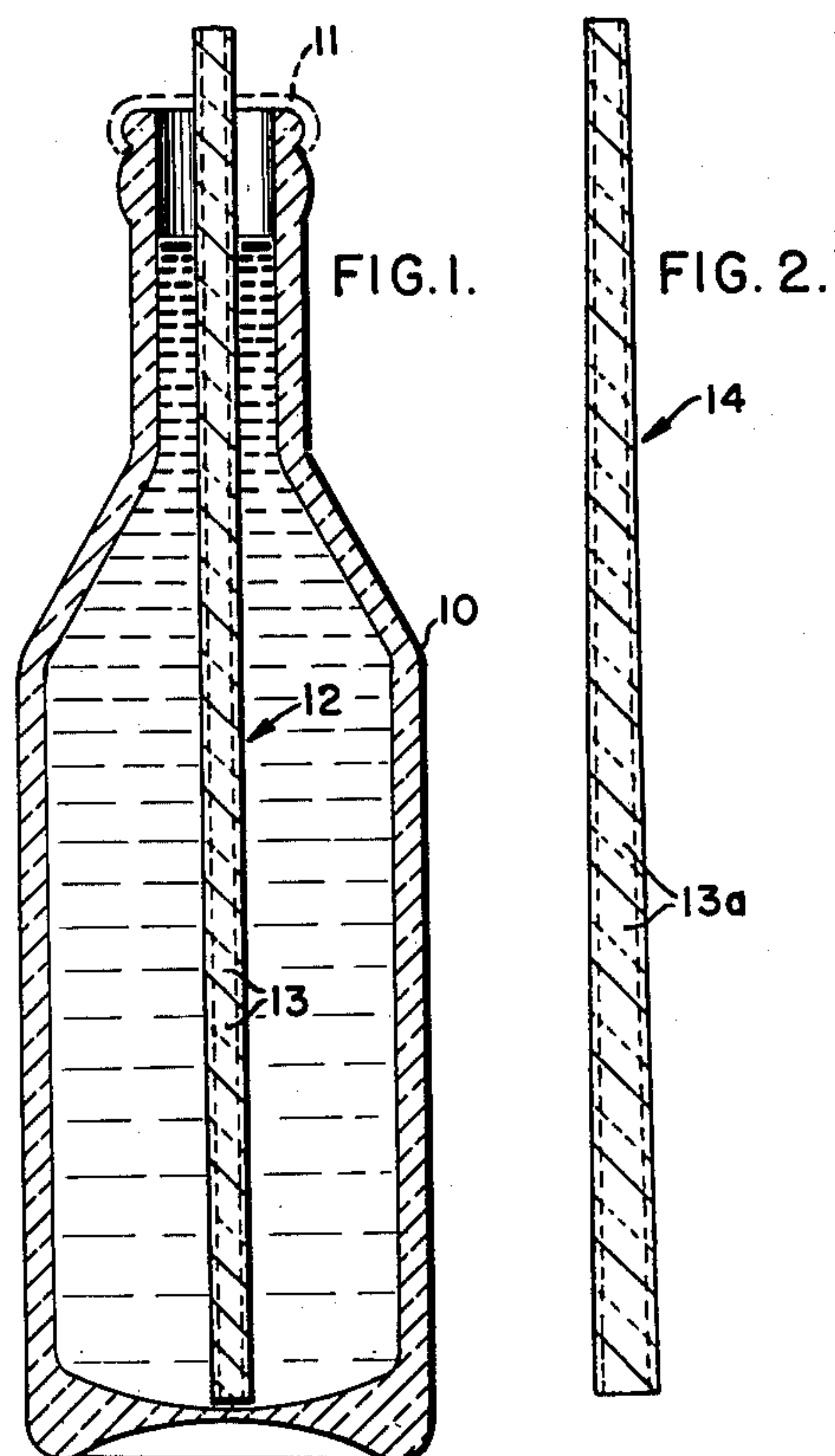


Aug. 27, 1963

YAT CHUEN YUEN  
DRINKING STRAW AND CONTAINER

3,101,855

Filed Oct. 25, 1961



INVENTOR  
*Yat Chuen Yuen*  
BY *J. Ledermann*  
ATTORNEY



1

3,101,855

## DRINKING STRAW AND CONTAINER

Yat Chuen Yuen, % Ta-Kee Motor Car Co., 214A Des Voeux Road, Central, Ground Floor, Hong Kong

Filed Oct. 25, 1961, Ser. No. 147,598

Claims priority, application Great Britain Dec. 7, 1960

1 Claim. (Cl. 215-1)

This invention relates to drinking straws, and to drinking appliances of the kind comprising a beverage container, a closure therefor, and a straw normally held down in the container by the closure.

An object of the invention is the provision, in combination with a beverage bottle or the like, of a novel and improved construction for a drinking straw of the type which is resiliently compressible to a shorter length than its normal extended length. Such straws have a normal length greater than the height of the bottles within which the straws are mounted, so that upon removal of the closure cap the straw automatically elongates and thus exposes its upper end above the top of the bottle. Hence, the user may apply his lips to the straw to drink the beverage without having to handle the straw.

A further object of the invention is the provision of a drinking straw of the type and for the purpose stated, which is formed of a unitary continuous helically wound strip of plastic material, having a normal length greater than that of the bottle in which it is to be mounted and which, upon removal of the closure cap with the straw confined in the bottle, automatically elongates in the manner stated above.

In the accompanying drawings which illustrate how the invention may be carried into effect,

FIG. 1 is a longitudinal sectional view through a bottle containing a straw made in accordance with the invention, and a beverage which may or may not be carbonated, with the straw shown in its normal extended position wherein its upper end projects above the top of the bottle, the bottle cap being shown in phantom in its closure position.

FIG. 2 is an elevational view of a modified form of the straw.

In the drawing like reference numerals denote like or equivalent parts.

Referring in detail to the drawing, FIG. 1, the numeral 10 denotes a bottle containing a beverage which may be carbonated or not, the bottle being adapted to be sealed in the well known manner by a closure cap 11 of the crown cork or plastic type.

The straw 12 is made in one piece by helically winding a strip of synthetic plastic or other water-proof material. No adhesive is used to bind the successive overlapping convolutions 13 together, so that when the cap 11 is applied to the bottle the overlapping convolutions are free to slide over one another to reduce the length of the straw. When the cap 11 is removed the convolutions are free to slide over one another in the opposite direction to extend the length of the straw and bring the upper end or mouthpiece into the drinking position above the top of the bottle.

FIG. 2 illustrates a straw 14 made similarly to that of FIG. 1 but differing therefrom in that instead of being cylindrical the straw is of conical formation, tapering inwardly from bottom to top and having overlapping convolutions 13a.

2

In FIGS. 1 and 2 the overlapping convolutions of the straw are pressed tightly together to provide a liquid tight seal when the straw is in its normal elongated position prior to its mounting in the bottle.

It is apparent that the straws 12 and 14, owing to the nature of their construction as set forth above, inherently possess resiliency in both longitudinal and radial directions. Hence, upon applying the cap 11 to the filled beverage bottle and thus compressing the straw longitudinally, the successive convolutions not only slide over each other but also expand radially so that a leakage is formed between the convolutions, into which liquid seeps. When the bottle cap is removed, with the overlapping edges of the convolutions thus wetted, the elasticity of the helical straw elongates the straw to its original length and the convolutions contract into closer contact with each other. Since the convolutions are now wet this closer contact provides a tight seal between them. A suction applied to the projecting end or mouthpiece of the straw will not disturb this condition, and as long as the convolutions have this liquid seal between them they will prevent air from being sucked into the straw. Thus the straw requires no cement or other adhesive to seal the convolutions in the extended or drinking position of the straw. The straw may of course have a length, in expanded condition, greater than that shown in FIG. 1, so that upon removal of the bottle cap it projects beyond the mouth of the bottle a greater distance than shown in FIG. 1.

I claim:

In combination, a beverage bottle filled with liquid, a closure cap for the bottle, and drinking straw means consisting of a length of helically wound plastic strip having successive convolutions normally in closed slidable contact with each other, said straw means having a normal length sufficiently in excess of the distance between the bottom and the top of the bottle so that when the straw means is positioned in the uncapped bottle the lower end of the straw means rests on the bottom of the bottle and a portion of the upper end of the straw means protrudes through the top of the bottle, said straw means upon applying the cap to the bottle being longitudinally compressed to shorten the straw means and cause the convolutions to expand radially into lesser close-fitting engagement with each other and thus provide a leakage space between overlapping edges of the convolutions into which space the liquid seeps to wet said edges so that when the cap is removed the straw means elongates to its normal length and the overlapping edges have a liquid seal between them.

### References Cited in the file of this patent

#### UNITED STATES PATENTS

375,962	Stone	Jan. 3, 1888
942,306	Clarke	Dec. 7, 1909
1,253,579	Deanes	Jan. 15, 1918
1,309,994	McAuliffe	July 15, 1919
1,858,366	Lehmann	May 17, 1932
2,013,748	Dunlap	Sept. 10, 1935
2,072,580	Correll	Mar. 2, 1937
2,192,036	Hamilton	Feb. 27, 1940
2,294,224	Daly	Aug. 25, 1942
2,613,988	Jarbeau	Oct. 14, 1952