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COMPLETE SPECIFICATION.

Improvements in and relating to Resonators for Sound
Reproducing Machines.

I, ADOLF RICHTER, of Rudolstadt, Thuringia, Germany, Manufacturer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

5 This invention relates to resonators for sound reproducing machines in which the resonating properties of the box or case are utilised in combination with the sound trumpet or horn.

The object of this invention is to provide an improved resonator which will improve, purify and intensify the reproduced sounds in a more satisfactory
10 manner than has been possible hitherto.

In connection with existing forms of sound reproducing machines it has been frequently proposed to utilise for this purpose the resonance of the casing or box, the sound trumpet or horn being arranged in said casing in various ways and the driving motor in an adjacent compartment. Further for this purpose
15 cone-shaped passages were formed in the casing by providing suitable partitions or intermediate walls in the same. The resonator trumpet has also been supported within the resonance box by means of vertical rods fixed beneath the trumpet.

The invention consists in rigidly connecting a wooden sound trumpet or horn
20 with longitudinal ribs to the resonance box so that the two vibrate together and providing sounding rods or tubes which connect the longitudinal ribs together and, projecting beyond the same, are connected to the resonance box, the trumpet or horn being of suitable shape and suitably arranged within the resonance box for this purpose.

25 Two different forms of the invention are shown by way of example in the accompanying drawing, in which:—

Figure 1 shows one form of the improved resonator applied to a sound reproducing machine, and

30 Figure 2 is a similar view of a modified arrangement of the improved resonator.

In the example shown in both figures 1 denotes a resonance box so constructed from wood suitable for sounding boards that the vibrations transmitted to the same may uniformly distribute themselves over the sounding walls in a similar manner to the distribution of the vibrations over the tops of violin-boxes.

35 The sound trumpet or horn 2 is made from wooden hollow knee-shaped bends 6 and tubular connecting pieces 7 as well as from sounding boards 3 which form bent surfaces fastened together by ribs 4 which are held in position by sounding bars or tubes 5. The horn 2 is rigidly connected at several points with the resonance box so that the box and the horn vibrate together.

40 The sounding bars or sounding tubes 5 extend beyond the ribs and bear on or are connected to the sounding walls of the box. By these means and arrangements the vibrations of the sound waves or the vibrations of the sound

[Price 8d.]



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conducting wall are transmitted to the sounding walls of the resonance box. On the hollow tubular connecting piece 7 there is so arranged a sound arm 8 hollowed out from one solid piece of wood that it may be swung round into any required position. A different sound arm or tube may, however, also be employed, if this should be required. 5

The sound trumpet or horn is preferably elliptical in cross-section. The same, however, may also be constructed in any other suitable form.

By providing intermediate sounding boards or partitions 9, the resonance of the box is increased and the interior of the resonator divided into several compartments. 10

This form of construction is of particular advantage in connection with sound reproducing machines using large horns.

Figs. 1 and 2 show some of the possible forms of construction of the improved resonator for sound reproducing machines. In the compartment 10 the above described sound conduit and the adjacent parts are arranged, whereas the adjacent compartment 10^a serves as playing chamber or as motor chamber, or both. 15

In Fig. 1 the motor is accommodated in the chamber 10^a and drives the turn table 13 through any suitable gearing.

In the form shown in Fig. 2, the sound conduit which is arranged in the resonance box is bent back in such a manner that the bent portion is \cap -shaped, it then passes in the double-curved form shewn through the partition 9 into the side compartment where is attached the tubular connection-piece 7 with the hollow sound arm 8. 20

The side compartment is divided by a partition 12 into two compartments, the lower one 13 serving for accommodating the motor and the upper compartment 14 serving as playing chamber. By arranging the resonance sound conduit laterally in relation to the motor and the playing chamber a saving in space is effected on the one hand, whereas on the other hand vibrations produced by the working of the driving mechanism are prevented from being transmitted to any considerable extent to the sounding boards or to the sound conduit, where they would set up discords. This form of construction further renders it possible to use casings of pleasing forms. 25 30

From the above it will be seen that not only the sound conduit but also the driving mechanism is accommodated in the improved resonator. 35

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

A resonator for sound reproducing machines in which a wooden sound trumpet or horn with longitudinal ribs is rigidly connected with the resonance box so that the two vibrate together and in which the longitudinal ribs of the trumpet or horn are connected with one another by sounding rods or tubes which extend beyond the ribs and are connected with the resonance box, the trumpet or horn being of suitable shape and arranged suitably within the resonance box for this purpose. 40 45

Dated this 11th day of October, 1912.

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Fig. 1.

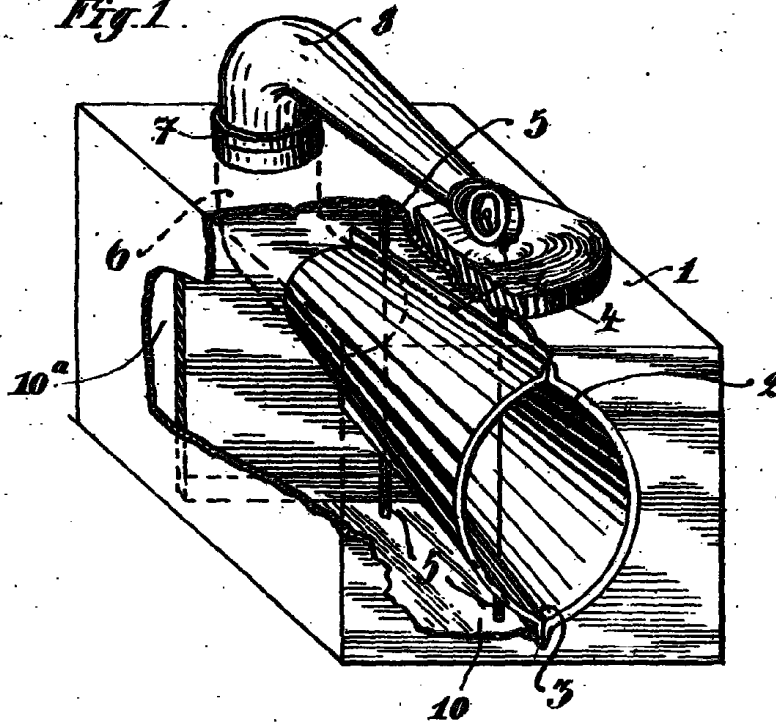
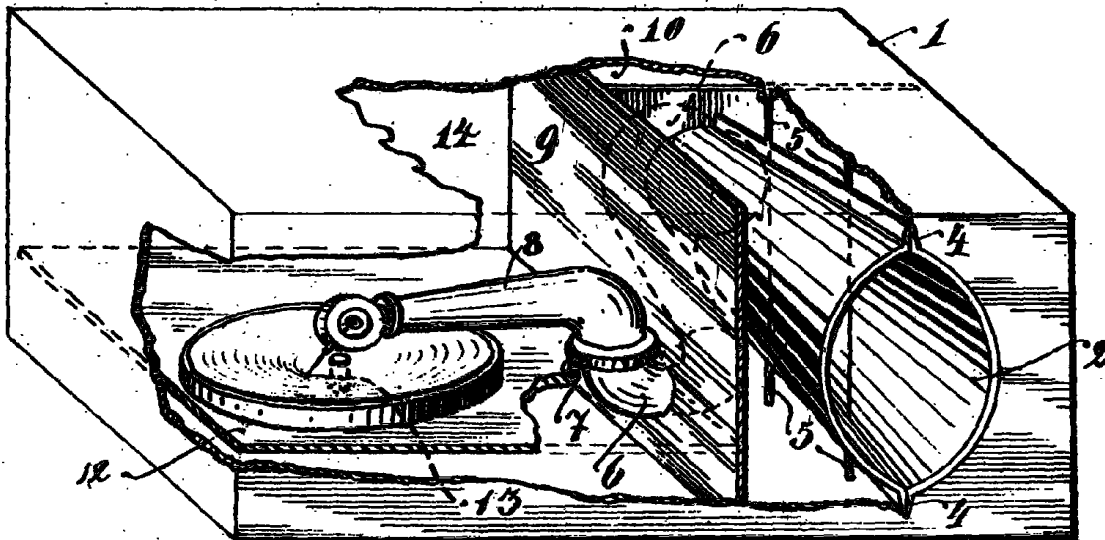


Fig. 2.



[This Drawing is a reproduction of the Original on a reduced scale.]

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