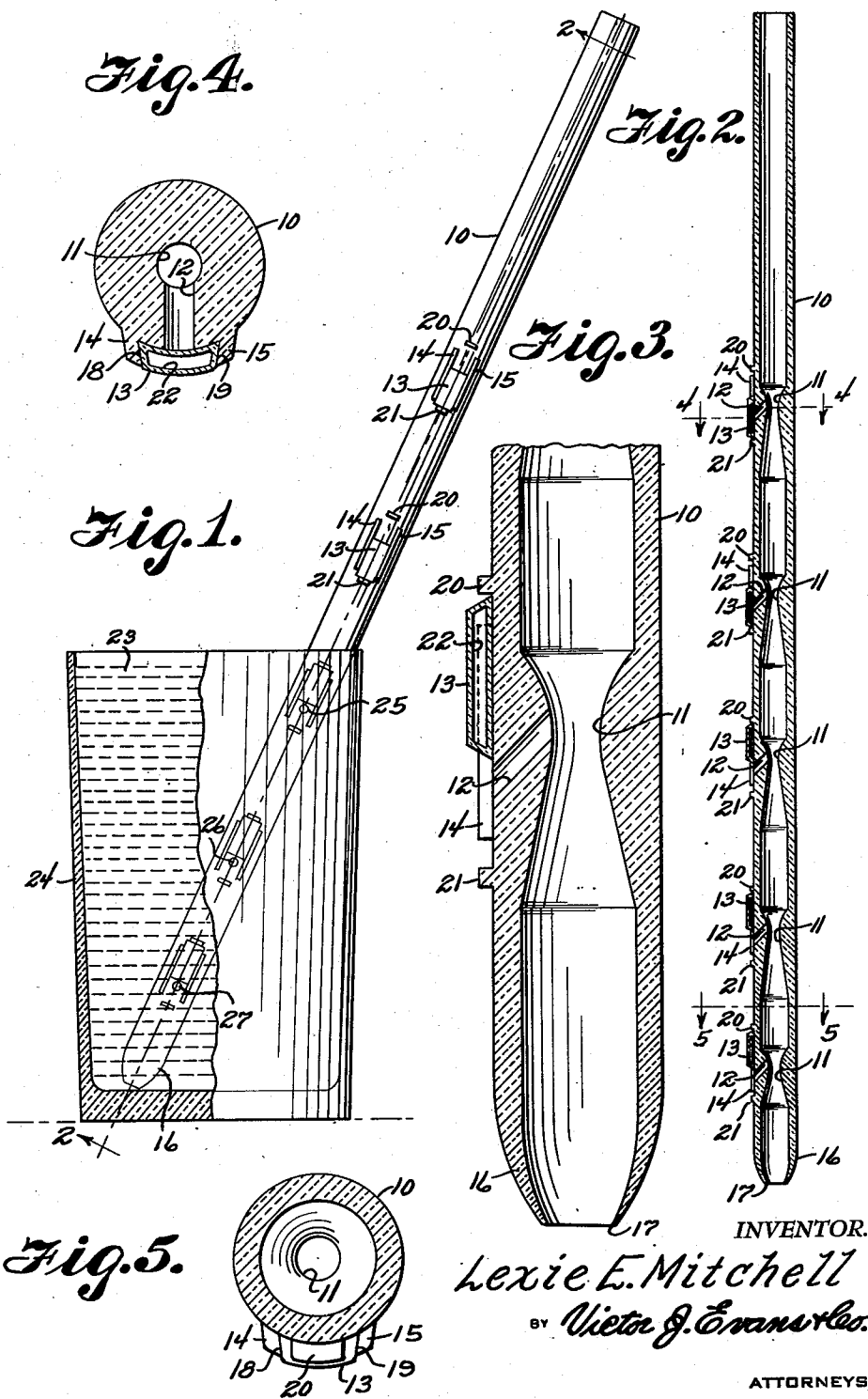


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MULTIPLE INLET DRINKING STRAW
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MULTIPLE INLET DRINKING STRAW

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3 Claims. (Cl. 299—17)

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This invention relates to drinking straws used particularly in soft drinks and more particularly drinks having a plurality of products of different specific gravity therein wherein the different products may be suspended at different points in a glass or container, and in particular the invention relates to a drinking straw having spaced inlet openings extended throughout the length thereof with floating closures for the openings wherein the closures drop to close the opening as the level of a liquid in which the straw is positioned drops to position below the opening.

The purpose of this invention is to provide a drinking straw in which liquid in which the straw is positioned is drawn into the straw at a plurality of points and at different elevations throughout the height of the liquid.

In the usual drinking straw which is formed with an inlet opening only at the lower end it is necessary to thoroughly mix products in a container in which the straw is positioned and where products do not readily mix this is difficult and substantially impossible. With this thought in mind this invention contemplates a drinking straw having a plurality of spaced openings therein so that the liquid may be withdrawn at a plurality of elevations and whereby the liquids drawn into the straw at the different elevations are thoroughly mixed as they are drawn upwardly through the straw.

The object of this invention is, therefore, to provide means for construction of a drinking straw whereby liquids in a container may be withdrawn at different points and whereby openings in the straw are closed as the liquid level drops below the openings.

Another object of the invention is to provide a drinking straw having constricted passages therein providing a Venturi action whereby liquids of different densities drawn into the straw are thoroughly mixed by expanding and contracting in areas through which the liquids pass.

A further object of the invention is to provide a drinking straw for withdrawing a liquid from a container at a plurality of elevations in the container which is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a drinking straw with the interior thereof formed with a plurality of units, with constricted portions in each unit and with openings covered by floating closures extended through the wall of the straw and opening into the said constricted portions.

Other features and advantages will appear

from the following description taken in connection with the drawings wherein:

Figure 1 is a side elevational view showing a glass with a drinking straw positioned therein with part of the glass broken away and with openings in the wall of the straw positioned throughout the length of the straw.

Figure 2 is a longitudinal section through the straw taken on line 2—2 of Figure 1.

Figure 3 is a similar section on an enlarged scale showing the lower end of the straw with the upper part broken away.

Figure 4 is a cross section through the straw taken on line 4—4 of Figure 2.

Figure 5 is a similar section taken on line 5—5 of Figure 2.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved drinking straw of this invention is formed with a tubular casing 10 having spaced constricted portions 11 therein with openings 12 extended from the outer wall into the said constricted or Venturi sections, and with floating closures 13 slidably mounted in guides 14 and 15 which provide tracks on the outside of the straw.

The lower end 16 of the straw is formed with a converging cylindrical wall having comparatively thin edges 17 at the lower end and with the thickness thereof increasing toward the body of the straw.

Spaced above the lower end of the straw is the first constricted section 11 which provides a Venturi action and the opening 12, which slopes upwardly enters the venturi just above the throat thereof as shown in detail in Figure 3.

The guides 14 and 15 are positioned on the outer surface of the casing 10 and the inner surfaces of the guides converge outwardly from the outer surface of the casing 10, as shown in Figure 4. With the inner surfaces of the guides 14 and 15 sloping in this manner and with the side surfaces 18 and 19 of a closure 13 correspondingly shaped the closures are free to slide upwardly and downwardly on the straw without separating from the straw. Stops 20 and 21 extend outwardly from the surface of the straw, straddling each of the openings 12, and limiting the movement of the closures 13.

The closure 13 is provided with a sealed inner opening 22 in which a vacuum may be provided or the area may be filled with air or other gas.

The closure 13 and also the casing 10 of the straw may be formed of plastic or any suitable material and with the parts arranged in this manner the straw may be inserted in a liquid 23

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in a glass or container 24 and as suction is applied to the upper end of the straw the liquid will be drawn into the straw at the points, as indicated by the numerals 25, 26 and 27 and as the liquid is drawn through the Venturi sections of the straw the different parts thereof will be thoroughly mixed whereby a thoroughly mixed solution arrives at the upper end.

As the level of the liquid drops below the point 25 the closure 13, which floats, and which is buoyed upwardly thereby, drops downwardly closing the opening 12 at the point 25 so that liquid is drawn inwardly only at the points 26 and 27. As the level of the liquid continues to drop the opening at the point 26 will be closed and likewise the opening at the point 27 will be closed so that liquid in the lower part of the container is drawn inwardly from the lower end of the straw.

It will be understood that although this device is disclosed and described as a drinking straw, it may also be provided in various sizes and used on the suction lines of pumps and the like, and particularly may be used for withdrawing fluids from vats, tanks and the like.

It will be understood that modifications may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. In a drinking straw, the combination which comprises an elongated tubular casing having spaced restricted areas providing venturis therein with inwardly and upwardly sloping openings through the wall thereof and positioned to enter the interior of the casing at points corresponding with the throats of the venturis, said tubular casing having parallel rails providing guides on the outer surface straddling the said openings through the wall thereof and having stops at the ends of the guides, and hollow floating closures slidably mounted in the rails and positioned to

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drop downwardly to close the openings through the wall of the casing.

2. In a drinking straw, the combination which comprises an elongated tubular casing having spaced openings through the wall thereof and having longitudinally disposed tracks on the outer surface, the said tracks positioned to straddle the said openings, and floatable closures slidably mounted in said tracks, positioned to close the said openings through the wall of the tube and also positioned to float upwardly to open the said openings with the section of the tube upon which the closures are positioned immersed in a fluid.

3. In a drinking straw, the combination which comprises an elongated tubular casing having spaced openings through the wall thereof and having longitudinally disposed tracks on the outer surface, the said tracks positioned to straddle the said openings, and floatable closures slidably mounted in said tracks, positioned to close the said openings through the wall of the tube and also positioned to float upwardly to open the said openings with the section of the tube upon which the closures are positioned immersed in a fluid, said tubular casing having means thereon for limiting upward and downward travel of the said floatable closures.

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