Aug. 27, 1968 H. K. STOESSEL ETAL 3,398,624

DRINKING STRAW AND TONE GENERATOR

Filed Oct. 22, 1965

FIG. 1

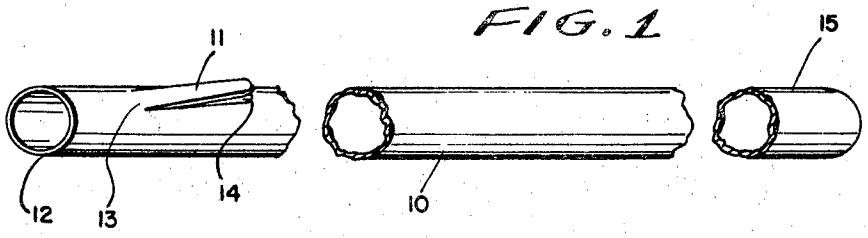


FIG. 2

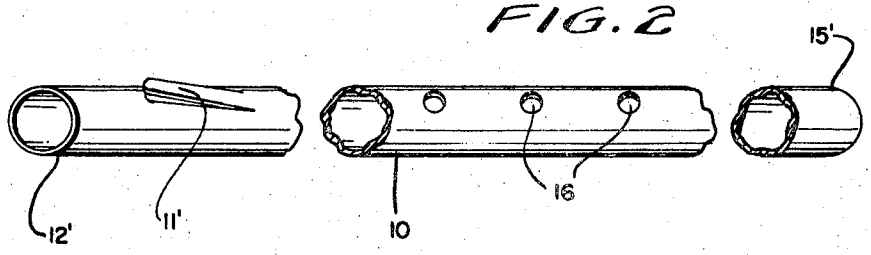
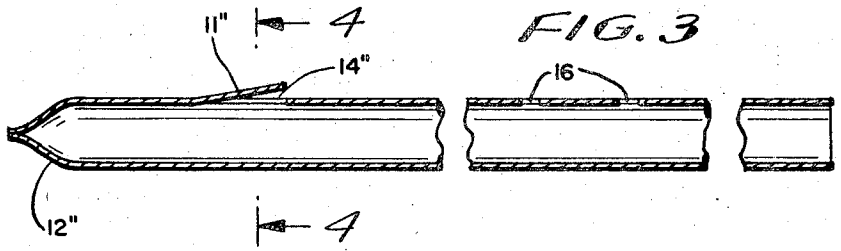


FIG. 3



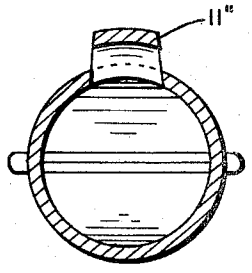


FIG. 4

INVENTORS
HENRY KURT STOESSEL
TOMAS NEWBERY

BY Mark Dairechos

ATTORNEY

United States Patent Office 3,398,624 Patented Aug. 27, 1968

3,398,624

DRINKING STRAW AND TONE GENERATOR

Henry Kurt Stoessel, 21 W. 45th St. 10036, and Tomas Newbery, 116 Pinehurst Ave. 10033, both of New York, N.Y.

Filed Oct. 22, 1965, Ser. No. 502,035
2 Claims. (Cl. 84—330)

ABSTRACT OF THE DISCLOSURE

A combined drinking straw and tone generator comprising a resilient plastic tube member open at both ends and including an integral resonating reed for producing a tone, the reed being disposed sufficiently close to one end of the tube to permit the reed and the one end to be encompassed within the mouth when the device is used as a straw.

This invention relates to a combined drinking straw and tone generator.

More particularly, this invention relates to an inexpensive drinking straw which may be used, in addition, as a musical instrument for generating one or more predetermined musical notes.

This invention further relates to a novel method of making the previously described apparatus.

More particularly, this invention relates to a combined straw and musical instrument which is very inexpensive to manufacture and, therefore, is susceptible of use as a premium or giveaway item.

Accordingly, it is an object of the invention to provide a combined drinking straw and musical tone generator.

A further object of the invention is the provision of a plastic straw and tone generator of such inexpensive construction as to be susceptible of being a throw-away item.

A further object of the invention is the provision of a device of the class described wherein a plastic straw is formed with an integral reed and one or more resonance varying apertures, to permit the user to play a plurality of musical notes.

Still a further object of the invention is the provision of a method of forming a device of the class described.

To attain these objects and such further objects as may appear herein or be hereinafter pointed out, we make reference to the accompanying drawings, forming a part hereof, in which:

FIGURE 1 is a perspective view of a device in accordance with the invention;

FIGURE 2 is a perspective view of a further embodiment of the invention;

FIGURE 3 is a vertical sectional view of still a further embodiment of the invention;

FIGURE 4 is a section taken on the line 4—4 of FIGURE 3.

In accordance with the invention, there is shown in FIGURE 1 a combined tone generator and straw comprising a body portion **10** made of a relatively stiff, resiliant plastic material such as exemplified by styrene. While styrene is a preferred material from which the straw may be made, it will be readily understood that other materials may be suitable for use in this device, the distinguishing characteristics for material susceptible of such use being stiffness, high resiliency and non-solubility in fluids normally imbibed through straws.

The thickness of the body portion, where styrene is employed as the fabricating material, is preferably in the range of about .008" to about .014" for a straw of overall outside diameter of about ¼".

In accordance with the invention, there is formed in the tubular body portion a resonator reed **11**, the reed **11** being preferably formed sufficiently close to the end **12** of the straw which is to be placed in the mouth of the user that the entirety of the reed can be comfortably accommodated within the mouth.

In practice, it is preferred that the furthest portion of the reed **11** from the end **12** be disposed not more than about 1½" from the end. The reed is preferably generally triangular or tongue shaped in plan, and is integrally formed from the body portion **10**, the reed **11** being joined to the body portion at a base connection **13** running substantially normal to the longitudinal axis of the straw. The reed **11** is outwardly deflected and projects beyond the surface of the body portion **10**.

We have determined that the device of the invention can be conveniently manufactured by forming the body of the tube from an initially flat web which is subsequently stressed into a cylinder, rather than, for instance, being initially extruded in cylindrical form.

The slits defining the reed may be formed either before or after stressing the web into cylindrical conformation. We have discovered that by this method, a greater tension is set up in the body of the cylinder than in the isolated portion defining the reed. Accordingly, we have discovered that the less stressed reed assumes an arcuate configuration having a radius of curvature greater than that of the stressed body portion and, thus, automatically is outwardly deflected from the body portion. Moreover, since the root or base **13** of the reed is under greater stress than the free end of the reed, the reed assumes a progressively outwardly inclined attitude with respect to the body portion, which attitude has been found highly desirable in the creation of musical tones.

In utilizing a styrene plastic tube of the dimensions set forth above, we have determined that preferred dimensions for the reed may vary between about ⅜" to ¾" in length and that the length of the reed should be at least about twice as great as the width of the base of the reed.

In practice, and again referring back to the initial dimensions noted, a reed of about ½" in length and about ¼" in width at its base will produce a musical note in the range of about 600 to 800 cycles.

A tone generator in accordance with FIGURE 1 is used by placing the end **12** of the straw in the mouth sufficiently far so that the reed **11** and the aperture **14** defined by the formation are contained entirely within the mouth. When the lips are closed about the body of the straw, exhaling into the end **12** will produce a musical note, the amplitude of which will vary, of course, in accordance with the pressure exerted by the user.

A straw, when used for purposes of imbibing liquids is, of course, placed in the mouth in the same manner noted, with the opposite end **15** below the surface of the liquid.

In the embodiment of FIGURE 2, wherein like parts have been given like reference numbers, the reed **11'** has been formed in the opposite direction from that shown in FIGURE 1—that is, the apex of the reed is directed toward the end **12'** of the straw. Additionally, one or more resonator apertures **16** have been formed generally adjacent the end **15'**. It will be appreciated that by covering one or more of the apertures, various tones may be produced.

In FIGURE 3 there is shown a still further embodiment of the invention wherein the end **12"** has been closed, as by heat sealing. The sealing of the end **12"** has been found to create, in the area between the reed **11"** and the end **12"**, a resonator chamber which forms a more satisfactory tone generator.

In the embodiment of FIGURE 3, of course, all liquids imbibed through the straw must pass through the aperture **14"** defined by the formation of the reed.

In the embodiment of FIGURE 3, there may be formed,

if desired, apertures 16'' for purposes of varying the sound produced.

From the foregoing it will be recognized that we have provided an integral, inexpensive and easily manufactured tone generator device which is also useful as a straw. As the device may be readily mass produced from inexpensive materials, it is particularly suitable for use as a give-away or premium item.

Having thus described the invention and illustrated its use, what we claim as new and desire to secure by Letters Patent is:

1. A combined drinking straw and tone generator comprising a stiff, hollow, cylindrical plastic tube open at both ends, of wall thickness in the range of about .008 to about .14", a reed of generally triangular conformation integrally formed from said tube, said reed being disposed sufficiently close to one end thereof to be capable of being entirely encompassed within the mouth of the user, said reed being arcuate in cross section, the radius of curvature of said reed being greater than the radius of curvature of the body of said tube, said reed being outwardly deflected from said tube to define a space between said reed and tube.

2. A device in accordance with claim 1 and including at least one resonator aperture in proximate spaced relation to the other end of said tube, said aperture being effective to vary the tone being produced by said tube in accordance with the covered and uncovered condition of said aperture.

References Cited

FOREIGN PATENTS

322,719 Germany.
326,562 Germany.

RICHARD B. WILKINSON, *Primary Examiner.*
GARY M. POLUMBUS, *Assistant Examiner.*