

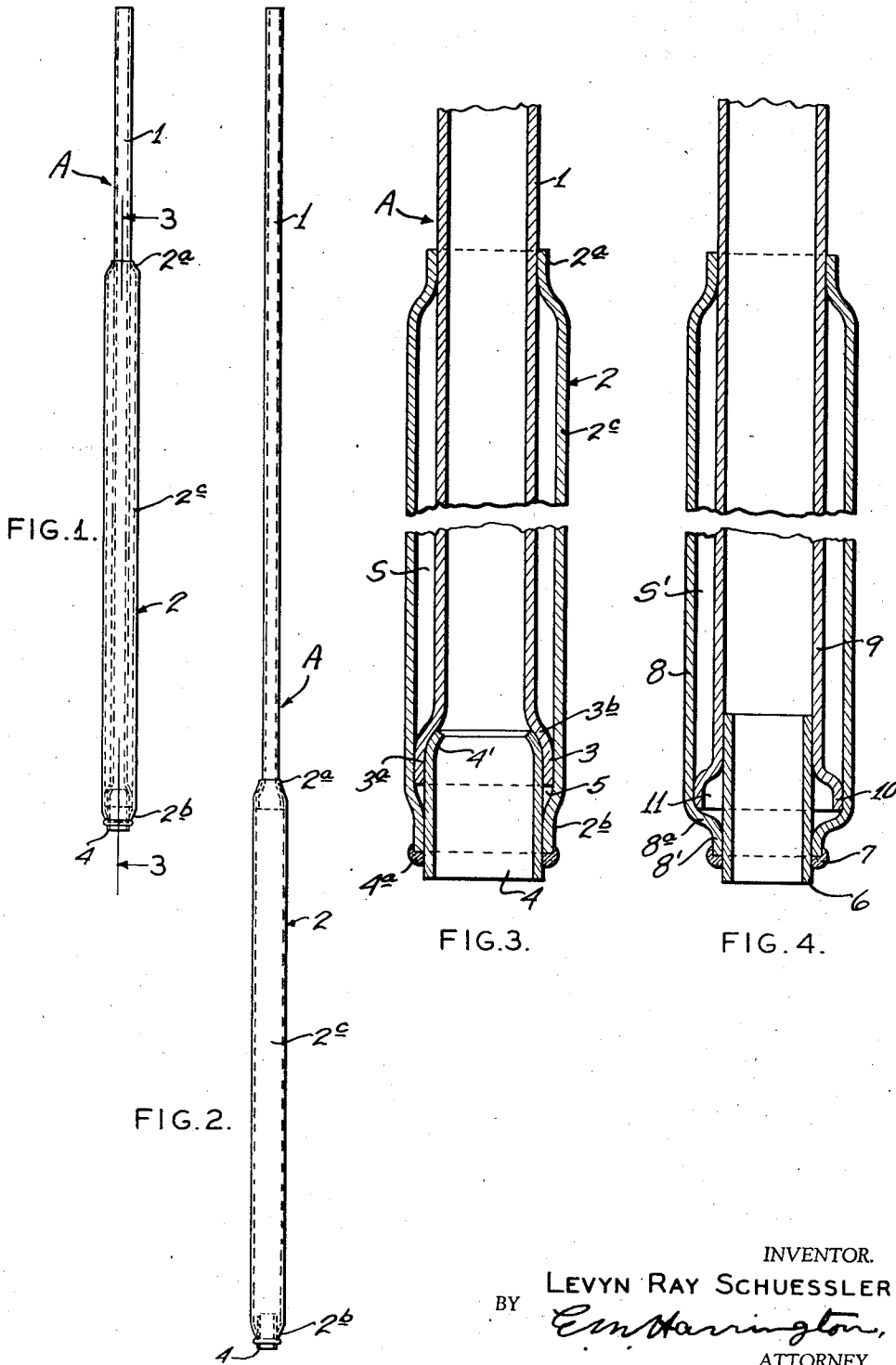
July 7, 1942.

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2,288,848

SIPPER

Filed Nov. 4, 1940



UNITED STATES PATENT OFFICE

2,288,848

SIPPER

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Application November 4, 1940, Serial No. 364,184

7 Claims. (Cl. 299—17)

This invention relates generally to sippers of the type employed to drink beverages and other liquids from bottles and other receptacles, and more specifically to sippers of this type which are adapted to be sealed in the bottles or other receptacles with which they are employed, the predominant object of the invention being to provide an improved sipper which includes a jacket portion that is so constructed and arranged as to provide the sipper with a space in which air is confined to give buoyancy to the sipper and which jacket portion is movable longitudinally of the axis of the sipper to extend the length of the sipper.

An important requirement in connection with sippers of the type described briefly above is that the liquid contents of the receptacle in which such a sipper is sealed be excluded as much as possible from the air space within the jacket portion of the sipper, this being so because the presence of liquid within said air space reduces the buoyancy of the sipper and this interferes with the proper projection of the upper portion of the sipper beyond the mouth of the receptacle when the cap, or other sealing element of the receptacle, is removed from the receptacle. The feature of the present invention, which differentiates it from the prior art, resides in the improved and unique construction and arrangement of the lower portion of the sipper which greatly minimizes the likelihood that any portion of the liquid within the receptacle in which the sipper is sealed, will find its way into the air space within the jacket portion of the sipper whereby a sipper is provided which is capable at all times of performing its intended functions in a highly efficient manner.

Fig. 1 is an elevation of the improved sipper showing same in the retracted condition in which it is sealed in a receptacle.

Fig. 2 is an elevation of the improved sipper showing same in its extended condition when the jacket portion of the sipper has been moved outwardly to increase the length of the sipper.

Fig. 3 is an enlarged fragmentary, vertical section of the sipper taken on line 3—3 of Fig. 1.

Fig. 4 is a view similar to Fig. 3 of a modified form of the invention.

In the drawing, wherein are shown for the purpose of illustration, merely, two embodiments of the invention, A designates in Figs. 1 to 3, inclusive, the improved sipper generally, said sipper A including a main sipper portion 1 and a jacket portion 2. The main sipper portion 1 comprises a simple tubular element that is open

from end to end and which is formed from thermo-plastic material or any other suitable material which will not be affected by the liquid contents of a receptacle in which it is sealed, and also that will not affect said liquid.

The jacket portion 2 of the improved sipper A comprises an element made from the same material from which the main sipper portion 1 is produced, or a different material having the required characteristics. The jacket portion 2 is of tubular formation and may be provided with cuff portions 2a and 2b of reduced diameter at its opposite ends, and the elongated part 2c of said jacket portion between said cuff portions is of substantially greater diameter than the main sipper portion 1 to provide an annular space S within said part 2c between the outer face of the main sipper portion 1 and the inner face of the wall of the part 2c of the jacket portion. The inner face of the cuff portion 2a, at the upper end of the jacket portion 2, contacts closely with the outer surface of the main sipper portion 1 as shown to the best advantage in Fig. 3, and as is also shown in Fig. 3, the main sipper portion 1 is provided at the lower end with a flared portion 3 whose outside diameter is approximately the same as the inside diameter of the part 2c of the jacket portion 2. The flared portion 3 at the lower end of the main sipper portion 1 comprises a substantially straight portion 3a, the outer surface of which contacts closely with the inner face of the wall of the jacket part 2c and a curved portion 3b which joins said substantially straight portion 3a to the main body of the main sipper portion 1.

Associated with the lower portion of the jacket portion 2 of the sipper A is a tubular sipper portion 4 which is embraced by said lower part of the jacket portion 2, the inner face of the cuff portion 2b of said jacket portion contacting closely with the outer surface of said sipper portion 4. The sipper portion 4 is fixedly associated with the jacket portion 2 of the sipper by a suitable joint 4a, said joint being produced by heating the thermo-plastic material of which the jacket portion 2 and the sipper portion 4 are formed to produce a welded joint between said parts, or, if desired, a suitable joint-producing material may be applied to the jacket portion 2 and the sipper portion 4 at the lower edge of the cuff portion 2b to produce the desired joint between those parts of the sipper. The sipper portion 4 at its lower end extends outwardly of the cuff portion 2b of the jacket portion of the sipper a slight distance, and the

remainder of said sipper portion 4 extends inwardly of said jacket portion. The upper end of the sipper portion 4 is provided with an inwardly curved portion 4' which has a curvature that corresponds to the curvature of a part of the curved portion 3b of the flared portion 3 of the main sipper portion 1. When the sipper A is retracted, as shown in Figs. 1 and 3 a part of the outer face of the sipper portion 4 contacts with the inner face of the portion 3a of the flared portion 3 of the main sipper portion 1, and the outer face of the inwardly curved portion 4' of said sipper portion 4 contacts closely with a part of the curved portion 3b of said flared portion 3.

Attention is directed particularly to the fact that when the sipper A is in its retracted condition as shown in Figs. 1 and 3, where the inner surface of the flared portion 3 of the main sipper portion 1 and a portion of the outer surface of the sipper portion 4 are in contact with each other, an annular space 5 is provided which is defined by the outer face of the sipper portion 4, the inner face of the portion which joins the cuff 2b to the jacket portion 2, and the lower edge of the flared portion 3 of the main sipper portion 1. This space serves as a liquid trap and functions in a manner to be hereinafter set forth.

In the use of the improved sipper disclosed herein the sipper is sealed in a receptacle with which the sipper is associated, the top of the sipper being forced against the cap or other closure element which seals the mouth of the receptacle by the buoyancy provided by the body of air trapped in the space S. Because of this situation removal of the cap or other closure element of the receptacle will permit the upper portion of the sipper to be buoyantly projected upwardly beyond the mouth of the receptacle. When the upper portion of the sipper has been projected above the mouth of the receptacle, the user may withdraw the sipper from the receptacle and slide the jacket portion 2 thereof longitudinally of the main sipper portion to increase the effective length of the sipper as desired. In this connection it is to be noted that the jacket portion 2 of the sipper A may not be accidentally detached from the main sipper portion 1 by excessive relative movement of the jacket portion and the main sipper portion, this being so because the outer surface of the shoulder of the flared portion 3 of the main sipper portion and the inner surface of the portion which joins the cuff portion 2a to the main body of the jacket portion 2 will contact with each other to limit relative movement of said main sipper portion and said jacket portion (see Fig. 2).

When the sipper illustrated in Figs. 1, 2, and 3, is sealed within a receptacle, the upper end of the jacket portion, because of its length, will preferably be disposed above the surface of the liquid within the receptacle, and of course, the portion of the sipper below the upper end of the jacket portion will be submerged in the liquid of the receptacle with the lower end of the sipper located at a point adjacent to the bottom wall of the receptacle.

In order for liquid in which the sipper is submerged to pass from the interior of the main sipper portion 1 into the space S within the jacket portion 2, it must force its way between the contacting surfaces of the sipper portion 4 and the portion 3a of the main sip-

per portion 1, pass through the annular space 5, and force its way between the contacting surfaces of the portion 3a of the main sipper portion 1 and the wall of the jacket portion 2. Because of this fact the likelihood that any substantial amount of liquid will find its way into the space S of the jacket portion 2 is very greatly minimized.

From the foregoing it is plain that the air space S of the sipper A will be maintained substantially free from liquid when it is sealed in a receptacle, whereby the sipper will be possessed of the maximum buoyancy and as a result will perform its intended functions in a highly efficient manner.

In Fig. 4 a modified form of the invention is illustrated which includes a sipper portion 6 which is secured by a suitable joint 7 to the cuff portion 8' of a jacket portion 8. In accordance with this construction the main sipper portion 9 is provided with a flared lower portion 10 which is so shaped as to provide a space 11 between the inner surface of the flared portion and the outer surface of the sipper portion 6, this space being closed at its lower portion by the portion 8a of the jacket portion. When the sipper illustrated in Fig. 4 is in a retracted condition, as shown in that view, the sipper portion 6 extends upwardly into the main body of the main sipper portion.

The sipper illustrated in Fig. 4 functions in use just as does the sipper shown in Figs. 1, 2, and 3, that is to say, in order for liquid to pass from the interior of the main sipper portion 9 into the space S', it must force its way between contacting surfaces of the sipper portion 6 and the main sipper portion 9, pass through the space 11, and force its way between the contacting surfaces of the portion 10 of the main sipper portion 9 and the wall of the jacket portion 8.

I claim:

1. A sipper comprising a main sipper portion in the form of a tubular element open from end to end, a jacket portion supported by and surrounding said main sipper portion, said jacket portion being of a diameter sufficiently greater than that of the main sipper portion to provide a space within said jacket portion between a wall thereof and the wall of said main sipper portion in which air is confined, and a tubular member attached to said jacket portion and extended into said jacket portion so that a portion of the wall of said tubular member is spaced inwardly from a portion of the wall of said jacket portion, a portion of said main sipper portion being disposed in the space between the spaced portions of the wall of said tubular member and the wall of said jacket portion so that a part of the outer surface of the wall of said main sipper portion contacts with a part of the inner face of the wall of said jacket portion and a part of the inner face of the wall of said main sipper portion contacts with a part of the outer surface of the wall of said tubular member.

2. A sipper comprising a main sipper portion in the form of a tubular element open from end to end, a jacket portion supported by and surrounding said main sipper portion, said jacket portion being of a diameter sufficiently greater than that of the main sipper portion to provide a space within said jacket portion between a wall thereof and the wall of said main sipper portion in which air is confined, and a tubular member attached to said jacket portion and extended into said jacket portion so that a portion of the

wall of said tubular member is spaced inwardly from a portion of the wall of said jacket portion, a portion of said main sipper portion being disposed in the space between the spaced portions of the wall of said tubular member and the wall of said jacket portion so that a part of the outer surface of the wall of said main sipper portion contacts with a part of the inner face of the wall of said jacket portion and a part of the inner face of the wall of said main sipper portion contacts with a part of the outer surface of the wall of said tubular member, said jacket portion being slidable longitudinally of said main sipper portion to increase the length of the sipper.

3. A sipper comprising a main sipper portion in the form of a tubular element open from end to end, a jacket portion supported by and surrounding said main sipper portion, said jacket portion being of a diameter sufficiently greater than that of the main sipper portion to provide a space within said jacket portion between a wall thereof and the wall of said main sipper portion in which air is confined, and a tubular member attached to said jacket portion and extended into said jacket portion so that a portion of the wall of said tubular member is spaced inwardly from a portion of the wall of said jacket portion, a portion of said main sipper portion being disposed in the space between the spaced portions of the wall of said tubular member and the wall of said jacket portion so that a part of the outer surface of the wall of said main sipper portion contacts with a part of the inner face of the wall of said jacket portion and a part of the inner face of the wall of said main sipper portion contacts with a part of the outer surface of the wall of said tubular member, said jacket portion being slidable longitudinally of said main sipper portion to increase the length of the sipper, and said jacket portion and said main sipper portion being provided with portions which are adapted to contact each other on outward sliding movement of said jacket portion relative to said main sipper portion to limit relative movement of said jacket portion and said main sipper portion.

4. A sipper comprising a main sipper portion in the form of a tubular element open from end to end, a jacket portion supported by and surrounding said main sipper portion, said jacket portion being of a diameter sufficiently greater than that of the main sipper portion to provide a space within said jacket portion between a wall thereof and the wall of said main sipper portion in which air is confined, and a tubular member attached to said jacket portion and extended into said jacket portion so that a portion of the wall of said tubular member is spaced inwardly from a portion of the wall of said jacket portion, a portion of said main sipper portion being disposed in the space between the spaced portions of the wall of said tubular member and the wall of said jacket portion so that a part of the outer surface of the wall of said main sipper portion contacts with a part of the inner face of the wall of said jacket portion and a part of the inner face of the wall of said main sipper portion contacts with a part of the outer surface of the wall of said tubular member, said jacket portion being slidable longitudinally of said main sipper portion to increase the length of the sipper and said jacket portion and said main sipper portion being provided with portions of reduced and increased diameters, respectively, which are adapted

ed to contact each other on outward sliding movement of said jacket portion relative to said main sipper portion to limit relative movement of said jacket portion and said main sipper portion.

5. A sipper comprising a main sipper portion in the form of a tubular element open from end to end, a jacket portion supported by and surrounding said main sipper portion said jacket portion being of a diameter sufficiently greater than that of the main sipper portion to provide a space within said jacket portion between a wall thereof and the wall of said main sipper portion in which air is confined, and a tubular member attached to said jacket portion and extended into said jacket portion so that a portion of the wall of said tubular member is spaced inwardly from a portion of the wall of said jacket portion, said main sipper portion being provided with a lower end portion of increased diameter which is disposed in the space between the spaced portions of the wall of said tubular member and the wall of said jacket portion so that a part of the outer surface of the wall of said end portion of increased diameter of the main sipper portion contacts with a part of the inner surface of the wall of said jacket portion and a part of the inner face of said end portion of increased diameter of said main sipper portion contacts with a part of the outer surface of the wall of said tubular member, said jacket portion being slidable longitudinally of said main sipper portion to increase the length of the sipper.

6. A sipper comprising a main sipper portion in the form of a tubular element open from end to end, a jacket portion supported by and surrounding said main sipper portion, said jacket portion being of a diameter sufficiently greater than that of the main sipper portion to provide a space within said jacket portion between a wall thereof and the wall of said main sipper portion in which air is confined, and a tubular member attached to said jacket portion and extended into said jacket portion so that a portion of the wall of said tubular member is spaced inwardly from a portion of the wall of said jacket portion, said main sipper portion being provided with a lower end portion of increased diameter which is disposed in the space between the spaced portions of the wall of said tubular member and the wall of said jacket portion so that a part of the outer surface of the wall of said end portion of increased diameter of the main sipper portion contacts with a part of the inner surface of the wall of said jacket portion and a part of the inner face of said end portion of increased diameter of said main sipper portion contacts with a part of the outer surface of the wall of said tubular member, and so that an annular cavity is provided by related portions of said jacket portion, said main sipper portion, and said tubular member, said jacket portion being slidable longitudinally of said main sipper portion to increase the length of the sipper.

7. A sipper comprising a main sipper portion in the form of a tubular element open from end to end, a jacket portion supported by and surrounding said main sipper portion, said jacket portion being of a diameter sufficiently greater than that of the main sipper portion to provide a space within said jacket portion between a wall thereof and the wall of said main sipper portion in which air is confined, and a tubular member attached to said jacket portion and extended into said jacket portion so that a por-

tion of the wall of said tubular member is spaced inwardly from a portion of the wall of said jacket portion, said main sipper portion being provided with a lower end portion of increased diameter which is disposed in the space between the spaced portions of the wall of said tubular member and the wall of said jacket portion so that a part of the outer surface of the wall of said end portion of increased diameter of the main sipper portion contacts with a part of the inner surface of the wall of said jacket portion and a part of the inner face of said end portion of increased diameter of said main sipper portion contacts with

a part of the outer surface of the wall of said tubular member, said jacket portion being slidable longitudinally of said main sipper portion to increase the length of the sipper, said jacket portion being provided with a part of reduced diameter at its upper end which contacts with the end portion of increased diameter of the main sipper portion when the jacket portion is moved longitudinally of the main sipper portion to limit sliding movement of the jacket portion with respect to the main sipper portion.

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