls when the front wall is moved toward the rear wall, said wedge member being less in height than said walls and being loosely inserted to drop downwardly therebetween by gravity, and a roller resting in the free space on said wedge member between the member and the front wall.

13. In a dispenser, a carrier having a rear wall, a front wall reciprocatably mounted on the carrier to be movable toward and away from the rear wall, a wedge member having a floor sloping inwardly and upwardly from the front wall toward the rear wall and having lateral legs extending toward the front wall on its upper end substantially equal in length to the distance between said walls when the front wall is moved toward the rear wall, said wedge member being less in height than said walls and being loosely inserted to drop downwardly therebetween by gravity, and a roller resting in the free space on said wedge member between the member and the front wall, and means for slidingly retaining the lower end of the wedge member along the front wall, said retaining means terminating above the bottom of the wall to release said wedge member toward the bottom of the wall.

14. In a dispenser, a carrier having a rear wall, a front wall reciprocatably mounted on the carrier to be movable toward and away from the rear wall, a wedge member having a floor sloping inwardly and upwardly from the front wall toward the rear wall and having lateral legs extending toward the front wall on its upper end substantially equal in length to the distance between said walls when the front wall is moved toward the rear wall, said wedge member being less in height than said walls and being loosely inserted to drop downwardly therebetween by gravity, and a roller resting in the free space on said wedge member between the member and the front wall, and means for slidingly retaining the lower end of the wedge member along the front wall, said retaining means terminating above the bottom of the wall to release said wedge member toward the bottom of the wall, transverse ribs on the front wall against which said roller may contact, and releasable means initially holding said wedge member toward the top of the front wall.

In testimony whereof I affix my signature.

HAROLD M. GUSDORF.