

July 4, 1950

J. THOMPSON
MUSICAL HUMMING INSTRUMENT

2,513,600

Filed May 25, 1945

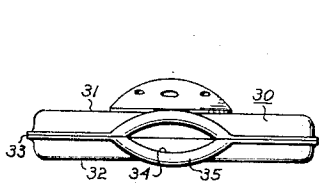


Fig. 3

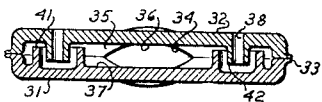


Fig. 4

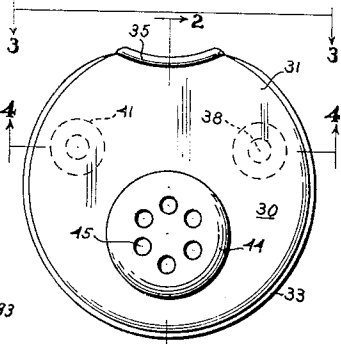


Fig. 1

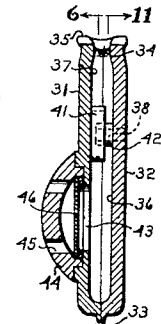


Fig. 2

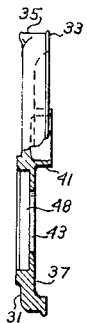


Fig. 5

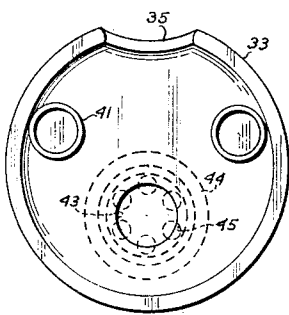


Fig. 6

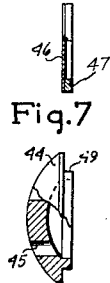


Fig. 7

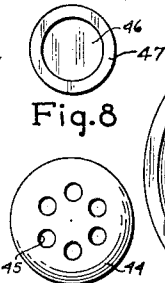


Fig. 8

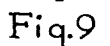


Fig. 9

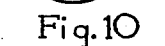


Fig. 10

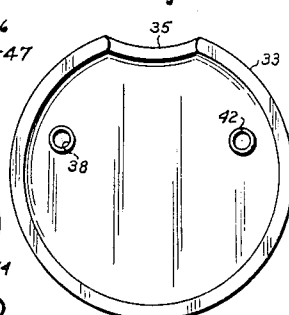


Fig. 11

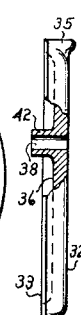


Fig. 12

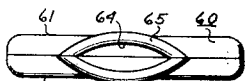


Fig. 15



Fig. 16

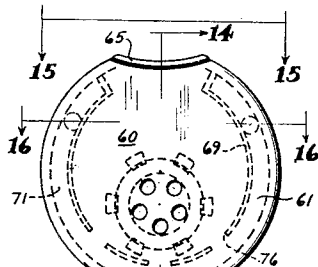


Fig. 13

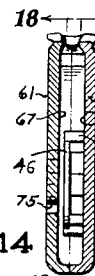


Fig. 14

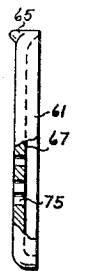


Fig. 17

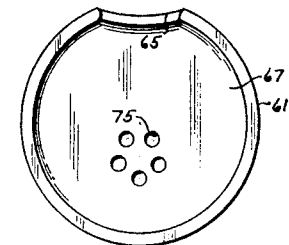


Fig. 18

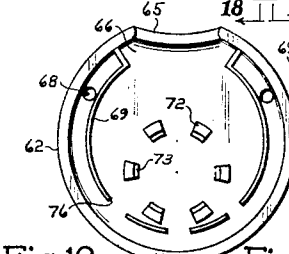


Fig. 19

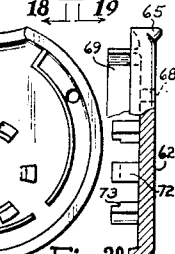


Fig. 20

INVENTOR.
Josephus Thompson

BY
Morton S. Rockman

UNITED STATES PATENT OFFICE

2,513,600

MUSICAL HUMMING INSTRUMENT

Josephus Thompson, Covington, Ohio, assignor
of one-third to Grossman Music Company,
Cleveland, Ohio, a partnership

Application May 25, 1945, Serial No. 595,666

6 Claims. (Cl. 46—182)

1

This invention relates to musical instruments or toys and particularly to such devices which, by humming into, may be made to imitate or reproduce sounds of other musical instruments.

The primary object of this invention is to provide a small, compact instrument of the kind stated, and which may be easily made and assembled out of relatively few parts.

Another object is to provide such device with a baffle plate which increases and enhances its sonority and resonance.

A further object is to construct such instrument with a removable diaphragm so that the instrument body may be easily cleansed.

Still another object is to provide such instrument with a circuitous and restricted air passage.

These and other objects of the invention will become apparent from a reading of the following description and claims, together with the accompanying drawing, in which like parts are referred to and indicated by like reference characters and wherein:

Figures of the preferred form

Figure 1 is a top plan view of the preferred form of the instrument;

Figure 2 is a cross-sectional view thereof, taken along the line and in the direction of the arrows 2—2 of the Figure 1;

Figure 3 is a front elevation thereof;

Figure 4 is a cross-sectional view thereof, taken along the line and in the direction of the arrows 4—4 of the Figure 1;

Figure 5 is a side view of the top portion thereof with parts broken away to show construction;

Figure 6 is an inside or sectional view of the instrument, taken substantially along the line and in the direction of the arrows 6—6 of the Figure 2;

Figure 7 is a side view of a diaphragm used in the device;

Figure 8 is a bottom view thereof;

Figure 9 is a side view of the vibrant member cap or part that fits over and retains the diaphragm;

Figure 10 is a top view thereof;

Figure 11 is an inside or sectional view of the instrument, taken substantially along the line and in the direction of the arrows 11—11 of the Figure 2; and

Figure 12 is a side view of the bottom portion of the instrument, with parts broken away to show construction.

2

Figures of a modified form

Figure 13 is a top plan view of a modified form of the invention;

Figure 14 is a cross-sectional view of the instrument, taken along the line and in the direction of the arrows 14—14 of the Figure 13;

Figure 15 is a front end view thereof;

Figure 16 is a cross-sectional view thereof, taken along the line and in the direction of the arrows 16—16 of the Figure 13;

Figure 17 is a side view of the top portion of the instrument, with parts broken away to show construction;

Figure 18 is an inside or sectional view, taken substantially along the line and in the direction of the arrows 18—18 of the Figure 14;

Figure 19 is an inside or sectional view, taken substantially along the line and in the direction of the arrows 19—19 of the Figure 14; and

Figure 20 is a side view of the bottom portion of the instrument, with parts thereof broken away to show construction.

Preferred form

The preferred form of the invention consists of a resonance box or chamber, broadly indicated by the reference character 30, and which has a removable vibratory member mounted thereon.

The bottom portion 32 of the chamber is a flat, circular piece of plastic material which has an inwardly turned brim portion therearound. It has two small spaced holes or egresses 38 extending therethrough which are about three-sixteenths of an inch in diameter. Small tubular portions 42 extend inward from the flat inside wall 36 of the bottom portion, around the opening 38, as is clearly shown in the Figures 11 and 12.

The top portion 31 is shaped somewhat like the bottom portion 32 and has a similar inwardly turned flange which abuts the aforesaid flange on the bottom portion 32. The two portions 31 and 32 are cemented or otherwise joined together at the bead 33 to form an air-tight joint thereat.

One side of the abutting flange portions is open to form the ingress or orifice 34. The body or joined portions 31 and 32 of the instrument are shaped to form a mouthpiece, somewhat as indicated by the reference character 35 at the said orifice.

The inner wall 37 which is parallel to the other inside wall 36 has a cup 41 therein which partially and loosely fits over the short tube 42,

somewhat as shown in the Figures 2 and 4. Air blown in the chamber 30 at the ingress or opening 34 can escape only through the egress 38. However, before passing through the egress 38, it has to pass along the outside of the short tube 42 and into the cup 41. A free flow of air is restricted and as a result, a slight air pressure is maintained inside the chamber immediately in back of the diaphragm 46.

The top portion 31 has a round hole 43 there-through which is about one-half inch in diameter. The portion 31 is recessed around the hole 43, as is indicated by the reference character 48 in the Figure 5. This recess 48 forms a seat for the hereinafter described vibrant member.

The vibrant member consists of a diaphragm and a removable cap. The diaphragm in turn consists of a small circular piece of thin membranous material 46 securely mounted on the fiber ring 47. The diaphragm is inserted in the recess 48 of the top portion 31 and so that the open membrane squarely fits over the hole 43.

The cap 44 is round and has several small vents or air holes 45 therein. It also has a flange 49 therearound which tightly fits into the recess 48 over the edge of the diaphragm, as shown in the Figure 2. The cap 44 is hollowed inside and permits the diaphragm to expand and vibrate therein. It may be removed if desired to cleanse the instrument or to replace the thin diaphragm if necessary.

Modified Form

The modified form of instrument closely resembles the preferred form in appearance. Outwardly it looks the same, except that the modified form does not have the prominent removable cap 44 thereon.

The bottom portion 62 of the instrument has an inwardly or upwardly turned flange there-around. It has two spaced vents or egress openings 63 and has supports 72 for retaining the diaphragm member 46 and 47. The supports 72 are simply small blocks of plastic material, each of which has an inwardly facing shoulder 73. The supports are arranged so that all the shoulders form a circular mount for the diaphragm member.

The top portion 61 of the modified form also has an inwardly or downwardly turned flange, the edge of which is cemented to the aforesaid upwardly turned flange. One side of the joined portions is open as at 64 and is similarly provided with a suitable mouthpiece 65. It has several small vents 75 therethrough which are over the diaphragm 46 mounted on the supports 72.

The space inside the box or chamber 60 is partitioned off by a wall 69. This wall 69 extends between the two facing inside walls 66 and 67 and forms an arcuate passage 71 inside the box. The partition has openings 76 through which air may flow and is so placed that the egress openings 68 are in the passage 71. Air admitted to the box at the ingress 64 escapes by way of the openings 76 in the partition 69, through the arcuate channels or passages 71 and out through either or both of the egresses 68. This circuitous passage similarly restricts the free flow of air and tends to build up a pressure inside the chamber.

When playing the preferred form of instrument, for example, the mouthpiece 35 is placed to the lips and a tune or sound is hummed into the chamber. The sound waves set the diaphragm 46 in vibration. These vibrations are transmitted to the flat wall 36 which acts as a

baffle and are then amplified and made resonant. Normal breath will pass through the instrument and out through the egress opening 38 as aforesated.

Modifications of tone may be obtained by either closing one of the egress openings 38 with a finger or by partially closing both openings simultaneously. By closing and opening the egress vents as just stated, the air pressure in the chamber is increased or decreased, as desired. The diaphragm 46 stretches or contracts in accordance with the pressure against its inner surface. The vibrations thereof caused by the humming sound produced by the player are varied accordingly so that a wide range and wide variety of tones or sounds may be produced from original oral sounds. The modified form of the instrument is played in the same manner.

Having thus disclosed the preferred forms of the instrument, it is to be understood that the invention as described and illustrated is not to be regarded in a limited sense, since there may be other forms or modifications thereof which also come within the scope of the appended claims.

I claim:

1. A musical humming instrument, comprising in combination, a chamber member having an opening therein for oral sound waves, and two circular flat spaced wall portions, one of the said wall portions having a diaphragm therein and the other of the said wall portions being flat and forming a baffle for the diaphragm, and a circuitous air passage in the chamber member.

2. A musical humming instrument, comprising in combination, a resonance box including two spaced wall portions and having a mouthpiece forming an opening for oral sound waves and an ingress to a circuitous air passage, one of the said wall portions having the egress for the said air passage, and a diaphragm mounted in one of the wall portions capable of being vibrated by the said sound waves, the other of the said wall portions forming a baffle for the said diaphragm.

3. A musical humming instrument, comprising in combination, a resonance box including two circular flat spaced wall portions and having a mouthpiece therebetween forming an opening for oral sound waves and an ingress to an air passage therethrough, one of the said wall portions having the egress for the said air passage, a plurality of circuitous air passages in the said box between the said ingress and egress restricting the flow of air through the said air passage, and a diaphragm mounted in one of the wall portions capable of being vibrated by the said sound waves, the other of the said wall portions forming a baffle for the said diaphragm.

4. A musical humming instrument, comprising in combination, a resonance box including two circular flat spaced wall portions and having a mouthpiece therebetween forming an opening for oral sound waves and an ingress to an air passage therethrough, one of the said wall portions having the egress for the said air passage and having a tubular passage portion therearound, a cup member receiving the said tubular passage portion and being spaced therefrom mounted on the other of the said wall portions, and a diaphragm mounted in one of the wall portions capable of being vibrated by the said sound waves, the other of the said wall portions forming a baffle for the said diaphragm.

5

5. A musical humming instrument, comprising in combination, a resonance box including two circular flat spaced wall portions and having a mouthpiece therebetween forming an opening for oral sound waves and an ingress to an air passage therethrough, one of the said wall portions having the egress for the said air passage, a partition member mounted between the spaced wall portions forming a curved portion of the circuitous air passage between the said ingress and egress and restricting the flow of air through the said air passage, and a vibrant member including a diaphragm and spaced supports therefor mounted on one of the wall portions and capable of being affected by the said sound waves, the said wall portion being flat and forming a baffle for the sound waves emanating from the said diaphragm.

6. A musical humming instrument comprising in combination, a resonance box including two spaced walls and having a mouthpiece therebetween, two spaced partitions between the said spaced walls forming two circuitous air passages, one of the said spaced walls having an opening for each of the air passages, and a vi-

5

10

15

20

25

6

brant member mounted on one of the said spaced walls between the spaced circuitous air passages.

JOSEPHUS THOMPSON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
209,274	Montagne	Oct. 22, 1878
270,543	Frost	Jan. 9, 1883
392,504	Elmendorf et al.	Nov. 6, 1888
550,431	Adler et al.	Nov. 26, 1895
655,109	Pitt	July 31, 1900
700,986	Smith	May 27, 1902
1,014,961	Fawkes	Jan. 16, 1912
2,158,445	Weiss	May 16, 1939
2,452,658	Horne	Nov. 2, 1948

FOREIGN PATENTS

Number	Country	Date
327,036	Germany	Oct. 8, 1920