

July 3, 1951

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2,559,124

MUSICAL INSTRUMENT FOR VOCAL AMPLIFICATIONS

Filed July 26, 1947

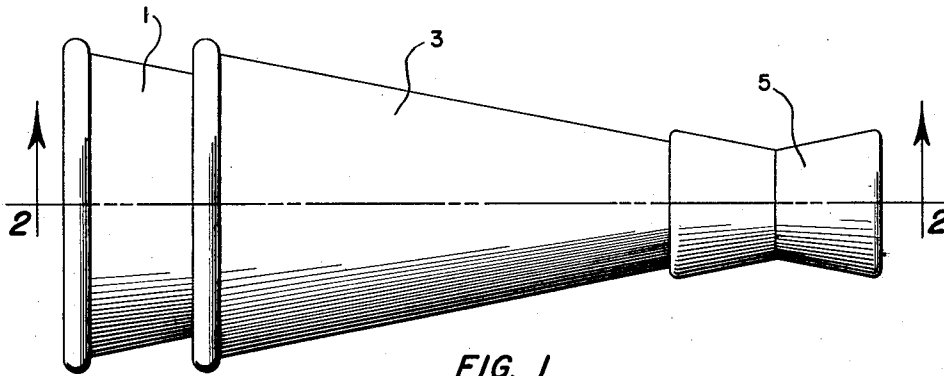


FIG. 1

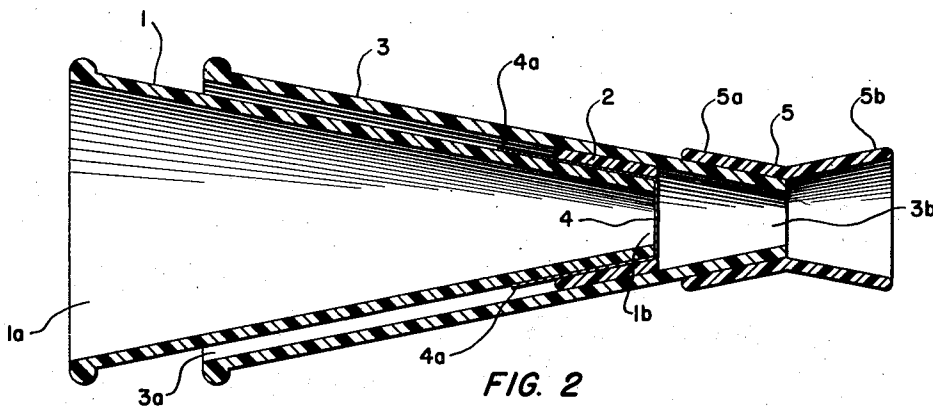


FIG. 2

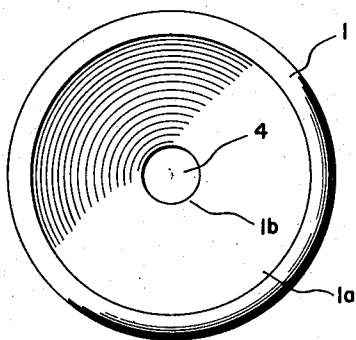


FIG. 3

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# UNITED STATES PATENT OFFICE

2,559,124

## MUSICAL INSTRUMENT FOR VOCAL AMPLIFICATIONS

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Application July 26, 1947, Serial No. 763,911

5 Claims. (Cl. 46—182)

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My invention relates to a musical instrument for vocal amplification, more particularly of the resonant type adapted to be played by vibration produced with a person's voice, and the objects of my invention are:

First, to provide a musical instrument of this class which provides entertainment for persons of different ages without a detailed knowledge of music;

Second, to provide a musical instrument of this class which produces a pleasing realistic imitation of different musical instruments;

Third, to provide a musical instrument of this class in which the mouthpiece thereof directs vibration toward the diaphragm and may be vented outwardly of said diaphragm for reducing the pressurization of a person's breath against and around said diaphragm;

Fourth, to provide a musical instrument of this class in which the diaphragm thereof may be quickly and easily replaced by any suitable tissue paper, or the like;

Fifth, to provide a musical instrument of this class which is so arranged that it may be artistically muted when it is desired to mimic various instruments such as the trumpet and cornet, or the like;

Sixth, to provide a musical instrument of this class in which a diaphragm is associated with a converging mouthpiece which may be provided with clearance around said diaphragm at will for venting the sound which is amplified outwardly of the diaphragm so that the reproduction may be amplified to the desired amplitude;

Seventh, to provide a musical instrument of this class in which amplified reproduction by the diaphragm therein may be readily muted so that imitation of various musical instruments may be made not only musically accurate but equal in volume as well, and

Eighth, to provide a musical instrument of this class which is very simple and economical in construction efficient in operation and which will not readily deteriorate or get out of order.

With these and other objects in view, as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawing and to the characters of reference thereon forming a part of this application in which:

Figure 1 is a side elevational view of my musical instrument, Fig. 2 is a longitudinal sectional

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view taken from the line 2—2 of Fig. 1, and Fig. 3 is an end view of the amplifier thereof.

Similar characters of reference refer to similar parts and portions throughout the several views of the drawing.

The amplifier 1, diaphragm ring 2, vent cone 3, diaphragm 4 and the mouthpiece 5 constitute the principal parts and portions of my musical instrument.

The amplifier 1 is a cone shaped member having a large open end 1a at its one end and a reduced open end 1b at its opposite end. Fitted over the reduced open end 1b as shown in Fig. 2 is the diaphragm 4. This diaphragm 4 may be made of any suitable resonant material such as tissue paper or the like and is folded downwardly over the outer side of the amplifier 1 at its outer edges 4a and the diaphragm ring 2 is placed in surrounding relationship with the skirt of said diaphragm outwardly of the reduced end portion near the opening 1b of the amplifier 1 and frictional engagement of the diaphragm ring 2 maintains said diaphragm 4 in secure engaged relationship with the outer side of said amplifier 1.

The vent cone 3 as shown in Fig. 2 is substantially the same shape and form as the amplifier 1 and is fitted over the outer side of the diaphragm ring 2. This vent cone 3 is provided with an enlarged open end 3a and a reduced open end 3b surrounding which is the mouthpiece 5 having oppositely diverging conical portions 5a and 5b. The frusto-conical portion 5a fits around the outer side of the vent cone 3 and the frusto-conical portion 5b provides a converging mouthpiece directed inwardly toward the open end 3b of the vent cone 3.

The operation of my musical instrument is substantially as follows:

A person may place his lips at the inner side of the mouthpiece 5 at the open end of the frusto-conical portion 5b thereof. Then the person may hum a tune, the vibration of which is transferred to the diaphragm 4 which reacts in a pleasant manner and amplitude of the reproduction may be accomplished by moving the amplifier 1 outwardly of the vent cone 3 which permits the breath of the operator to pass around the diaphragm ring 2. The diverging relationship of the amplifier 1 and vent cone 3 provides for amplification of the sound waves passing therefrom through the open ends 1a and 3a thereof. The open end 1a of the amplifier 1 may be muted by the hand, and this in combination with the movable relationship of the vent

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cone 3 relatively to the amplifier 1 provides for numerous effects which contribute to the accurate reproduction of music and imitation of various musical instruments.

Though I have shown and described a particular construction, combination and arrangement of parts and portions, I do not wish to be limited to this particular construction, combination and arrangement, but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

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

1. An amplifying cone having a diverging form provided with open opposite ends, a diaphragm fitted over the smaller open end of said amplifier, a ring surrounding said diaphragm and holding the outer edges thereof adjacent the outer side of said amplifier, a vent cone surrounding said amplifier and said ring movable longitudinally thereof whereby venting outwardly of said ring is accomplished.

2. An amplifying cone having a diverging form provided with open opposite ends, a diaphragm fitted over the smaller open end of said amplifier, a ring surrounding said diaphragm and holding the outer edges thereof adjacent the outer side of said amplifier, a vent cone surrounding said amplifier and said ring movable longitudinally thereof whereby venting outwardly of said ring is accomplished, and a mouthpiece on the extended end of said vent cone in spaced relationship with said diaphragm.

3. An amplifying cone having a diverging form provided with open opposite ends, a diaphragm fitted over the smaller open end of said amplifier, a ring surrounding said diaphragm and holding the outer edges thereof adjacent the outer side of said amplifier, a vent cone surrounding said amplifier and said ring movable longitudinally thereof whereby venting outwardly of said ring

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is accomplished, and a mouthpiece on the extended end of said vent cone in spaced relationship with said diaphragm, said mouthpiece having opposed conical diverging sections, one of which is placed over the end of said vent cone.

4. In a musical instrument of the class described, the combination of a frusto-conical hollow amplifier, a diaphragm positioned over the small end thereof, a surrounding member holding said diaphragm at its extending portions around said amplifier, a second frusto-conical hollow member surrounding said diaphragm ring and said amplifier, extending slightly beyond the end of said amplifier adjacent said diaphragm.

5. In a musical instrument of the class described, the combination of a frusto-conical hollow amplifier, a diaphragm positioned over the small end thereof, a surrounding member holding said diaphragm at its extending portions around said amplifier, a second frusto-conical hollow member surrounding said diaphragm ring and said amplifier, extending slightly beyond the end of said amplifier adjacent said diaphragm, and a mouthpiece secured on said second frusto-conical hollow having an inwardly converging portion.

LESLIE W. KERNER.

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