Nov. 15, 1927. 1,649,722

H. W. MUNRO

VOICE DEVICE

Filed Jan. 10, 1925

Fig. 1

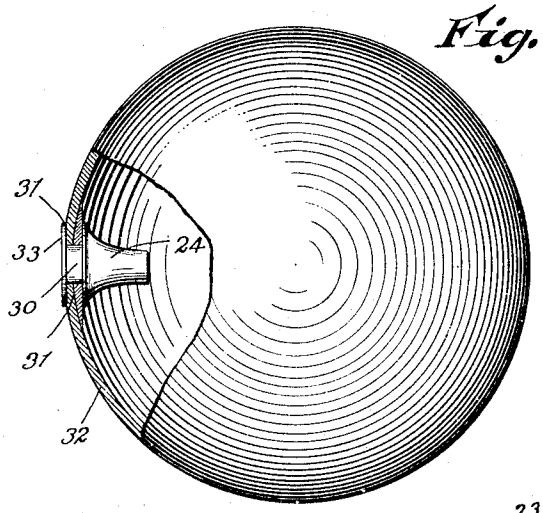


Fig. 2

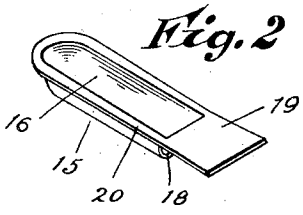


Fig. 3



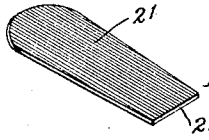


Fig. 6

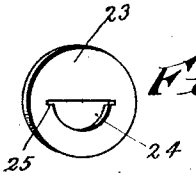


Fig. 5

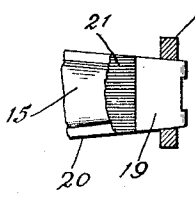
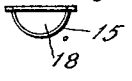


Fig. 7

Fig. 4



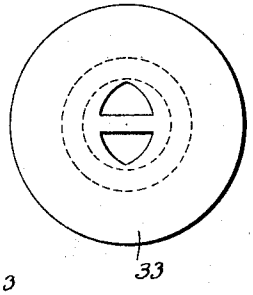
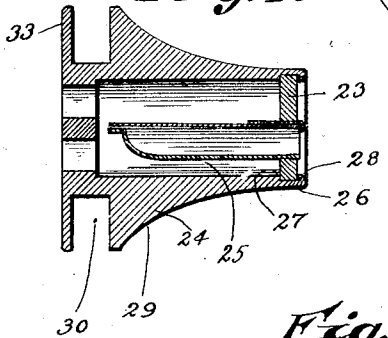


Fig. 11

Fig. 10



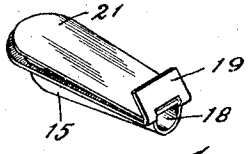
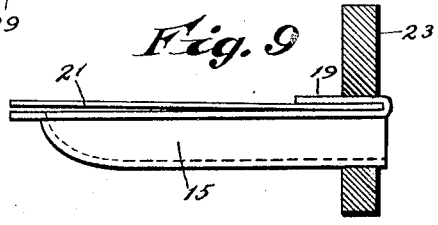


Fig. 8

Fig. 9



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UNITED STATES PATENT OFFICE.

HAROLD W. MUNRO, OF PROVIDENCE, RHODE ISLAND.

VOICE DEVICE.

Application filed January 10, 1925. Serial No. 1,691.

This invention relates to an improved construction of voice device or sound-producing instrument; and has for its object to provide such a device having a body portion with a reed mounted thereon, the whole to be suspended in a housing member, whereby a musical sound is produced by the passage of air therethrough.

A further object of this invention is the provision of a trough-shaped body member open on one side and one end, and having a reed member mounted to cover the open side of the body and a disc member having an opening therein into which one end of the body and the reed are forced to bind the whole together.

A further object of the invention is a provision of a housing member in which the whole device is mounted, the housing member being tapered in shape to facilitate its ready entrance into the walls of an elastic body such as a rubber ball and the like.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings.

Figure 1 is a side elevation of an elastic ball partly broken away and illustrating my improved voice device as mounted therein.

Figure 2 is a perspective view of the body portion of the voice device showing the foldable extending end member.

Figure 3 is a longitudinal section through the body member.

Figure 4 is a view looking at the open end of this body member.

Figure 5 is a perspective view of the disc member showing the opening for the reception of the voice device.

Figure 6 is a perspective view of the vibrating tongue.

Figure 7 is a top view illustrating a portion of the body member and a portion of the tongue member with the extension of the tongue member, both mounted in the disc member.

Figure 8 is a perspective view showing the tongue member in position on the body member and the extension of the body partially folded over the adjacent end of the tongue.

Figure 9 is an enlarged side elevation illustrating the extension portion of the body as folded over the adjacent end of the tongue and the fold as having been inserted into the disc shown in section for the purpose of binding the parts together.

Figure 10 is a central sectional side elevation of the housing member with my improved voice device suspended therein on the disc member.

Figure 11 is a front view of the housing member showing the openings in its outer end through which air passes into and out of the body in which the voice device is mounted.

It is found in the general construction and operation of voice devices of this character, which are adapted more particularly to be mounted in the wall of a rubber ball or other similar device that is adapted to be collapsed to force air through the voice device to produce a noise, of advantage to provide an extension at one end of the body member of the voice device, which may be folded over the adjacent end of the reed member to bind it to the body without the use of solder or other fastening and to also provide a disc member or other suitable device having an opening through it of a size and shape to receive and closely fit the open end of the body member, whereby when the folded extension member with its reed, is forced therein the whole is firmly bound together. It is also found of advantage to provide a housing member for this voice member, with tapering side walls to facilitate its ready entrance through the elastic wall of an elastic body such as that of a rubber ball, also to provide an annular groove in the enlarged end of this housing for the reception of the edge of the elastic wall which may be contracted therein to secure the housing firmly in the body; and the following is a detailed description of the present embodiment of my invention showing one construction by which these advantageous results may be accomplished:—

With reference to the drawings, 15 designates the body member of the voice device, which is preferably formed in somewhat of a trough shape having a hollow center portion 16 open on one side 17 and at one end 18. This open end is also provided with an extending foldable member 19 which is slightly dovetailed in shape and which is adapted to be folded back upon the flange 20 of the body portion, the taper of the extending

member 19 being substantially that of the sides of the body member to correspond therewith when folded in position.

In order to produce the desired sound when a draft of air passes through the trough member, I have formed a tongue member 21, preferably of thin metal, the same being adapted to fit over and cover the open side of the trough. Over the smaller end 22 of this tongue is folded the extension member 19 of the body for the purpose of binding this reed in position thereon, and in order to securely bind this folded member onto the reed member, I have provided a disc 23 or other suitable device, formed preferably of celluloid which is sufficiently soft to give or yield upon insertion of the reed but which may be formed of any suitable material which is adapted to be slightly compressed by insertion of the metal parts of the voice device thereinto.

In this disc, I have formed an opening 24 of a size to just receive the open end of the body member together with the folded extension which fits into the side slots 25 and when forced into this opening this extension member is firmly bound in folded position onto the reed to securely retain the same on its body member, the tapered sides of the extension and body member serving in a measure to determine the distance the body shall be inserted into the opening in the disc.

After the parts have been thus mounted, I mount this disc 23 with its voice device in a housing member 24, the same having a central bore 25 with a larger bore 26 at its end forming a shoulder 27 for the reception of this disc which when set therein against the shoulder 27 therein centralizes the device and prevents the reed from touching the side walls of the housing. This disc is bound in the housing against this shoulder by the turning of the outer edge 28 of the housing over onto the shoulder at the same time the outer surface of the housing is compressed onto the edge of the disc, which in turn slightly compresses the disc against the fold of the body member, to securely bind all these parts together.

It is found in practice of advantage in the inserting of the housing member into an opening in the wall of an elastic body such as a ball or the like, to taper the walls of the housing as at 29, from the entering end outwardly, and to provide an annular groove or recess 30 at the enlarged end of this housing into which the elastic edges 31 of the wall 32 of the ball, may be contracted to secure the housing firmly when positioned in the ball, leaving only a thin head 33 extending out beyond the surface of the ball.

It is to be understood that the effective vibrating length of the reed 21 may be varied to an appreciable extent by varying the length to which the binding member 19 extends over the end 22 of the reed whereby the pitch, due to the effective vibrating length of the reed, may be changed to produce different tones in the device.

My improved device is very simple and practical in construction and effective in its operation, the parts may be readily assembled and secured in position without the use of solder by simply clamping the fold of one member over that of the other and securing them all by inserting one end into the opening in another member.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. A voice device comprising a trough-shaped body member open at one end and one side, a vibrating reed on said body, and a member of a single piece of a material softer than either said body or reed having an opening shaped to fit and into which one end of both the reed and the body member are forced to bind the parts together adjacent one end of the device.

2. A voice device comprising a trough-shaped body member open at one side and one end and having a longitudinally extending portion at its open end of a width substantially that of said body, a reed member mounted on said body, said body extending portion being folded over lengthwise of said body to extend laterally across the full width of the reed to engage the same and secure one end portion of the reed thereto.

3. A voice device comprising a trough-shaped body member open at one side and one end and having a longitudinally extending portion at its open end, a reed member mounted on said body, said body extending portion being folded over lengthwise of said body to engage one end portion of the reed, and a binding member for causing said folded extension portion to grip and bind the reed.

4. A voice device comprising a trough-shaped body member open at one end and one side, a separate vibrating reed mounted on said body, a longitudinally-extending portion of the stock of said body being folded over the adjacent reed end, and a disc of a material softer than said reed having an opening into which said folded end of said body is inserted to bind said folded over portion against said reed.

5. A voice device comprising a trough-

shaped body member open at one end and one side and having a tapering longitudinal extension at its open end, a vibrating reed covering the open side of said body and over one end of which said extension is folded, and a member having an opening of a shape to receive the folded end of said body with its reed, the walls of said opening being caused to bind the folded extension against said reed and hold the whole together.

6. A voice device comprising a trough-shaped body member open at one end and one side and having a tapering longitudinal extension at its open end, a vibrating reed covering the open side of said body and over one end of which said extension is folded, and a disc having an opening of a shape to receive the folded end of said body with its reed, the walls of said opening being caused to bind the folded extension against the reed, the taper of said extension limiting the extent said body is inserted into said opening and said extension also serving to determine by its length the pitch of said device.

7. A voice device comprising a trough-shaped body member open at one end and one side, a vibrating reed on said body, and a disc member having an opening into which one end of both said reed and body member are mounted to bind them together, and a housing member for said voice device having different sized bores forming a shoulder to receive and support said disc against said shoulder.

8. A voice device comprising a trough-shaped body member open at one end and one side, a vibrating reed on said body, and a binding member having an opening into which one end of said reed and body are mounted to bind them together, and a housing member for said voice device having different sized bores forming a shoulder to receive and support said binding member against said shoulder, the outer edge of said larger bore being turned over said finding member to secure the same with its voice device therein firmly against said shoulder.

In testimony whereof I affix my signature.

HAROLD W. MUNRO.