April 29, 1930. S. KAUFMAN 1,756,249

NONSPILLABLE CONTAINER

Filed March 21, 1927

Fig. 1.

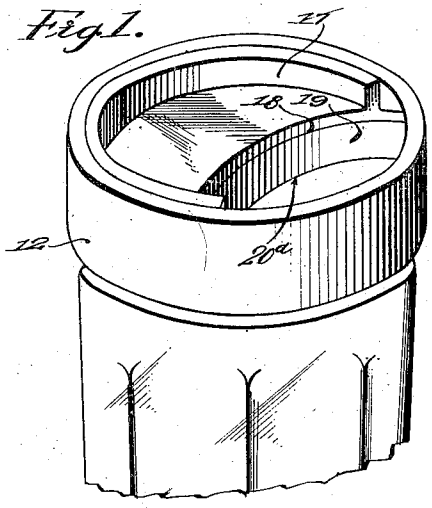


Fig. 2.

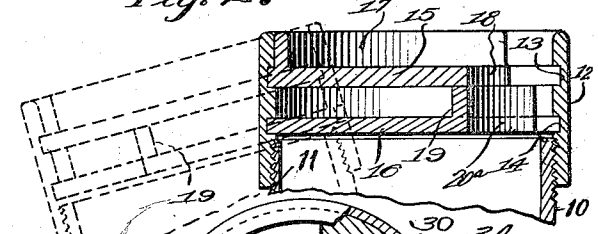


Fig. 4.

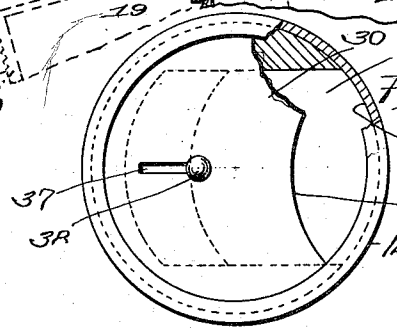


Fig. 5.

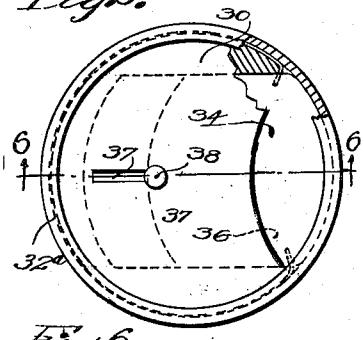


Fig. 6.

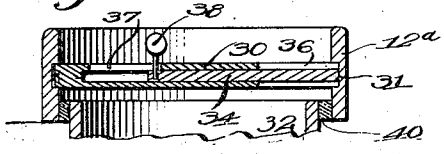
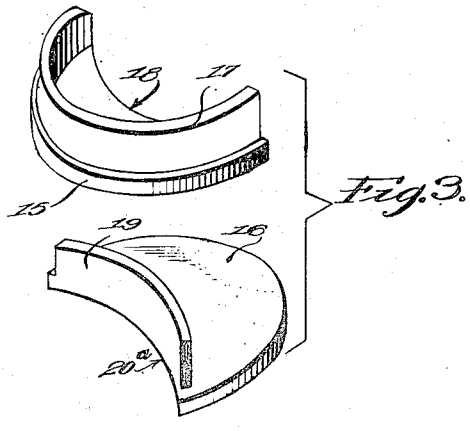


Fig. 3.



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NONSPILLABLE CONTAINER

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This invention relates to a non-spillable container provided with an automatic closure.

An object of the invention is to provision of an attachment for a glass or other container for liquids or other matter which will permit the contents to be poured or placed therein or withdrawn and discharged therefrom while preventing the contents from being spilled during transportation or when the container or glass has been accidentally tilted or thrown upon the side thereof, thus preventing the accidental soiling of clothes or tablecloths, etc.

A further object of the invention is the provision of a container having incorporated therein an automatic closure device to prevent accidental spilling of the contents thereof and in which a movable member or members are employed permitting the removal of the contents of the container but which will be automatically actuated to closing position so that when the container is accidentally shifted from a vertical to a horizontal position the contents will not be discharged therefrom.

A still further object of the invention is the provision of a closure for a container in which a movable member or members are provided and which will be automatically actuated to maintain the container in closed position when tilted at an angle from the vertical and permit the container to be filled and closed, thus preventing the admission of dust and other foreign matter therein.

A still further object of the invention is the provision of a resilient closure attachment for containers adapted to be placed under tension when applied to a container and which will automatically close and seal its contents against the admission of air, thereby preventing evaporation and keeping same in a fresh condition while preventing spilling of said contents when tilted from the vertical; said closure being adapted to be applied to a container in a ready manner and easily removed therefrom without the aid of outside openers such as bottle openers and the like.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawings forming a part of the specification; nevertheless, it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications which shall define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

Figure 1 is a view in perspective of a container showing the preferred form of my invention for preventing spilling of liquid therefrom;

Figure 2 is a vertical section of the container shown in Figure 1;

Figure 3 is a view in perspective of the rotatable members which prevent spilling of the contents;

Figure 4 is a top plan view of a slightly modified form of the automatic closure;

Figure 5 is a plan view of a further modified form of the same, and

Figure 6 is a vertical section taken on the line 6—6 of Figure 5.

Referring to the drawings, and more particularly to Figures 1 to 3, inclusive, 10 designates a container which may be made of glass or any suitable material or combination of materials and has its upper end open and externally threaded, as shown at 11, adapted to engage the internal threads of a sleeve 12 which is constructed on a larger diameter than the diameter of the upper end of the glass so that the sleeve 12 may be threaded neatly upon said glass. The sleeve 12 may be formed of any material suitable for the purpose and may be of the same material as the container 10.

The sleeve is provided with a plurality of guides 13 and 14. A rotatable member 15 is mounted in the guide 13 while a rotatable member 16 is mounted in the guide 14. The member 15 has an arcuately-shaped flange 17 rising above its outer surface and is adapted to be closely associated with the the inner wall of the sleeve 12. The member 15 has the segmental portion removed to provide an opening 18 which is confined to that portion of

the member 15 unaffected by the flange 17. This flange provides sufficient weight for one end of the disc or rotatable member 15 so that it will tend to revolve the said member into the position shown in dotted lines in Fig. 2 when the glass or container is tilted from the vertical.

In practice, however, it has been found that the flange 17 is not absolutely essential to the efficient or automatic operation of the disk or member 15, but, of course, does accelerate such operation when employed in the manner hereinbefore indicated for the same.

The member 16 has an upstanding flange 19 embracing the periphery of a segmental opening 20^a which opening is adapted to be aligned with the opening 18 in the rotatable member 15, the flange being located adjacent the opening 20^a and tending to weight the portion of the disc adjacent said opening so that it will cause the disc to be revolved when the glass is tilted at an angle to the vertical and place the opening diametrically opposite the opening 18 in the member 15 at such time in order to prevent spilling of the contents of the glass or container. It will be noted in Figure 2, dotted lines, that only the bottom member 16 has revolved to prevent spilling of the contents of this container, that is because the center of the flange 17 which acts as a weight in the member 15 already is in the position that it would otherwise automatically assume when the container is tilted at an angle from the vertical.

If the container shown in Figure 2, full lines, should be tilted accidentally or otherwise, to the position exactly opposite to that shown in Figure 2, dotted lines, then the bottom member 16 would remain as shown in full lines and only the top member 15 will revolve to prevent spilling of the contents of the container.

But when a container is tilted in any other direction than described above, then both members 15 and 16 will automatically revolve independently of each other, in order to close each other's openings to prevent spilling of the contents thereof. The flange 19 functions to aid in preventing the liquid from being splashed upwardly through the opening 18 when the glass is tilted. However, when it is desired to remove the contents of the glass as by drinking or pouring, or to fill said glass or container or stir the contents thereof, as for instance, with a spoon, the rotatable member 15 or 16, preferably 15, is revolved manually until the opening 20^a aligns with the opening 18 or the member 15 may be held stationary by the forefinger, for instance, and as the glass is tilted away from the vertical and in any direction, the disc 16 will automatically be revolved by the weight so that the opening 20^a in the member 16 will align with the opening 18 in the member 15. However, the member 15 need not be normally held in open position except when the container is tilted. In order that the periphery of the member 15 may be received within the guide or groove 13 the flange 17 is spaced inwardly of the periphery of said member sufficiently to permit of a portion of the periphery of the member 15 to be received within the guide or groove while providing for neat contacting relation between the flange 17 and the inner face of the sleeve 12.

A modified form of the invention is shown in Figure 4 in which a circular member 30 is rotatably mounted in a groove 31 formed in a removable member 12^a at the upper end of the container or glass 32. The member 30 is hollow, and adapted to receive a sliding member 34 which has a curved edge 35 adapted to be seated within a portion of the groove 31, the edge of the member 30 conforming to the curvature of said groove at that point.

The member 30 is provided with an opening, as shown at 36, whereby the contents of the glass may be poured or withdrawn when the member 34 has been moved away from the opening 36. At other times the member 34 is adapted to be moved across said opening for closing the opening 36 to prevent spilling of the contents of said container.

The member 30 will be heaviest adjacent the opening 36 so that its weight will tend to automatically move the opening in said member downwardly as the glass is tilted or is falling, thus causing the smaller member 34 to slide out to close said opening 36 and prevent spilling of the contents of said container. A washer 40 formed of suitable material is adapted to secure and seal the member 12^a to the container 32.

When it is desired to fill the glass or container the member 34 is moved backward thereby exposing the opening 36. When one desires to drink from said container the member 34 must be held against forward movement, the finger holding the finger piece 38 as the glass is tilted to the lips. The finger piece 38 is secured to the member 34 and adapted to slide in the slot 37 in the member 30. The member 34 can be shifted by the proper movement of the finger piece 38.

In the form of the device shown in Figure 1, the top disc or member 15 must likewise be held against rotation by a finger of the drinker, etc., preferably by holding the top edge of the flange 17.

It is obvious that rubber bands or springs, etc., may be substituted for the weights or portions of the material constituting the body of the container itself, when inherently flexible or spring-like, may be used instead of independent rubber bands or springs. As an instance of such substitution, reference is had to the slightly modified form of closure shown in Figures 5 and 6, wherein the rotatable member 30 shown in Fig. 4 is made fixed to the ring or removable member 12^a, or in one

piece with said ring and need not be weighted adjacent the open side thereof as before. Here, the member 34 is movable and a rubber band 32^a is hidden in the wall of the ring or attached thereto and is adapted to be secured to the movable member 34 at its opposite sides in any suitable manner, so that the member 34 will always be kept in closed position by the rubber band 32^a. When it is desired to open said closure, the member 34 can be shifted backward by proper movement of the finger piece 38 and must be held open, otherwise, the tension of the rubber band will automatically return the movable member 34 to closed position when it is released. If the rubber band is eliminated the movable member 34 may be closed manually and secured to the container by a catch, etc.

Without further description, it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention or its scope as claimed.

I claim:

1. A non-spillable container having an open end, an automatic closure normally closing the open end including a movable member adapted to be actuated and held in open position for the discharge of the contents of the container therefrom or to allow for the placing of contents within the same, and means for causing said movable member to automatically return to closed position when the container is tilted and the member is released, said member thereafter remaining in closed position regardless of the position of the container.

2. A container having an open end, a closure for the open end of said container and including a movable member automatically operating to close the open end when the container is tilted to prevent accidental spilling of the contents of the container.

3. A non-spillable container having an open end, a closure for the said opening including a plurality of movably mounted members disposed adjacent the open end, one of said members having an opening, the other member automatically moving to position to close said opening in the member whenever the container is accidentally tilted or overturned.

4. A non-spillable container having an open end, a closure for the open end of said opening including a plurality of movable members, each of said members being provided with passages adapted to be registered whereby the contents of the container may be discharged therefrom, said members automatically moving to passage closing position to prevent spilling of the contents of the container, whenever the latter is accidentally tilted or overturned.

5. A non-spillable container having one end open, an automatic closure for said opening including a plurality of rotatably mounted members, the container being provided with guides to receive said members, each of said members having openings adapted to be aligned whereby the contents of the container may be discharged therefrom, and means on one of the members adapted to be actuated by gravity when the container is tilted at an angle to the vertical for placing the openings in the members out of alignment to prevent accidental spilling of the contents thereof.

6. A non-spillable container having one end open, an automatic closure for the open end including a plurality of rotatably mounted members, each member having an opening, the said openings being adapted to be aligned whereby the contents of the container may be discharged therefrom and means carried by each member and adapted to be actuated by gravity for causing the openings in the members to be moved out of alignment with each other for preventing accidental spilling of the contents of the container when said container is tilted at an angle to the vertical.

7. A non-spillable container having one end open, an automatic closure for the open end including a plurality of rotatably mounted members, each member having an opening, the said openings being adapted to be aligned whereby the contents of the container may be discharged therefrom, and means carried by each member and adapted to be actuated by gravity for causing the openings in the members to be moved out of alignment with each other for preventing accidental spilling of the contents of the container when said container is tilted at an angle to the vertical, the upper end of the container carrying guides to receive the rotatable members.

8. A non-spillable container having one end open, an automatic closure for the open end and including a plurality of rotatably mounted members, each member having an opening, the said openings being adapted to be aligned whereby the contents of the container may be discharged therefrom, and means carried by each member and adapted to be actuated by gravity for causing the openings in the members to be moved out of alignment with each other for preventing accidental spilling of the contents of the container when said container is tilted at an angle to the vertical, said members being spaced from each other.

9. A non-spillable container having an open end, a closure for the open end of the container including a rotatably mounted member having an opening, a second member movable relative to the first-mentioned member and adapted to close the opening in

the first-mentioned member to prevent spilling of the contents of the container when said container is accidentally tilted from the vertical.

10. An automatic closure for containers, a rim adapted to be applied to the container and including a movable member adapted to be actuated to open position and which will automatically gravitate to closed position when released, said member thereafter remaining in closed position regardless of the position of the container, and means for causing snug fitting of said rim to the container.

11. A non-spillable container having an open end, a closure for said open end, including a member having an opening, and a second member movable so as to expose said opening, whereby the contents may be discharged therefrom or said contents placed therein, the second-mentioned member automatically moving by gravity to close said opening in the first member to prevent accidental spilling of the contents of the container.

12. An automatic closure comprising a ring having guides therein, a plurality of movable members having openings adapted to be aligned with each other, and means carried by one of the movable members adapted to cause said movable members to automatically move to predetermined positions relative to each other, whereby the opening in one member will be moved out of alignment with the opening in the other member.

13. An automatic closure for containers comprising a ring having guides therein, a plurality of movable members having openings adapted to be aligned with each other, means carried by each movable member adapted to cause said movable members to automatically move to predetermined positions relative to each other, whenever a container is accidentally tilted or overturned, whereby the opening in one member will be moved out of alignment with the opening in the other member, said ring being adapted to be applied to a container, and means for causing snug fitting of said ring to the container.

14. A non-spillable container comprising an open body, and a closure for the open end of said body, said closure being formed of relatively movable parts, one of said parts having an opening at one side of the same normally closed by the other of said parts, the latter of said parts being manually movable to a position to expose said opening and to automatically return to closed position when released.

15. A non-spillable container comprising an open body, and a closure for the open end of said body, said closure being formed of relatively movable parts, one of said parts having an opening at one side of the same normally closed by the other of said parts, the other of said parts being carried by the first mentioned of said parts and manually movable to a position to expose said opening and to automatically return to closed position when released.

16. A non-spillable container having an open end, a closure movably mounted at the open end of said container and having a content receiving and discharging opening in the same, a relatively movable closure member automatically operating to close the opening in said first-mentioned closure, said first-mentioned closure automatically adjusting itself to dispose its opening to discharge position whenever the container is tilted.

17. A non-spillable container comprising an open body, a closure for the open end of said body formed of two parts, one of said parts being movable relatively to the other thereof and normally closing an opening at one side of the latter, said first mentioned of the parts being manually movable to a position to expose the said opening, and means for automatically returning said first closure part to normal position when released.

18. A container provided with a gravity closure automatically operating to prevent spilling of the contents of the container.

19. The combination with a container open at its upper end and a closure for the said open end and including a movable member automatically operating by gravity to close the open end to prevent accidental spilling of the contents of the container, said closure having screw threaded connection with the open end of the container.

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