July 8, 1941. F. C. HAMILTON 2,248,231

SIPPER

Filed Oct. 12, 1940

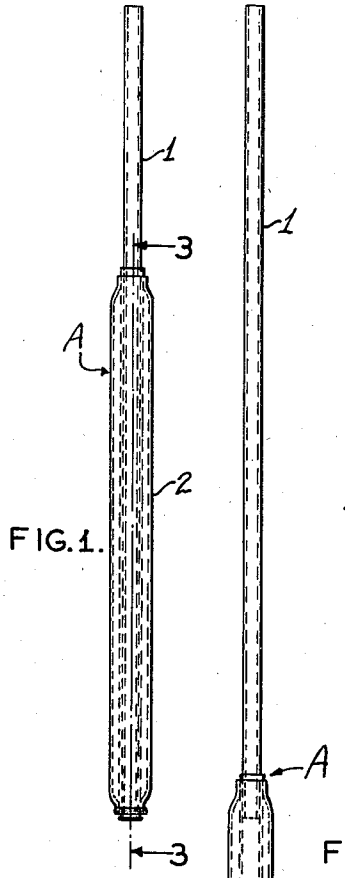


FIG. 1.

FIG. 2.

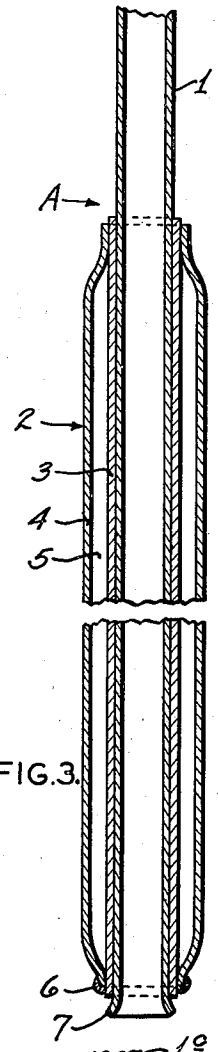


FIG. 3.

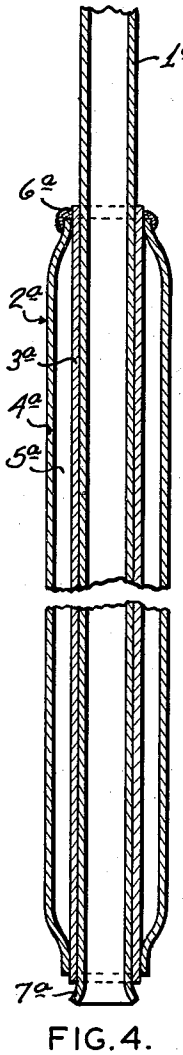


FIG. 4.

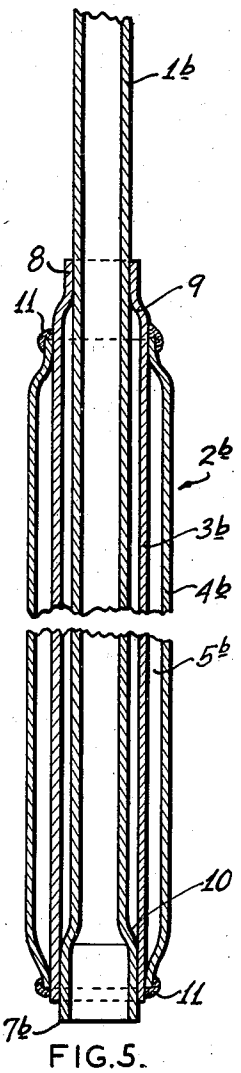


FIG. 5.

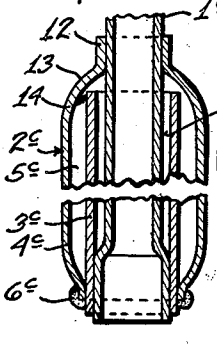


FIG. 6.

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Patented July 8, 1941 2,248,231

UNITED STATES PATENT OFFICE

2,248,231

SIPPER

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Application October 12, 1940, Serial No. 360,957

9 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.

On February 27, 1940, United States Letters Patent No. 2,192,036, was granted on an improved sipper which includes a jacket portion adapted to confine air to give buoyancy to the sipper and which is movable longitudinally of the axis of the sipper to increase the effective length thereof. However this patented sipper includes as an essential part thereof a joint, formed of readily breakable material, that secures the jacket portion to the main sipper element and which must be broken to permit the jacket portion to be moved longitudinally of the main sipper element in order to extend the effective length of the sipper. While the patented sipper referred to functions in a highly successful manner when properly handled by a user thereof, yet the fact that a user must break a joint to extend the length of the sipper makes it possible that the sipper might be bent, broken, or otherwise injured, when the force required to break the joint is not properly applied to the sipper.

In view of the chance, at least, that a sipper of the construction disclosed in the patent referred to might be injured by improper application of the force required to break the joint, the improved sipper disclosed herein is so constructed and arranged that its construction does not include a joint which must be broken to permit movement of the jacket portion to extend the length of the sipper. Instead the jacket portion of the improved sipper of the present invention embodies within itself a maintained chamber for confined air, and the entire jacket portion is freely movable at all times longitudinally of the axis of the sipper, without any restraining force other than friction, to extend the length of the sipper as desired.

Fig. 1 is an elevation of the improved sipper showing the jacket portion in its retracted position.

Fig. 2 is a view similar to Fig. 1 but showing the jacket portion of the sipper in an extended condition.

Fig. 3 is a fragmentary vertical section of the improved sipper showing the jacket portion thereof sealed at its lower end.

Fig. 4 is a fragmentary vertical section of a modified form of the invention in accordance with which the jacket portion of the sipper is sealed at its upper end.

Fig. 5 is a fragmentary vertical section of another modified form of the invention showing a jacket portion of slightly different construction which is sealed at both of its ends.

Fig. 6 is a fragmentary vertical section of still another form of the invention showing yet another form of jacket portion construction.

In the drawing, wherein are shown for the purpose of illustration, merely, several embodiments of the invention, A designates in Figs. 1 to 3, inclusive, the improved sipper generally, said sipper A including a main sipper element 1 and a jacket portion 2. The main sipper element 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 that 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 inner member 3 and an outer member 4 formed from the same material from which the main sipper element 1 is formed, or a different material having the required characteristics. The jacket portion 2 of the sipper A is preferably of less length than the main sipper element 1 and the inner member 3 thereof surrounds a portion of said main sipper element in contact with the outer surface thereof as shown to the best advantage in Fig. 3. The outer member 4 of the jacket portion 2 contacts at its opposite ends with the opposite end portions of the inner member 3 and the length of the outer member intermediate of the opposite ends thereof is bulged outwardly to provide a space 5 wherein air is confined to give buoyancy to the sipper when it is sealed in a receptacle containing liquid.

At the lower end of the jacket portion of the sipper illustrated in Figs. 1 to 3, inclusive, the inner member 3 and the outer member 4 are sealed together as indicated at 6 in Fig. 3, this seal being produced in any suitable manner, such, for instance, as by applying heat to the lower portion of the jacket portion of the sipper when said jacket portion is formed from thermo-plastic

material, so as to weld the inner and outer members of the jacket portion together. The upper portion of the outer member 4 of the jacket portion of the sipper is unattached to the inner member of the jacket portion but fits closely thereagainst so that while liquid is excluded from the space 5 air may be forced therefrom if the pressure of the air confined within the space 5 is increased to an excessive degree. The lower portion of the main sipper element 1 is flared as indicated at 7 in Fig. 3 and this flared portion normally is disposed immediately below the lower end of the jacket portion 2 of the sipper A, said flared portion being intended for a purpose to be hereinafter set forth.

In the use of the improved sipper illustrated in Figs. 1 to 3, inclusive, the sipper is sealed in a bottle or other receptacle containing liquid, the top of the main sipper portion being forced against the under side of the cap or other closure element which seals the mouth of the bottle or other receptacle, by the buoyancy of the body of air trapped in the space 5. Because of this situation removal of the 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 as described the user may withdraw the sipper and slide the jacket portion 2 thereof longitudinally of the main sipper element 1 to increase the effective length of the sipper to the desired extent whereupon the sipper may be employed in the usual manner to consume the liquid contents of the receptacle with the aid thereof.

The flared lower end portion 7 of the main sipper element 1 serves to increase the friction between the main sipper element and the jacket portion 2 when said jacket portion is moved longitudinally of said main sipper whereby the likelihood that the jacket portion will be pulled entirely free from the main sipper element is greatly minimized. In other words, if the jacket portion were capable of very free and unrestrained movement longitudinally of the main sipper portion an inexperienced person might pull the jacket portion hard enough to unintentionally draw it completely free of the main sipper portion. Because of the presence of the flared lower portion 7 of the main sipper element 1, however, the movement of the jacket portion of the sipper longitudinally of the main sipper element is restrained as a result of the crowding of the flared portion into the interior of the inner member 3 of the jacket portion, thereby greatly increasing friction between the relatively moving jacket portion and main sipper element and rendering quite unlikely complete separation of said jacket portion and said main sipper element.

Obviously the jacket portion 2 of the sipper A may be of any desired length relative to the length of the main sipper element 1, and if desired said jacket portion may be of such length that its upper end portion is located above the surface of the liquid in a receptacle in which the sipper is sealed.

The sipper illustrated in Fig. 4 is very similar to the sipper shown in Figs. 1 to 3, inclusive, the only difference being that the inner member 3*a* and the outer member 4*a* of the jacket portion 2*a* are sealed together at the upper end of the jacket portion, as indicated at 6*a*, instead of at the lower end of the jacket portion as shown in Fig. 3.

In Fig. 5 the inner member 3*b* of the jacket portion 2*b* is provided with a sleeve portion 8 at its upper end which closely embraces the inner sipper element 1*b*, and the portion of said inner member located downwardly of said sleeve portion is of increased diameter to provide an abutment 9 at the point where the sleeve portion joins the lower portion of increased diameter. Also the main sipper element is provided with a flared portion 7*b* shaped as shown in Fig. 5. In the use of the sipper shown in Fig. 5, movement of the jacket portion 2*b* longitudinally of the main sipper element 1*b* is arrested when the abutments 9 and 10 of the inner member 3*b* of the jacket portion and the main sipper element, respectively, are brought into contact with each other whereby complete separation of the jacket portion and the main sipper element is prevented. The inner and outer members 3*b* and 4*b* of the jacket portion 2*b* of the sipper illustrated in Fig. 5 may be sealed at either end of the jacket portion, or at both ends as shown at 11 in that view.

In Fig. 6 the outer member 4*c* of the jacket portion 2*c* is provided at its upper end with a sleeve portion 12 which closely embraces the main sipper element 1*c* and the portion of said outer member located below said sleeve portion is of increased diameter. Also the outer member 4*c* and the inner member 3*c* of the jacket portion 2*c* are sealed together at the lower end of the jacket portion as indicated at 6*c*, and the upper end of the inner member of said jacket portion terminates short of the shoulder portion 13 of the outer member of said jacket portion to provide an opening 14 between said parts. The lower end portion of the main sipper element 1*c* is provided with a flared portion 7*c*, shaped as shown in Fig. 6, with which the lower portion of the inner face of the inner member 3*c* of the jacket portion 2*c* contacts whereby an annular space 15 is provided between the inner face of the inner member of the jacket portion and the outer face of the main sipper element. In the use of a sipper constructed as shown in Fig. 6 air may be forced from the space 5*c* through the opening 14 and into the space 15 in the event the pressure of the air confined within said space 5*c* increases to an excessive degree. Also contact between the shoulder portion 13 of the outer jacket member 4*c* and the upper portion of the flared portion of the main sipper element 1*c* prevents complete separation of the jacket portion of the sipper and the main sipper element thereof.

I claim:

1. A sipper including a main sipper portion comprising a tubular element open from end to end, and a jacket portion surrounding said main sipper portion, said jacket portion being supported by said main sipper portion for sliding movement longitudinally of said main sipper portion and to a position where it extends beyond an end thereof to increase the effective length of the sipper, said jacket portion including as parts of its unitary structure laterally spaced portions which provide therebetween a space in which air is confined.

2. A sipper including a main sipper portion comprising a tubular element open from end to end, and a jacket portion surrounding said main sipper portion, said jacket portion being supported by said main sipper portion for sliding

movement longitudinally of said main sipper portion and to a position where it extends beyond an end thereof to increase the effective length of the sipper, said jacket portion including as parts of its unitary structure laterally spaced annular wall portions which provide therebetween a space in which air is confined.

3. A sipper including a main sipper portion comprising a tubular element open from end to end, and a jacket portion surrounding said main sipper portion, said jacket portion being supported by said main sipper portion for sliding movement longitudinally of said main sipper portion and to a position where it extends beyond an end thereof to increase the effective length of the sipper, said jacket portion including as parts of its unitary structure laterally spaced annular wall portions which provide therebetween a space in which air is confined, and means for sealing said air space adjacent to an end of said jacket portion.

4. A sipper including a main sipper portion comprising a tubular element open from end to end, a jacket portion surrounding said main sipper portion, said jacket portion being supported by said main sipper portion for sliding movement longitudinally of said main sipper portion and to a position where it extends beyond an end thereof to increase the effective length of the sipper, said jacket portion including as parts of its unitary structure laterally spaced annular wall portions which provide therebetween a space in which air is confined, and means for sealing said air space adjacent to an end of said jacket portion, and means for opposing unintended complete removal of said jacket portion from said main sipper portion.

5. A sipper including a main sipper portion comprising a tubular element open from end to end, and a jacket portion surrounding said main sipper portion, said jacket portion being supported by said main sipper portion for sliding movement longitudinally of said main sipper portion and to a position where it extends beyond an end thereof to increase the effective length of the sipper, said jacket portion including as parts of its unitary structure laterally spaced annular wall portions which provide therebetween a space in which air is confined, and means for sealing said air space adjacent to an end of said jacket portion, said jacket portion including a part so arranged that air may be forced from said air space in response to excessive increase of pressure of the air within said air space.

6. A sipper including a main sipper portion comprising a tubular element open from end to end, and a jacket portion surrounding said main sipper portion, said jacket portion being supported by said main sipper portion for sliding movement longitudinally of said main sipper portion and to a position where it extends beyond an end thereof to increase the effective length of the sipper, said jacket portion including an inner annular wall and an outer annular wall spaced apart to provide therebetween a space in which air is confined, and said inner and outer walls being arranged in contact with each other at points adjacent to the opposite ends of the jacket portion to close the air space at said points.

7. A sipper including a main sipper portion comprising a tubular element open from end to end, and a jacket portion surrounding said main sipper portion, said jacket portion being supported by said main sipper portion for sliding movement longitudinally of said main sipper portion and to a position where it extends beyond an end thereof to increase the effective length of the sipper, said jacket portion including an inner annular wall and an outer annular wall spaced apart to provide therebetween a space in which air is confined, and said inner and outer walls being arranged in contact with each other at points adjacent to the opposite ends of the jacket portion to close the air space at said points, and means for sealing said air space at one of its ends.

8. A sipper including a main sipper portion comprising a tubular element open from end to end, a jacket portion surrounding said main sipper portion, said jacket portion being supported by said main sipper portion for sliding movement longitudinally of said main sipper portion and to a position where it extends beyond an end thereof to increase the effective length of the sipper, said jacket portion including an inner annular wall and an outer annular wall spaced apart to provide therebetween a space in which air is confined, and said inner and outer walls being arranged in contact with each other at points adjacent to the opposite ends of the jacket portion to close the air space at said points, and means for sealing said air space at one of its ends, and means for opposing unintended complete removal of said jacket portion from said main sipper portion.

9. A sipper including a main sipper portion comprising a tubular element open from end to end, a jacket portion surrounding said main sipper portion, said jacket portion being supported by said main sipper portion for sliding movement longitudinally of said main sipper portion and to a position where it extends beyond an end thereof to increase the effective length of the sipper, said jacket portion including an inner annular wall and an outer annular wall spaced apart to provide therebetween a space in which air is confined, and said inner and outer walls being arranged in contact with each other at points adjacent to the opposite ends of the jacket portion to close the air space at said points, and means for sealing said air space at one of its ends, and means for opposing unintended complete removal of said jacket portion from said main sipper portion, said means comprising a flared portion on said main sipper portion which is adapted to engage a portion of said jacket portion in response to relative movement of said main sipper portion and said jacket portion.

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