Oct. 21, 1941. G. BINON 2,259,992

DISPENSER AND SUPPORT THEREFOR

Filed Nov. 26, 1937

Fig. 1.

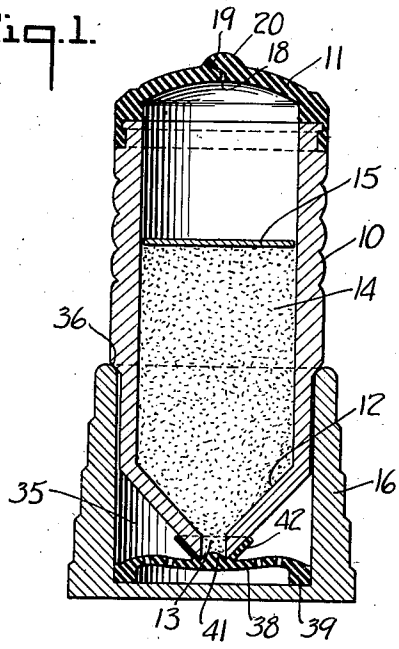


Fig. 2.

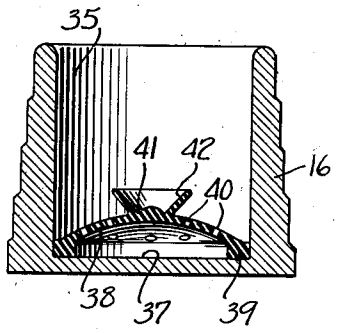


Fig. 4.

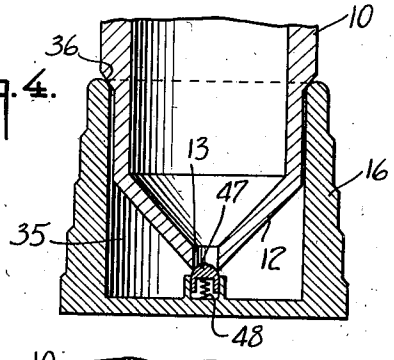


Fig. 3.

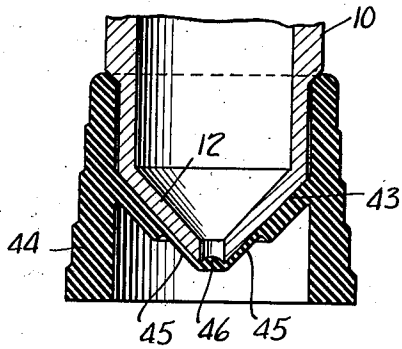
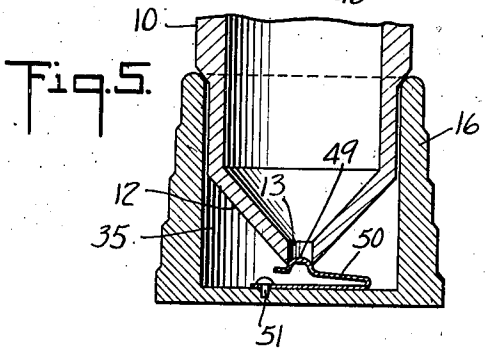


Fig. 5.



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DISPENSER AND SUPPORT THEREFOR

Georges Binon, Paris, France, assignor to The Food Dispenser Company, a corporation of Connecticut

Application November 26, 1937, Serial No. 176,526

14 Claims. (Cl. 221—76)

My present invention relates generally to dispensing devices and has particular reference to certain improvements in a dispensing device of the character illustrated in my Patent No. 2,185,288.

It has among its objects to provide an improved sealing means for such dispensers adapted to be provided in the support in which the dispenser is seated when not in use. A further object of my invention is to provide such improved sealing means adapted to close the opening in the spout of the removable dispenser member in an improved manner, preventing the escape of material from the dispenser into the support, as, for example, when the dispenser is inadvertently operated to dispense its contents and while carried on its support. A still further object of my invention is to provide such improved closure means of an improved resilient type and including resiliently mounted closure means so disposed in spaced relation above the bottom of the support as to provide effective closure without requiring the use of a solid block or cork or rubber, while enabling the use of either improved diaphragms or improved spring mounted closures. These and other objects of my improvements will, however, hereinafter more fully appear.

In the accompanying drawing, I have shown for purposes of illustration certain embodiments which my invention may assume in practice.

In the drawing:

Figure 1 is an elevational cross section through the dispensing device constructed in accordance with my present invention;

Figure 2 is an elevational cross section through the support of Figure 1 shown by itself;

Figure 3 is a view similar to Figure 1 illustrating a modification;

Figure 4 is a view similar to Figure 1 illustrating a second modification; and

Figure 5 is a view similar to Figure 1 llustrating a third modification.

For illustrative purposes I have shown in Figure 1 a container of the character illustrated and described in my copending patent application, this container being adapted primarily for use with a viscous liquid such as mustard, tomato ketchup or the like. A cylindrical container 10, composed of any suitable material, has its upper edge suitably configured to receive a resilient diaphragm 11. The latter is of any suitable material, preferably soft rubber or its equivalent, and arches upwardly by a slight amount. In the diaphragm, preferably at the center, is a relatively small opening 18, formed in the inner portion of a thickening 20 of dome-like character in which a diagonal slit 19 is provided, this slit communicating at its inner end with the opening 18.

The lower portion of the container 10 is downwardly tapered as indicated by the reference numeral 12 whereby a central narrowed outlet spout 13 is formed at the bottom of the container. Within the container is an accommodated mass 14 of viscous liquid such as mustard or ketchup or of any other material whose periodic dispensing is desired; and floating on the surface of this material is a disc 15 of any suitable material inert and unreactive with respect to the material 14.

The container 10 is adapted to be supported in a removable manner on a member 16 adapted to stand upon a table and having a recess 35 adapted to receive and accommodate the lower portion of the container 10. Preferably the container 10 is provided with a peripheral shoulder 36 adapted to rest upon the upper edge of the support 16 to hold the container 10 in position.

When liquid or other material is to be dispensed, the container 10 is bodily removed from the support 16 and pressure is exerted upon the diaphragm 11 whereby an increase of the pressure within the container results in the expulsion of a quantity of the material 14 through the outlet spout 13. After a desired expulsion of material, the container is set back into the support 16. My present invention relates specifically to a means for efficiently and automatically sealing the outlet spout 13 whenever the container is placed back into the support 16.

The preferred form of my invention is illustrated in Figures 1 and 2 in which the floor 37 of the support 16 is substantially flat. Arranged on this floor is a yieldable resilient diaphragm 38 composed of soft rubber or equivalent material. This member has a thickened rim portion 39 which fits snugly into the angle between the bottom wall and the side walls of the support 16. The body portion of the diaphragm 38 normally arches upwardly by a slight degree as shown in Figure 2, and apertures 40 are preferably provided for the purpose of permitting free passage of air through the diaphragm.

Where the outlet spout of the container is centrally arranged, the diaphragm 38 is provided at its center with a rounded member or protrusion 41 which is preferably an integral portion of the diaphragm itself. Surrounding

this portion is an upwardly flaring cup-like portion **42** adapted to conform to the exterior contour of the outlet spout.

The height of the support **16**, and the positioning of the shoulder **36**, are so proportioned with respect to the diaphragm **38** that when the container **10** is placed into the support **16**, as shown in Figure 1, the outlet spout will automatically fit itself snugly into the cup-like portion **42**, and at the same time the protuberance **41** will seat itself, like a valve, into the outlet opening. The container **10** is thus automatically and efficiently sealed as shown in Figure 1.

During this normal sealed relationship of the parts, the diaphragm **38** is slightly deflected into the position of Figure 1 and its inherent resilience presses the portions **41** and **42** upwardly to keep the seal tight. Under these conditions, no manipulation of the diaphragm **11**, whether accidental or deliberate, can result in any undesired premature expulsion of material from the container.

I may mention that the portion **42** is purposefully not made of any substantial length, otherwise the withdrawal of the container from its support would be impeded by a suction effect upon its lower portion.

Preferably the diaphragm member is removably positioned within the recess **35** to facilitate cleaning of the parts when desired.

In Figure 3, I have illustrated a modification in which the floor **43** of the recess in the support **44** is downwardly tapering to conform to the bottom wall **12** of the container **10**. In this construction the lower portion of the floor **43** is formed of the yieldable resilient diaphragm **45** having the rounded protrusion **46**. If desired, the entire support **44** including the diaphragm portion **45** may be made of an integral piece of rubber or its equivalent, but it will be understood that the diaphragm portion may be separately constructed, and subsequently associated with the main portion of the support **44**.

The diaphragm **45** is purposely arranged so that it will normally lie slightly above the position shown in Figure 3, whereby the insertion of the container into the base results in deflecting or stretching the diaphragm into the position of Figure 3, as a result of which the inherent resilience of the diaphragm presses the protrusion **46** upwardly into the outlet opening **13**, and presses the upwardly divergent portions of the diaphragm against the outside of the outlet spout.

In Figure 4 I have illustrated a modified construction in which the rounded sealing member **47** is in the form of a ball or button member urged upwardly by a coiled spring **48** arranged beneath it. In this construction the other portions of the device are the same as in Figure 1, and therefore, the same reference numerals are applied.

In Figure 5, I have illustrated a further modification in which the rounded sealing member **49** is formed on leaf-spring **50** secured as at **51** to the bottom wall of the support **16**. The same reference numerals are applied in Figure 5 as in Figures 1 and 4, to designate the parts which are otherwise the same in these figures.

The general advantages of this type of dispensing device are fully set forth in my Patent No. 2,185,288 and need not be repeated here. It will be observed, however, that the present improvements result in the production of an efficient fool-proof dispensing device whose practical utilization in a wide variety of arts will be readily understood by those skilled in the art.

In general, it will be understood that changes in the details, herein described and illustrated for the purpose of explaining the nature of my invention, may be made by those skilled in the art without departing from the spirit and scope of the invention as expressed in the appended claims. It is, therefore, intended that these details be interpreted as illustrative, and not in a limiting sense.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent, is:

1. In a dispenser of the character described, a container with a restricted outlet spout in the bottom wall, a separate support for the container having a recess adapted to accommodate the lower portion of the container, and yieldable means associated with said support at the bottom of said recess for sealing said spout and having an upwardly projecting member adapted to enter into the opening in the end of said outlet spout, and resilient means supporting said member and urging it into said opening.

2. In a dispenser, the combination set forth in claim 1, said resilient means comprising a spring.

3. In a dispenser of the character described, a container with a narrowed outlet spout in the bottom wall, a support for the container having a recess adapted to accommodate the lower portion of the container, and yieldable means associated with said support at the bottom of said recess for sealing said spout, said means comprising a rubber diaphragm with an upwardly arched portion, and a rounded protruberance on said arched portion adapted to seat itself into the end of said outlet spout.

4. In a dispenser of the character described, a container with a narrowed outlet spout in the bottom wall, a support for the container having a recess adapted to accommodate the lower portion of the container, and a yieldable resilient diaphragm associated with said support at the bottom of said recess for sealing said spout, said diaphragm having a rounded portion adapted to seat itself into the end of said outlet spout, and another portion adapted to enclose said spout.

5. In a dispenser of the character described, a container with a downwardly tapering bottom wall and a narrowed outlet opening at the bottom, a support for the container having a recess adapted to accommodate said bottom wall, and a yieldable resilient diaphragm associated with said support at the bottom of said recess for sealing said opening, said diaphragm having a rounded portion adapted to seat itself into the end of said opening, and an upwardly flaring portion adapted snugly to enclose said bottom wall adjacent to said opening.

6. In a dispenser, the combination set forth in claim 5, said diaphragm being removably mounted within said recess.

7. In a dispenser, the combination set forth in claim 5, the floor of said recess being substantially flat, and said diaphragm being removably mounted on said floor.

8. In a dispenser, the combination set forth in claim 5, the floor of said recess being substantially flat, and said diaphragm being removably mounted on said floor, said diaphragm having an upwardly arched cross-section and being provided with venting apertures.

9. In a dispenser, the combination set forth in claim 5, the floor of said recess being down-

wardly tapering to conform to the bottom wall of the container, and said diaphragm forming the lower portion of said floor.

10. In a dispenser of the character described, a container with a restricted outlet spout in the bottom wall, a support for the container having a recess adapted to accommodate the lower portion of the container, and yieldable means associated with said support and positioned at the bottom of said recess for sealing said spout, said means comprising a rounded member receivable in the end of said outlet spout, and resilient means supporting said rounded member and urging it upwards into said spout.

11. In a dispenser, the combination set forth in claim 10, said resilient means comprising a spring.

12. In a dispenser of the character described, a container with a restricted outlet spout in the bottom wall, a support for the container having a recess adapted to accommodate the lower portion of the container, and yieldable means associated with said support at the bottom of said recess for sealing said spout, said means comprising a rounded member adapted to seat itself into the end of said outlet spout, and resilient means supporting said rounded member and urging it upwards, said resilient means comprising a leaf spring carrying said rounded member as a part thereof.

13. In a dispenser of the character described, a container with a restricted outlet spout in the bottom wall, a support for the container having a recess adapted to accommodate the lower portion of the container, and yieldable means associated with said support at the bottom of said recess for sealing said spout, said means comprising a rounded member adapted to seat itself into the end of said outlet spout, and resilient means supporting said rounded member and urging it upwards, said resilient means comprising a rubber diaphragm.

14. In combination, a container having a lower outlet spout, a container support receiving the spout thereof and including a resilient diaphragm having a depending axial spout receiving and closing socket portion and a peripheral supporting flange extending above and below said last mentioned portion and maintaining the latter spaced from the bottom of said support.

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