

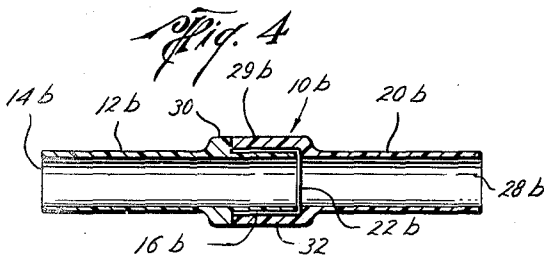
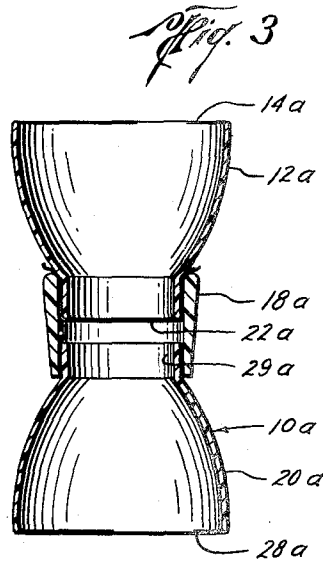
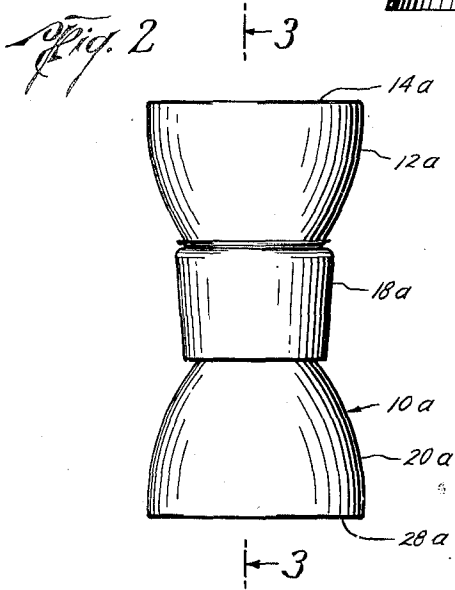
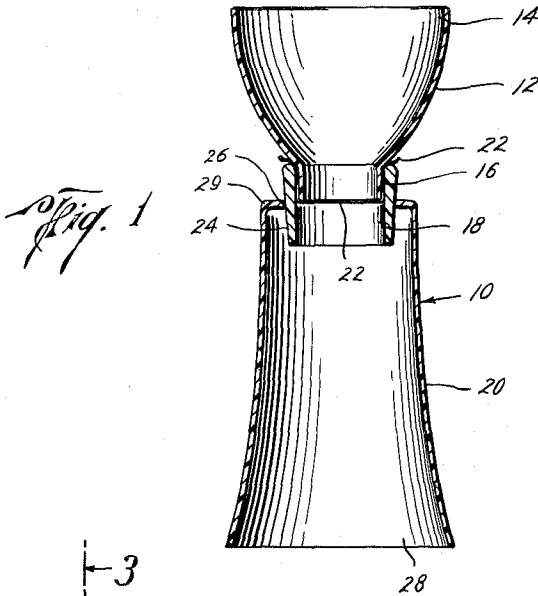
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DEFORMABLE CELLO HORN

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DEFORMABLE CELLO HORN

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4 Claims. (Cl. 46—182)

The present invention relates to improvements in musical instruments and, more particularly, relates to a musical instrument into which songs or tunes are hummed or sung in which the sound vibrations of one's vocal cords are amplified and beautified to produce tones very similar to those produced by a cello.

It is a major object of the present invention to provide an improved musical instrument which amplifies and beautifies the sound vibrations of one's vocal cords when songs or tunes are hummed or sung into the musical instrument to produce tones very similar to those produced by a cello and in which the pitch or the quality of the tone or sound produced may partially be regulated by pressure on the outside of the instrument adjacent its resonant diaphragm.

It is yet a further object of the present invention to provide such a musical instrument in which the entire instrument is made of a relatively flexible plastic and in which the pitch or quality of the tone may be varied or changed to a certain extent by pressure adjacent its resonant diaphragm.

Yet a further object of the present invention is the provision of such a musical instrument which is easily and readily manufactured at low cost and which has interchangeable parts so that horns of varying size may readily and easily be attached to the mouthpiece and the musical instrument may be played at either end, that is, at either the mouthpiece end or the horn end to produce a variety of tones and sounds.

Yet a further object of the present invention is the provision of such a musical instrument in which the resonant diaphragm is easily inserted into place or replaced and which is held in position by frictional contact between a resilient holding member and the inner end of the resilient mouthpiece.

Other and further objects, advantages and features will appear as the description of presently preferred examples of the invention are given, for the purpose of disclosure, taken in conjunction with the accompanying drawing, in which like character references designate like parts throughout the several views, and where

Figure 1 is a side, sectional view of a musical instrument according to the invention,

Figure 2 is a side, elevational view of a modification of the invention,

Figure 3 is a sectional view taken along the line 3—3 of Figure 2, and

Figure 4 is a sectional view of a still further modification according to the invention.

Referring now to the drawing, and particularly to Figure 1, the musical instrument is generally designated by the reference numeral 10 and includes the mouthpiece 12 which is flared at its outer or open end, as at 14, and diverges inwardly to a small inner end 16. The inner end 16 of the mouthpiece 12 is frictionally gripped by the generally annular or tube-like holding member 18 which serves to firmly secure the mouthpiece 12 to the horn 20 and which also serves to firmly hold the dia-

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phragm 22 in position across the open inner end of the mouthpiece 12, as later described.

All the parts are made of a resilient plastic material, such as polyethylene or any of the other thermoplastic or thermosetting plastics which are resiliently deformable and which have good sound producing or resonant properties.

It is of particular importance that the outer surface 24 of the holding tube 18 be tapered inwardly so that a snug and frictional fit is obtained in the horn 20 by insertion into the opening 26 in the inner end 29 of the horn 20. The outer end 28 is outwardly flared for amplification of the sound or tones.

The membrane or diaphragm 22 may be made of any thin, strong, inelastic material which will vibrate, such as cellophane (regenerated cellulose), "onion skin" or other strong thin paper, or, preferably, a type of sheet plastic that is substantially nonelastic and resonant.

In assembling the musical instrument of Figure 1, the diaphragm 22 is placed across the open inner end 16 of the mouthpiece 12 and is then inserted into the holding member 18. The holding member 18 is then inserted into the opening 26 in the small end 29 of the horn 20; although, the holding member 18 may previously have been inserted therein, the membrane 22 is thus frictionally gripped by contact with the outer wall of the inner end 16 of the mouthpiece 12 and the inner wall of the holding member 18. Also, as the mouthpiece is inserted into the holding member, as described, it is stretched tight across the open inner end 16 of the mouthpiece 12. The instrument may then be played by humming or singing either into the open end 14 of the mouthpiece 12 or the open end 28 of the horn 20. By holding the musical instrument adjacent or near the resonant diaphragm 22 and applying pressure, such as by squeezing, the resilient bodies of the various members will flex and thereby change the tension in the diaphragm 22 thereby changing the pitch and quality of the tone produced.

The musical instrument of the present invention is very flexible and the horn 20 may be interchanged for a variety of different sized and shaped horns to produce varying and different musical effects. Such a modification is illustrated in Figures 2 and 3 in which the letter "a" has been added to parts corresponding to those of Figure 1 for convenience of reference. Turning now to these figures, it will be noted that the holding member 18a is sufficiently long so that the inner end 29a of a smaller horn 20a may be inserted inside the holding member or tube 18a much in the same manner as that of the inner end 16 of the mouthpiece 12. Thus, the inner end 29a of the horn 20a is frictionally gripped inside the flexible and resiliently deformable holding member 18. The horn 20a is made of the same pliable or resilient plastic material as that of the elements of the musical instrument of Figure 1.

Thus, the musical instrument illustrated in Figures 2 and 3 may be played at either end and manipulated by squeezing the holding tube 18a to produce various musical sounds and effects as previously described.

If desired, the musical instrument may take the very simplified form illustrated in Figure 4. Turning now to this figure the letter "b" has been added to the corresponding numerals of Figure 1 to designate corresponding parts. It will be noted that the mouthpiece 12b is substantially tube-like as is the horn portion 20b. A shoulder 30 has been provided adjacent the inner end 16b of the mouthpiece 12b and an enlarged tube-like portion 32 has been provided on the inner end 29b to fit snugly about the tube extension or inner end 16b of the mouthpiece 12b. A resonant diaphragm 22b is secured about this extension and held firmly in place by means of the inter-

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fitting arrangement between the mouthpiece and the horn in the same manner as previously described.

The mouthpiece 12*b* and horn 20*b* are made of a resilient plastic material, as previously mentioned, and by squeezing the musical instrument adjacent or near the resonant diaphragm 22*b* a variety of musical sounds or tones is produced.

While a variety of musical sounds or tones is obtained by the very simple form of the invention illustrated in Figure 4, it is highly advantageous and a considerable improvement to provide the form of the invention illustrated in Figures 1-3, inclusive, as the parts are readily interchangeable and a variety of musical effects may be produced by changing the size and shape of the horn.

It should be noted that while reference has been made to a mouthpiece and a horn, the mouthpiece is in effect a horn also, but for convenience of reference the member placed against the mouth is referred to as the mouthpiece in the specification and claims.

A musical instrument constructed according to the invention produces a very beautiful sound or tone which is similar to those produced by a cello that is very melodic, pleasant and sweet. Also, a musical instrument constructed according to the invention is readily and easily manufactured at very low cost and the resonant diaphragms may be replaced by the same or ones of different material to produce varying musical sound effects. Also, by squeezing on the resiliently deformable instrument near or adjacent the resonant diaphragm, a variety of pleasing and musical tones or sounds of different pitch are produced.

The present invention, therefore, is well adapted to carry out the objects and attain the ends and advantages mentioned as well as others inherent therein. The present invention, therefore, is to be limited only by the spirit of the invention and the scope of the appended claims.

What is claimed is:

1. In a musical instrument, the combination of a mouthpiece formed of resiliently deformable plastic material, a horn formed of resiliently deformable plastic material, said mouthpiece and horn being capable of being manually squeezed into various shapes and returning to their original shapes when the squeezing pressure is removed, said mouthpiece and horn having interfitted portions at their inner ends frictionally holding said mouthpiece and horn in interfitted end to end relation, and a sheet-like imperforate resonant diaphragm disposed across the inner end of the mouthpiece and

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extending between and gripped by said interfitted portions sufficient to securely hold said diaphragm across the inner end of said mouthpiece, as aforesaid, whereby pressure applied to said musical instrument near or adjacent said diaphragm varies the tension of the diaphragm and thereby the pitch or quality of the tones of the musical instrument.

2. In a musical instrument, the combination of, a mouthpiece formed of resiliently deformable plastic material and having its inner end reduced in diameter, a horn formed of resiliently deformable plastic material having an outwardly flared open end, a generally tube-like holding member formed of resiliently deformable plastic material, said mouthpiece, horn and tube-like holding member being capable of being manually squeezed into various shapes and returning to their original shapes when the squeezing pressure is removed, the inner end of said mouthpiece extending into and being frictionally gripped by one end of said holding member and the other end of said holding member frictionally gripping the inner end of the horn, and a sheet-like imperforate resonant diaphragm disposed across the inner end of the mouthpiece and extending between and frictionally gripped by the inner wall of the holding member and the outer wall of the inner end of the mouthpiece sufficient to securely hold said diaphragm across the inner end of the mouthpiece, as aforesaid, whereby pressure applied to said musical instrument near or adjacent said diaphragm varies its tension and thereby the pitch or quality of the tones of the musical instrument.

3. The musical instrument of claim 2 where the inner end of the horn is of reduced diameter and snugly and frictionally fits in the other end of the holding member.

4. The musical instrument of claim 2 where the outer surface of the holding member is tapered inwardly toward the horn and where the inner end of the horn is of a diameter larger than that of the outer diameter of the holding member at the tapered end, the inner end of the horn being provided with an opening which snugly and frictionally receives the tapered end of said holding member.

References Cited in the file of this patent

UNITED STATES PATENTS

552,612	Frost	Jan. 7, 1896
637,261	Irving	Nov. 21, 1899
705,398	Gustine	July 22, 1902
986,139	Cather	Mar. 7, 1911
2,587,445	Derham	Feb. 26, 1952