

L. H. DEBS.
MUSICAL TOY.
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1,354,959.

Patented Oct. 5, 1920.

Fig. 1.

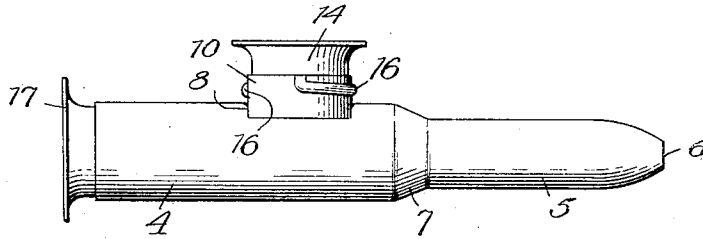


Fig. 2.

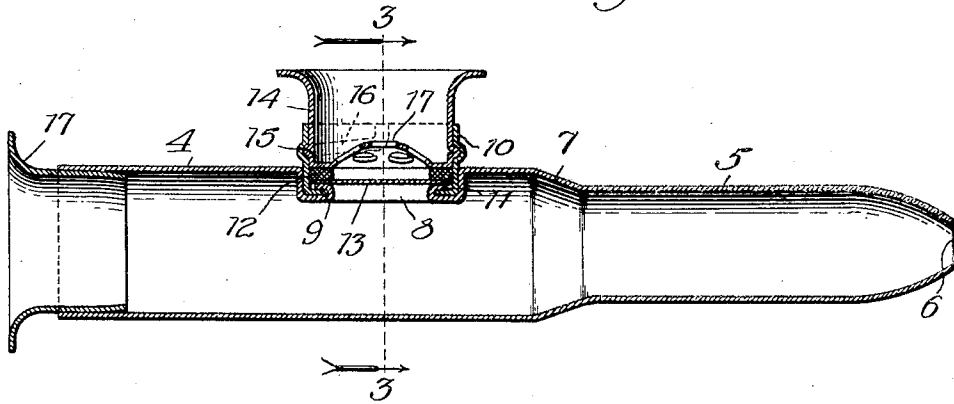
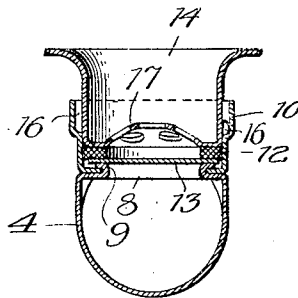


Fig. 3.



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UNITED STATES PATENT OFFICE.

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MUSICAL TOY.

1,354,959.

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To all whom it may concern:

Be it known that I, LOUIS H. DEBS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Musical Toys, of which the following is a specification.

My invention relates to an improvement in the type of musical toy popularly known as a "Kazoo"; and my primary object is to provide a construction of this device, whereby its sound-emitting function shall be enhanced and which shall render it structurally substantial and sanitary.

Like another and known toy in this class, the present device comprises, generally stated, a tube tapered toward one end and having a so-called trumpet-feature projecting at right-angles from its diametrically larger portion and containing a diaphragm at its base to be vibrated by the breath introduced into it at its larger end by the user with the latter's voice, whereby the maximum resultant air-pressure is directed against the diaphragm and tends to augment its sound-reproducing action. My improvement tends to materially augment this pressure at the diaphragm and to thereby increase its aforesaid action, and also to enhance the desirability of the device in the other particulars referred to.

In the accompanying drawing, Figure 1 shows my improved musical toy, in its normal dimensions, by a view in side elevation; Fig. 2 is an enlarged longitudinal vertical section of the same, and Fig. 3 is a section on line 3-3, Fig. 2.

The tubular body of generally cylindrical shape, formed preferably of sheet-metal and having an attractive surface-polish, has its rear section 4 of relatively large diameter and of about one-half the entire length of the body. The diameter of the forward section 5 is about two-thirds that of the section 4, this narrower section being tapered at its outer extremity to form the air-outlet opening 6 of about one-half the diameter of the section 5; and these two sections converge one into the other at a tapered neck 7. Near the neck a depression 8 is formed in the top of the wider body-section to extend into the path through the latter, as a constricting element, having its inner edge 9 clenched about the adjacent in-turned edge of a short tube 10 forming a member

of the trumpet. The return-bend portion 11 of the clenching medium affords a seat for the vibratory diaphragm 13 having a fiber ring 12 cemented to the edge-portion of its upper face; and a bell-mouthed trumpet-member 14 fits within the member 10 and has its inner end inturned to seat against the diaphragm-ring 12 and clamp the diaphragm against its seat. A pointed projection 15 on the member 14 engages a cam-like bayonet-groove 16 formed in the inner face of the member 10 to serve by turning the member 14 both to lock it in place and unlock it and in locking to tighten its seating seat against the diaphragm-reinforcing rim and thereby tauten or regulate the tension of the diaphragm.

The bell-shaped mouthpiece 17 of the device, shown to be inserted into its outer end, is removable and replaceable for sanitary reasons.

As will be understood, the progressive reduction in diameter of the successive sections of the tubular body terminating in the relatively small outlet 6 tends to induce back-pressure of the breath of the user in operating the device, and accumulation of the pressure at the diaphragm to so direct against it the vibratory action of the voice as to cause it to magnify the sounds it produces. This magnifying effect is greatly augmented, and this without in any way impairing or mutilating the sound of the user's voice, by the constricting effect of the depression 8 of my improvement projecting about the diaphragm into the path through the body-section 4, particularly when supplemented by the short tapered body-section 7. Moreover, the wedging and locking actions of the trumpet-member 14 and resultant tautening or tension-regulating effect on the diaphragm add materially to the effectiveness of the device for modulating the reproduced sounds.

Another and important feature of my improvement is a dome-like perforated shield 17 as a feature of the trumpet-device. This shield is preferably formed as the concavo-convex base of the bell-mouthed trumpet-member 14, which is best formed entire of sheet-metal. Its function is, besides that of protecting the diaphragm from impairment in the ordinary hard usage to which this form of toy is subjected, to form an arched air-space over the diaphragm, and

induce a megaphone effect on the sounds re-
 produced by the vibrations of the dia-
 phragm due to the vibration of the air in
 such air-space, which being more or less
 5 confined, tends to reverberate and thus aug-
 ment the resounding action of the dia-
 phragm thereby supplementing the sound-
 magnifying action of the features of con-
 struction hereinbefore described for the
 10 sound-enhancing purpose.

I claim:

1. A musical toy comprising a tubular
 body having a section of relatively large
 diameter and a section of smaller diameter
 15 tapered at its outer end to an air-outlet
 opening therein, said sections having a ta-
 pered-neck connection converging them one
 into the other, said first-named section
 having a constricting top-depression con-
 20 taining an opening having an inturned edge,
 a short tube having an inturned edge and
 over which the edge of the top-depression is
 clenched and a trumpet fitting within said
 tube and having a diaphragm vibratorily
 25 confined therein at said opening.

2. A musical toy comprising a tubular
 body having a section of relatively large
 diameter and a section of smaller diameter
 tapered at its outer end to an air-outlet
 30 opening therein, said sections having a ta-
 pered-neck connection converging them one
 into the other, said first-named section hav-
 ing a constricting top-depression contain-
 ing an opening, and a trumpet formed of
 35 wedgedly interlocking members one of
 which is held by the inturned edge of said
 opening, and having a diaphragm vibra-
 torily confined between them.

3. A musical toy comprising a tubular
 40 body having a section of relatively large
 diameter and a section of smaller diameter
 tapered at its outer end to an air-outlet
 opening therein, said sections having a ta-
 pered-neck connection converging them one
 45 into the other, said first-named section hav-
 ing a constricting top-depression contain-
 ing an opening and having an inturned edge
 forming a diaphragm-seat, and a trumpet
 formed of wedgedly interlocking members
 50 having a diaphragm vibratorily confined
 between them and against said seat.

4. A musical toy comprising a tubular
 body having a section of relatively large
 diameter provided with a removable bell-
 55 shaped mouthpiece and a section of smaller
 diameter tapered at its outer end to an air-
 outlet opening therein, said sections having
 a tapered-neck connection converging them
 one into the other, said first-named section

having a constricting top-depression con- 60
 taining an opening having an inturned
 edge, and a trumpet having a diaphragm
 vibratorily confined therein at said opening.

5. A musical toy comprising a tubular
 body having a section of relatively large 65
 diameter provided with a constricting top-
 depression containing an opening and hav-
 ing an inturned edge forming a diaphragm-
 seat, and a section of smaller diameter ta-
 pered at its outer end to an air-outlet open- 70
 ing therein, said sections having a tapered-
 neck connection converging them one into
 the other, and a trumpet formed of a tu-
 bular member secured to said seat and held
 in place by the inturned edge thereof and 75
 provided with a cam-groove, a tubular
 member fitting said first-named member
 and provided with a projection to engage
 said groove, and a diaphragm confined be- 80
 tween said members on said seat.

6. A musical toy comprising a tubular
 body having a section of relatively large
 diameter and a section of smaller diameter
 tapered at its outer end to an air-outlet
 opening therein, said sections having a ta- 85
 pered-neck connection converging them one
 into the other, said first-named section hav-
 ing a constricting top-depression contain-
 ing an opening and a trumpet having a
 diaphragm vibratorily confined therein at 90
 said opening, and a perforated dome-like
 shield in the trumpet covering the dia-
 phragm.

7. A musical toy comprising a tubular
 body having a section of relatively large 95
 diameter and a section of smaller diameter
 tapered at its outer end to an air-outlet
 opening therein, said sections having a ta-
 pered-neck connection, said first-named sec-
 tion having a constricting top-depression 100
 containing an opening, an trumpet formed
 of a pair of members having a diaphragm
 vibratorily confined between them, and a
 perforated dome-like shield at the base of
 the outer trumpet-member and covering the 105
 diaphragm.

8. A mechanical toy comprising a tubular
 body having a section of relatively large
 diameter and a section of smaller diameter
 tapered at its outer end to an air-outlet 110
 opening therein, said first-named section
 containing an opening, and a trumpet hav-
 ing a diaphragm vibratorily confined there-
 in at said opening, and a perforated dome-
 like shield in the trumpet covering the dia- 115
 phragm.

LOUIS H. DEBS.