

G. L. STEVENSON.
HORN.

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997,870.

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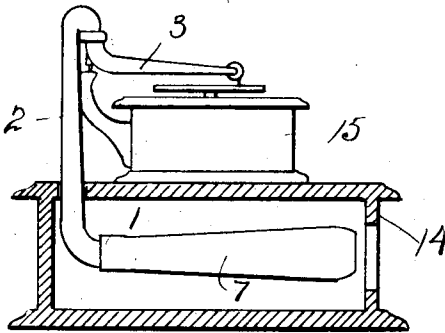


Fig. 1.

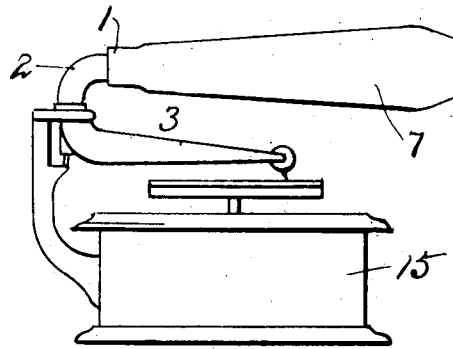


Fig. 2.

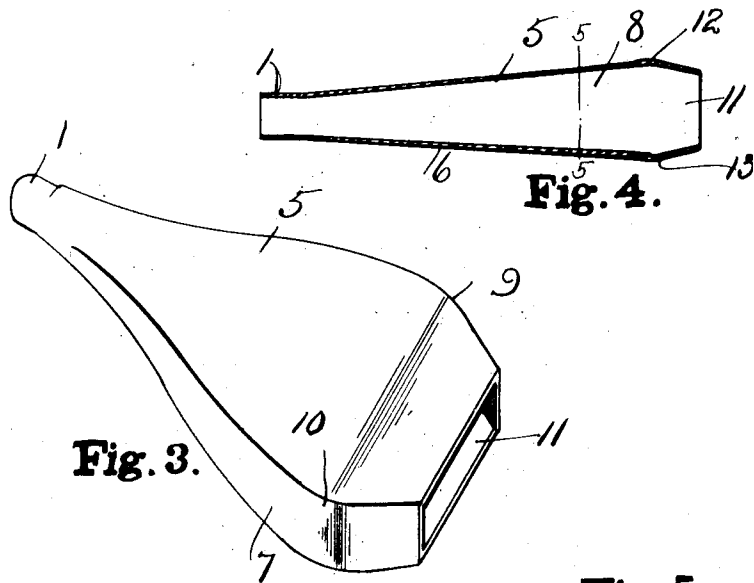


Fig. 3.

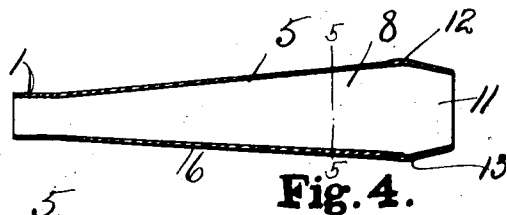


Fig. 4.

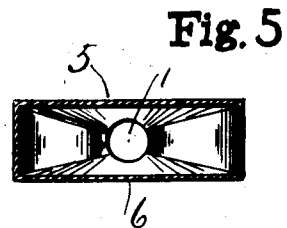


Fig. 5.

WITNESSES

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HORN.

997,870.

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To all whom it may concern:

Be it known that I, GEORGE L. STEVENSON, a citizen of the United States, residing at the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Horns, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a sound amplifying device, commonly known as a horn, the same being more particularly adapted for use on sound reproducing instruments such as phonographs or the like.

The object of the invention is to construct a horn having unusual acoustic properties whereby the sound is not only amplified but where the phonetic principles of clear, articulate, yet soft and mellow sound are produced, in contrary distinction to the effect of the ordinary flaring or bell-mouthed horn which merely enlarges the sound without refining it.

A further object of the invention is to provide a horn that in addition to being simple and inexpensive in construction takes up but comparatively little room when used either inside or outside of a phonograph supporting cabinet, or upon being stored away when not in use.

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—shows my improved horn as mounted on the inside of a cabinet or box on which the phonograph is supported. Fig. 2—illustrates the horn as applied to the ordinary inexpensive phonograph instrument. Fig. 3—is an enlarged perspective view of my improved horn showing the walls of the same turned inward at its mouth end forming a contracted opening instead of being turned outward as is the usual custom. Fig. 4—is a central longitudinal section through this horn. Fig. 5—is a transverse sectional view of the horn on line 5—5 of Fig. 4.

In carrying out my invention I have provided an improved horn which is preferably constructed with a contracted neck portion 1 adapted to be connected by a tube 2, or other suitable means to the needle carrying or sound transmitting arm 3. This neck por-

tion is then gradually enlarged into the body portion substantially rectangular in cross section, whose top and bottom plates 5 and 6 are broad and substantially flat and whose sides 7 and 8 are comparatively narrow and set substantially at right angles to said top and bottom sections, said top, bottom and sides forming, in effect, sounding boards. The sides of the body after diverging or rounding outward for about three-quarters of the length of the body then converge or turn inward as at 9 and 10 toward the open end forming a contracted mouth or opening 11 through which the sound is emitted. The top and bottom sections 5 and 6 after spreading apart slightly from the neck portion 1 may also converge or draw rather abruptly inward as at 12 and 13 making a still further contraction to the mouth 11. This last contraction, however, is not absolutely essential as these plates may be straight completely to the mouth if desired. This horn may be made of any desired or suitable material but I preferably construct the same like a violin body of thin boards or plates of wood, and join the sections together by glue or by other suitable means. It is found in practice, outside of the acoustic properties of this style of horn, that it is very inexpensive in construction as compared with the flaring bell-shaped horn, also that it takes up very much less room than the old style horn and can be packed or stored away in much less space. This horn is particularly adapted to be used within a cabinet or box 14 and connected to the musical instrument 15 by a tube, if desired, as illustrated in Fig. 1, or it may be connected on the outside and above the instrument itself, as illustrated in Fig. 2, or in any other suitable or convenient way.

My improved construction or form of horn, has an enlarged thin flat tubular sound amplifying body substantially rectangular in cross section, as illustrated in Fig. 3, in which there is a small neck portion through which the sound enters and a somewhat contracted mouth or opening at the opposite end through which the sound is emitted, thus being in form and effect similar to the human throat, mouth cavity and opening through the lips between the teeth, the converging portions 9, 10, 12 and 13 being similar in effect to the roof of the mouth, gums and teeth forming

the sounding-board for reverberating, amplifying and mellowing the sound waves while passing through the horn.

The shape of the horn as best shown in Fig. 3 provides wide upper and lower plates 5 and 6 which, especially when made of thin wood, enable a resonance to be obtained which can be compared with that of a violin. This resonance cannot be obtained from a plurality of narrow strips. Therefore the said shape of the horn not only mellows the sound waves in the manner hereinbefore mentioned as comparable with the mellowing effect produced upon the human voice by the shape of the mouth, but also attains the amplifying and resonant effect obtained from broad, thin, single sheets of wood.

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

1. A horn having relatively wide and flat

upper and lower plates forming sounding boards, and relatively narrow sides connecting said plates and also serving as sounding boards, said plates and sides diverging from the inlet end of said horn, the outlet ends of said sides being turned inwardly to form a contracted mouth.

2. A horn having relatively wide and flat upper and lower plates forming sounding boards, and relatively narrow sides connecting said plates and also serving as sounding boards, said plates and sides diverging from the inlet end of said horn, the outlet ends of said sides and said top and bottom plates being turned inwardly to form a contracted mouth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE L. STEVENSON.

Witnesses:

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EDWIN B. LINCOLN.