(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 4 327 700 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
28.02.2024 Bulletin 2024/09

(21) Application number: **23186961.1**

(22) Date of filing: **21.07.2023**

(51) International Patent Classification (IPC):
A47G 19/22 *(2006.01)*

(52) Cooperative Patent Classification (CPC):
A47G 19/2272; B65D 51/1611

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(30) Priority: **27.08.2022 US 202217897137**

(71) Applicant: **Dart Industries Inc.**
Orlando,
Florida 32837 (US)

(72) Inventors:
- **Soetomo Salim, Iwan**
  Orlando, 32837 (US)
- **Vanrijckeghem, Tijs**
  Orlando, 32837 (US)
- **Keymeulen, Antoon**
  Orlando, 32837 (US)
- **Wierinck, Michiel**
  Orlando, 32837 (US)

(74) Representative: **Forresters IP LLP**
Skygarden
Erika-Mann-Straße 11
80636 München (DE)

(54) **TUMBLER WITH VENT SHIELD**

(57) A tumbler (10) with vent shield (10, 34). A tumbler body (12) mounts a cover (14) to prevent spilling. The cover (14) includes a spout opening (22) and a vent opening (32). A spout cap (24) selectively closes the spout opening (22), and the spout cap (24) includes a frame (28) mounting a vent shield (10, 34) which overlies the vent opening (32). The upper surface of the cover (14) includes a funnel depression (36) to direct liquid flow toward the vent opening (32).

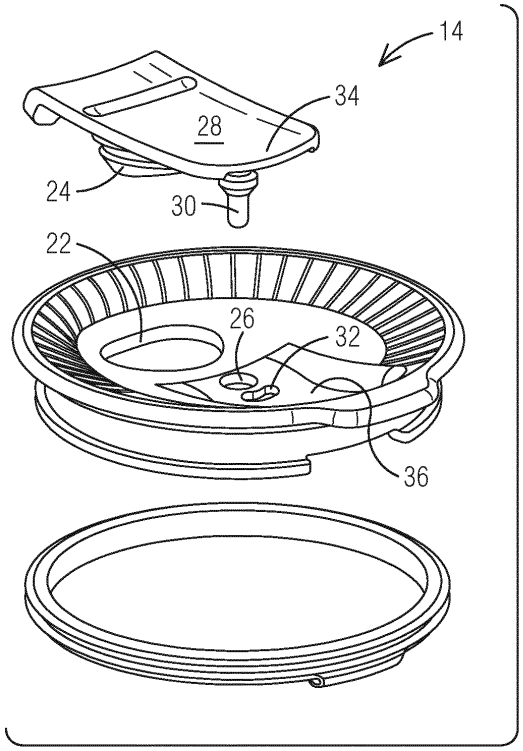

FIG. 5

EP 4 327 700 A2

Description

BACKGROUND OF THE INVENTION

[0001] The present invention relates in general to drinking tumblers for beverages.

[0002] It is common for drinking tumblers for beverages to include a cover to reduce spilling. It is also known for these covers to include a selectively closable spout. To reduce vacuum lock and improve flow from the spout, it is also known for these covers with spouts to also include a separate vent opening spaced from the spout. It has been found, however, that disturbing such a tumbler while closed and filled with hot beverage can result in a spray of hot liquid from the vent opening.

SUMMARY OF THE INVENTION

[0003] An object of the present invention is to provide a tumbler for a beverage which includes a cover having a selective closable spout and vent opening.

[0004] Another object of the present invention is to provide such a tumbler which further includes a vent shield to divert any spray from the vent opening.

[0005] A further object of the present invention is to provide such a tumbler wherein the vent shield is formed as a part of the spout closure.

[0006] These and other objects are achieved by a tumbler with vent shield.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The objects and features of the invention noted above are explained in more detail with reference to the drawings, in which like reference numerals denote like elements, and in which:

FIG. 1 is a top, front perspective view of the tumbler with vent shield according to the present invention in the spout closed configuration;
FIG. 2 is a top, front perspective exploded view of the tumbler;
FIG. 3 is a top view of the cover;
FIG. 4 is a bottom view of the cover;
FIG. 5 is a top, rear perspective exploded view of the cover;
FIG. 6 is a top, rear perspective view of cover;
FIG. 7 is a side cross-sectional view along line 7 -7 of figure 3 in the spout closed configuration; and
FIG. 8 is a side cross-sectional view along line 7 -7 of figure 3 in the spout open configuration.

DETAILED DESCRIPTION OF THE INVENTION

[0008] With reference to FIG. 1, a tumbler with vent shield according to the present invention is generally designated by reference numeral 10. The tumbler with vent shield 10 generally includes a tumbler body 12 and a mating cover 14. The tumbler body 12 include a base 16 and at least one side wall 18 extending upward and terminating in a rim 20. The base 16 and sidewall 18 define a cavity which may hold a liquid. The cover 14 includes an outer periphery sized and shaped to mate with the rim 20 to selectively secure the cover 14 to the tumbler body 12. In the embodiment shown, the base 16 is circular, there is a single side wall 18, the rim 20 is circular, and the cover 14 includes a circular outer periphery.

[0009] As best shown by comparison of Figs. 3-5, the cover 14 includes a spout opening 22 intended to dispense the beverage from the tumbler body 12. While not required, it is preferred that the spout opening be located between the center and the periphery of the cover 14 so that the spout opening is closely adjacent to the rim 20 when cover 14 is located on the tumbler body 12 as shown in Fig. 1. The spout opening 22 may take a variety of configurations such as circular or elliptical, and in the embodiment shown is generally triangular with an apex pointing toward the center of cover 14.

[0010] The cover 14 also includes a spout cap 24 for selectively closing the spout opening 22. In particular, the spout cap 24 may be selectively moved from a closed configuration to an open configuration. This is meant in a general sense: in the closed configuration the spout opening 22 is blocked by the spout cap 24 sufficiently to reduce spilling of the beverage; in the open configuration spout opening is not blocked by spout cap 24 sufficiently to allow dispensing. There are a wide variety of spout caps known, and the present invention may be used with most if not all. The spout cap 24 could be completely removable from the cover 14; the spout cap 24 could be hinged to cover 14 along an axis in the plane of the cover 14 and pivot between configurations; the spout cap 24 could slide on cover 14 between configurations; the spout cap 24 could be rotatable mounted to cover 14 about an axis normal to cover 14 for oscillation or rotation between configurations. This last possibility is shown in the drawings.

[0011] The cover 14 includes a pin opening 26 spaced from the spout opening 22, and the spout cap 24 includes a frame 28 extending beyond the spout opening 22 to overly the pin opening 26. The spout cap 24 further includes a mounting pin 30 extending outward from the frame 28 and sized to be received in the pin opening 26. As may be seen, the mounting pin 30 may thus restrict movement of the spout cap 24 into oscillation or rotation about the axis of mounting pin 30 and thus allow movement between the open and closed configurations.

[0012] While the frame 28 could simply overly the spout opening 22 to define the closed configuration, in the preferred embodiment the spout cap 24 is sized to be closely received within the spout opening 22. More preferably, the spout cap 24, frame 28 and mounting pin 30 are all formed monolithically from an elastic material (such as silicone). In this way the spout cap could deform to elastically seal within the interior of spout opening 22 in the closed configuration as shown in Fig 7. Further, the frame

28 could elastically deform to permit removal of the spout cap 24 from the spout opening 22 prior to oscillation or rotation to the open configuration as shown in Fig. 8. Most preferably, the mounting pin 30 could also include an enlarged section at or near its free end to help retain the mounting pin within the pin opening 26.

[0013] The cover 14 further includes a vent opening 32 spaced from the spout opening 22 in the direction towards the center of cover 14. This spacing in this direction is intended to raise the vent opening above the level of liquid as it is being dispensed by tipping of the tumbler body 12. In the preferred embodiment shown, the spout opening 22, pin opening 26 and vent opening 32 spaced along a straight line, with the pin opening 26 being interposed between the other two openings. It is also possible for the pin opening 26 to be located at the center point of the cover 14, as shown.

[0014] The main object of the present invention is to shield the vent opening 32. To this end, a vent shield 34 extends outward from the frame 28 so as to overly the vent opening 32 when the spout cap is in the closed configuration. Vent shield 34 takes the form of a cantilevered element, and may be spaced slightly from the vent opening 32. As may be envisioned, any spray exiting the vent opening 32 would impinge upon the vent shield 34 and be blocked from further outward travel. The liquid portion of the spray would either be redirected to the upper surface of the cover 14, not toward the user. While not required, it is preferred to have the vent shield 34 spaced from the vent opening 32. This spacing would allow the spray to exit safely, and thus reduce any pressure within the tumbler 10, eliminating any problems when the user manually opens the spout cap 24.

[0015] As a further feature, it is preferred that the upper surface of the cover 14 include a funnel depression 36 centered upon the vent opening 32. As noted, the liquid portion of any spray will be redirected toward the upper surface of the cover 14. The funnel depression 36 will direct any such liquid to flow by gravity to the vent opening 32 to thus reenter the tumbler body 12.

[0016] From the foregoing it will be seen that this invention is one well adapted to attain all ends and objects set forth above together with the other advantages which are inherent within its structure.

[0017] It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

[0018] Since many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth of shown in the accompanying drawings is to be interpreted as illustrative, and not in a limiting sense.

Claims

1. A tumbler (10) with vent shield, comprising:

a tumbler body (12) having a base (16) and at least one side wall (18) extending upwardly from a periphery of said base to a rim (20);
a cover (14) having a periphery sized and shaped to selectively engage said rim, said cover including a spout opening (22) adjacent said cover periphery, and a vent opening (32) spaced from said spout opening;
a spout cap (24) selectively movable from a closed configuration blocking said spout opening, and an open configuration allowing dispensing from said spout opening, said spout cap including a frame (28) extending therefrom; and
a vent shield (34) extending from said frame, said vent shield being sized and positioned on said frame so as to overly said vent opening when said spout cap is in said closed configuration.

2. A tumbler (10) with vent shield as in claim 1, wherein said vent shield (34) overlies and is spaced from said vent opening (32).

3. A tumbler (10) with vent shield as in claim 1 or claim 2, wherein in said cover (14) further includes a pin opening (26) located intermediate said spout opening (22) and said vent opening (32), and said spout cap (24) further includes a mounting pin (30) extending from said frame (28), said mounting pin being received within said pin opening such that said spout cap oscillates about the axis of said mounting pin between said open configuration and said closed configuration.

4. A tumbler (10) with vent shield as in any preceding claim, wherein an upper surface of said cover (14) includes a funnel depression (36) centered on said vent opening (32) for directing liquid flow into said vent opening.

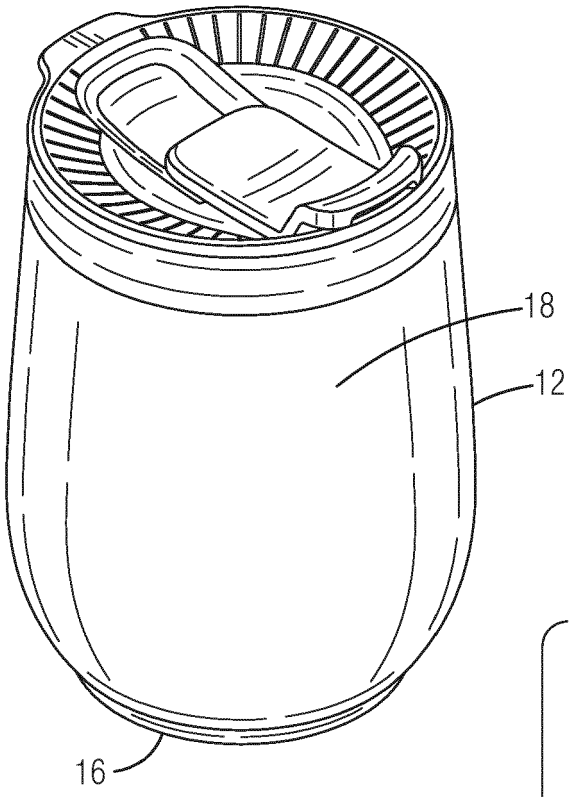

FIG. 1

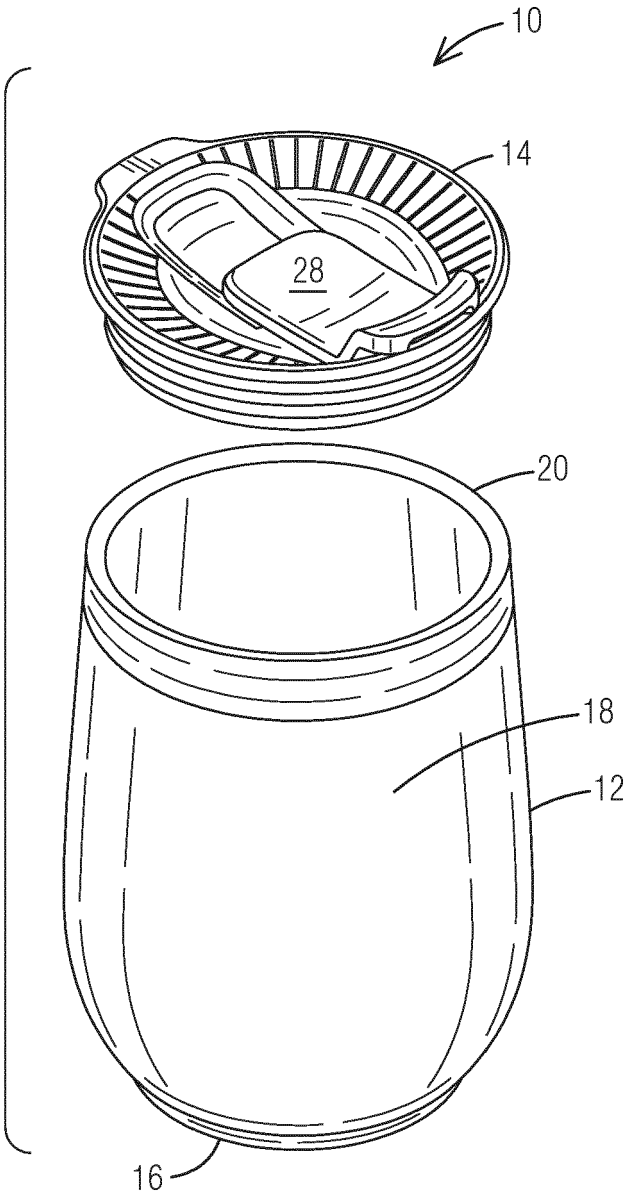

FIG. 2

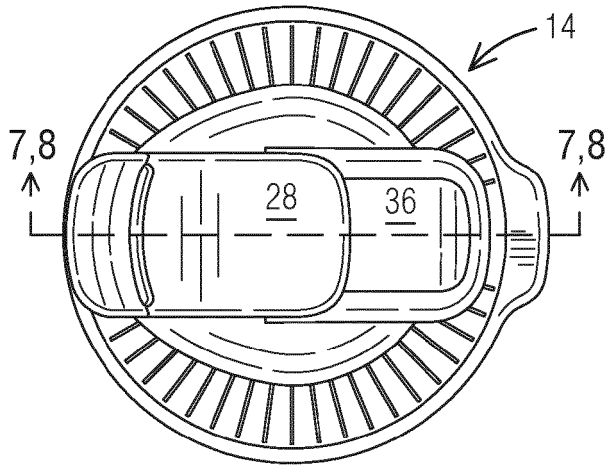

FIG. 3

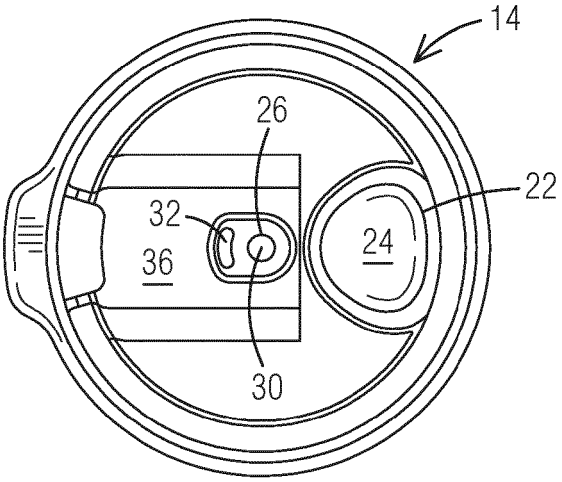

FIG. 4

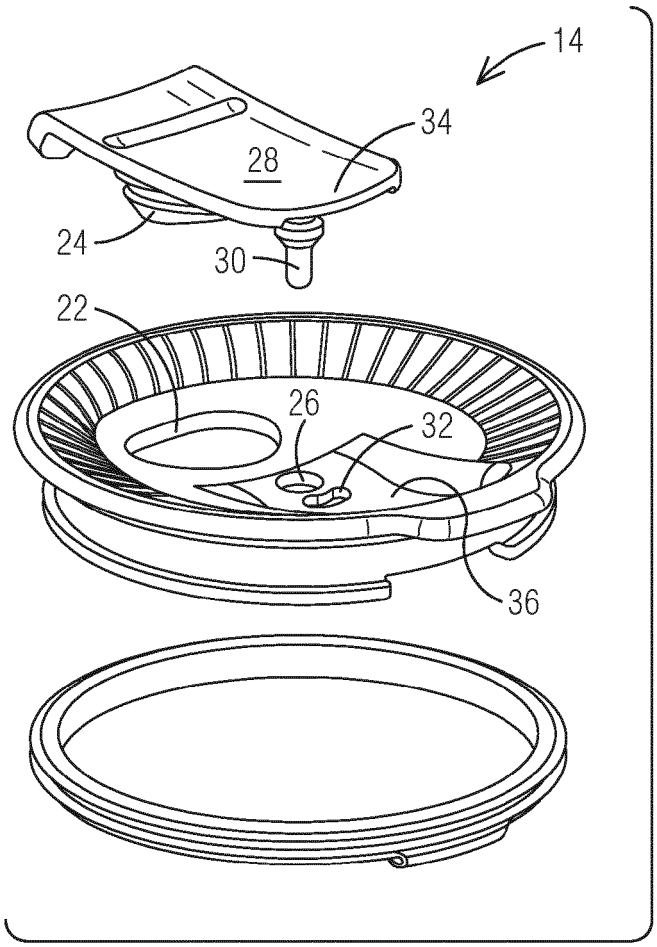

FIG. 5

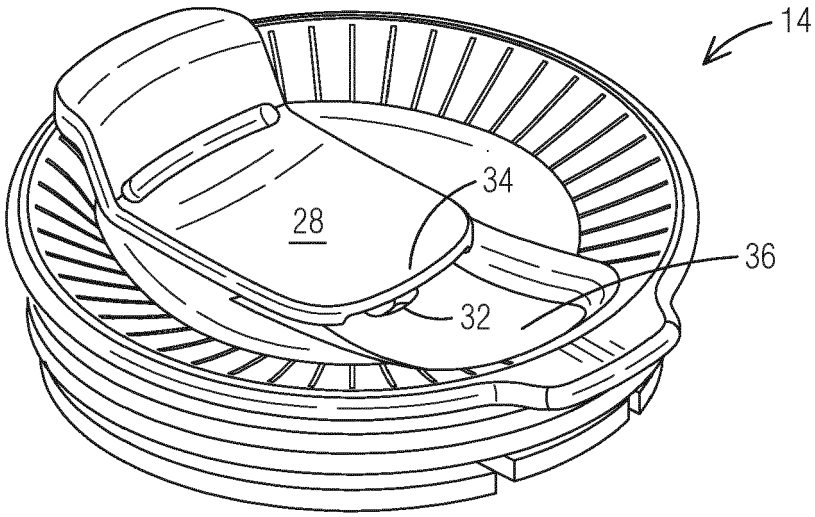

FIG. 6

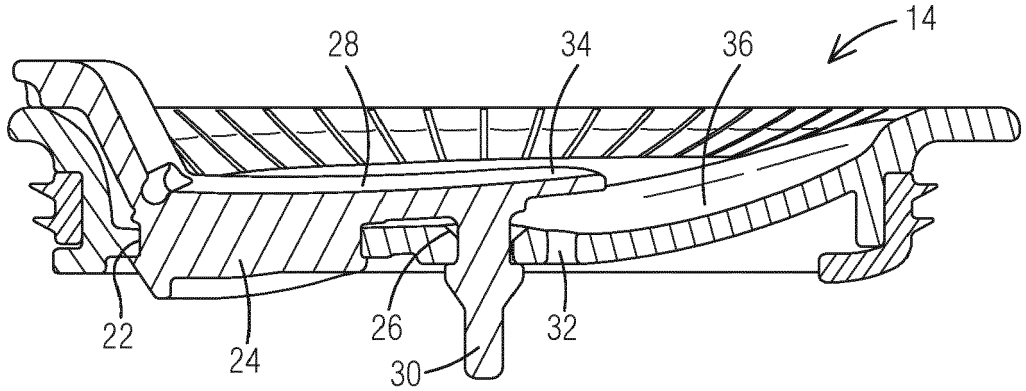

FIG. 7

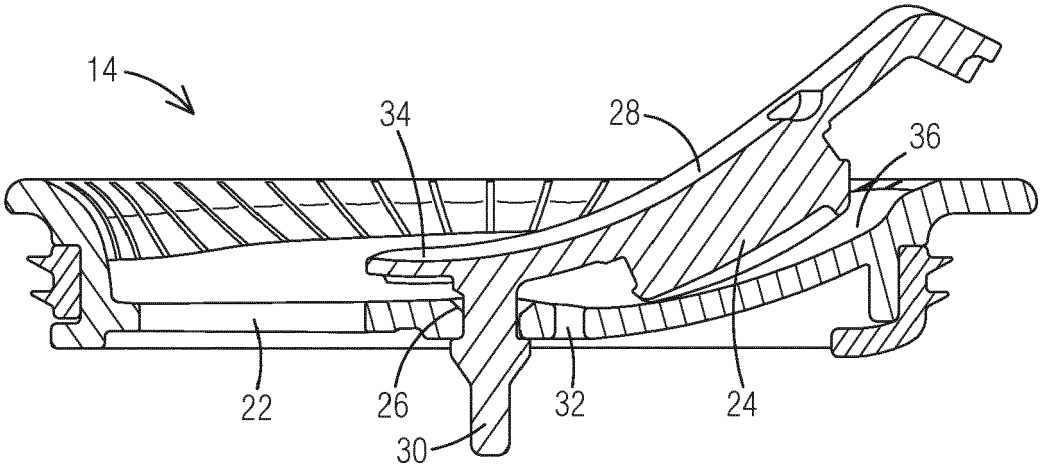

FIG. 8