July 20, 1926. 1,593,240

W. CALDWELL

MUTED REED SOUND MAKING DEVICE

Filed March 6, 1924

Fig.1.

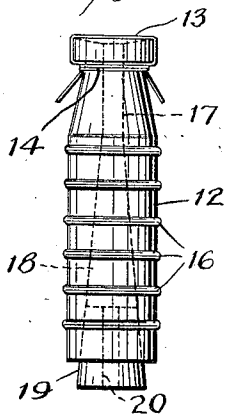


Fig.2.

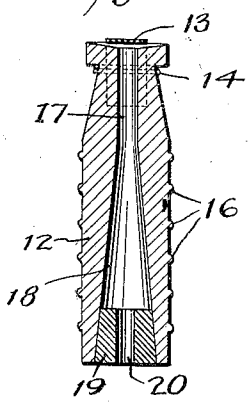


Fig.3.

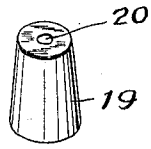


Fig.4.

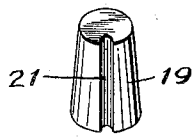


Fig.5.

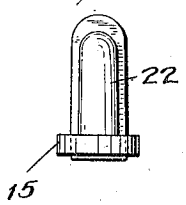


Fig.6.

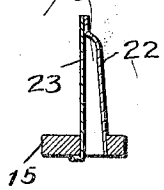


Fig.7.

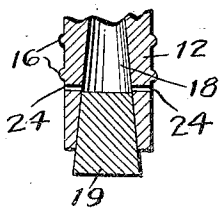


Fig.8.

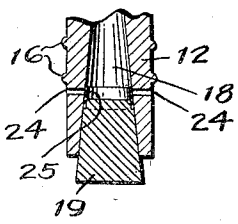


Fig.9.

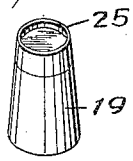


Fig.10.

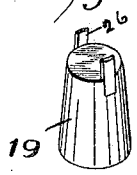
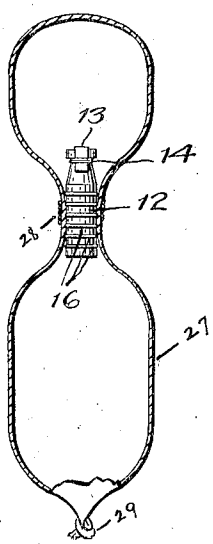


Fig.11.



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UNITED STATES PATENT OFFICE.

WILLIAM CALDWELL, OF NEW YORK, N. Y.

MUTED-REED SOUND-MAKING DEVICE.

Application filed March 6, 1924. Serial No. 697,256.

My invention relates to a sound producing device, by which the tone and pitch of the sound is actuated and such sound continued for a considerable longer time in such device, than that which is ordinarily had in devices of this character and the use of the same in balloons or other air contrivances; these devices are those in which the air is forced both ways through the device. My invention relates to the construction of the mute in the instrument; the instrument being formed and comprising a tube, having a passage through the longitudinal axis thereof, said passage being characterized by a straight narrow bore adjacent the top of the tube and continuing into a flared out opening, a rubber strip covering the top of the tube, a mute in the flared opening, an annular rubber strip attached to the inner part of the mute and laterally located holes in said tube positioned so as to be covered by said annular strip.

Other objects and advantages of the sound producing device will be brought out in the following specifications and illustrated in the drawings, of which—

Fig. 1 is a view in side elevation of the sound producing device forming a part of the invention.

Fig. 2 is a longitudinal section thereof.

Fig. 3 is a perspective view of the mute shown in Figs. 1 and 2.

Fig. 4 is a perspective view of an alternative form of mute.

Figs. 5 and 6 are elevation and sectional views, respectively of another form of mute.

Fig. 7 is a fragmentary sectional view of the form of construction and the sound producing device, without the rubber strip or strips attached to the mute.

Fig. 8 is a fragmentary sectional view of sound producing device by which the sound is made upon and through vibration of rubber strips attached to the mute covering the laterally located holes in the tube as shown therein.

Figs. 9 and 10 are perspective views of two slightly different forms of mutes and additional sound producing devices that may be used for the air that may said to be exhaust.

Fig. 11 is a sectional view of the preferred form of balloon showing the sound producing device in position being tied securely therein at a point between 57% and 65% of the total measurement from the bottom of said balloon.

The tube 12 has the thin strip of rubber 13 stretched over its one end and secured in position by the band 14 as is usual. A plurality of beads 16 may also be provided to facilitate holding the device in place in the balloon. The bore in the passage of the tube is straight and narrow for a slight distance adjacent to the top where the rubber 13 is secured to the point as indicated by the reference numeral 17. At the end of the straight narrow portion 17 it starts to flare out as at 18 until it becomes a substantially large opening at the opposite end. At the large open end of this flared passage a plug called herein a mute 19 is forced in place. As shown in Fig. 1 the mute extends below the end of the tube and in Fig. 2 it is shown as being cut off and even with the end of the tube. The mutes are preferably made this way so that in assembling them with the stem they are easier to handle. When they are put in place they are thereafter cut off. The mute is shown as a solid plug and two or more small laterally located holes 24 (Fig. 7) are made in the tube just above where the mute top ends so that the air will pass out through them instead of any central opening as shown in Figs. 1 and 2 which central openings do not apply to the application herein—Fig. 8 is used to describe a continuous strip or flange 25 of thin rubber attached to the plug or mute and so made to have such strip or flange normally lay in front of the laterally located holes 24, so that as the air passes through the laterally located holes 24 this strip or flange 25 will vibrate very rapidly and produce a sound, which added to the sound produced by the reed instrument gives a multiple pitch, tone and blended sounds.

In Fig. 9 this form of mute is shown detached from the stem.

In Fig. 10 a slightly modified form of this arrangement is shown. Instead of the strip 25 a plurality of small strips 26 are secured to the mute and when assembled are positioned so as to cover the laterally located holes.

Fig. 11 shows the device in position in a preferred form of balloon. The device is attached in the balloon 27 at its intermediate portion, that is to say at a point between 57% and 65% of the entire measurement

from the bottom of said balloon and secured there by any appropriate windings 28. The open end of the balloon may be knotted or tied in any suitable manner as indicated at 29.

Having described my invention what I claim is new and desire to secure by Letters Patent is:—

1. A sound producing device comprising a tube, having a passage through the longitudinal axis thereof, said passage being characterized by a straight narrow bore adjacent the top of the tube and continuing into a flared out opening, a stretched rubber strip covering the top of the tube, a mute in the flared opening, an annular rubber strip attached to the inner part of the mute and laterally located holes in said tube positioned so as to be covered by said annular strip.

2. In combination with a sound producing device and a balloon, the device being tied securely in said balloon, the device comprising a tube, having a passage through the longitudinal axis thereof, said passage being characterized by a straight narrow bore adjacent the top of the tube and continuing into a flared out opening, a stretched rubber strip covering the top of the tube, a mute in the flared opening, an annular rubber strip attached to the inner part of the mute and laterally located holes in said tube positioned so as to be covered by said annular strip.

3. In combination with a sound producing device and a balloon, the device being tied securely in such balloon, at a point between 57% and 65% of its total measurement, such device comprising a tube having a passage through the longitudinal axis thereof, said passage being characterized by a straight narrow bore adjacent the top of the tube and continuing into a flared out opening, a rubber strip covering the top of the tube, a mute in the flared opening, an annular rubber strip attached to the inner part of the mute and laterally located holes in said tube positioned so as to be covered by said annular strip.

Dated, New York city, March 5, 1924.

WILLIAM CALDWELL.