Oct. 23, 1928. 1,689,009

S. H. BYRNS

HORN FOR LOUD SPEAKERS

Filed Aug. 15, 1927

Fig. 1.

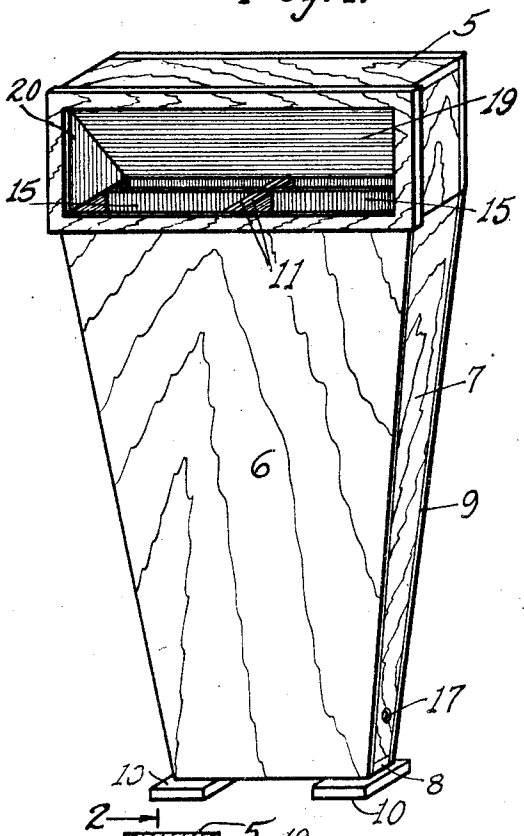
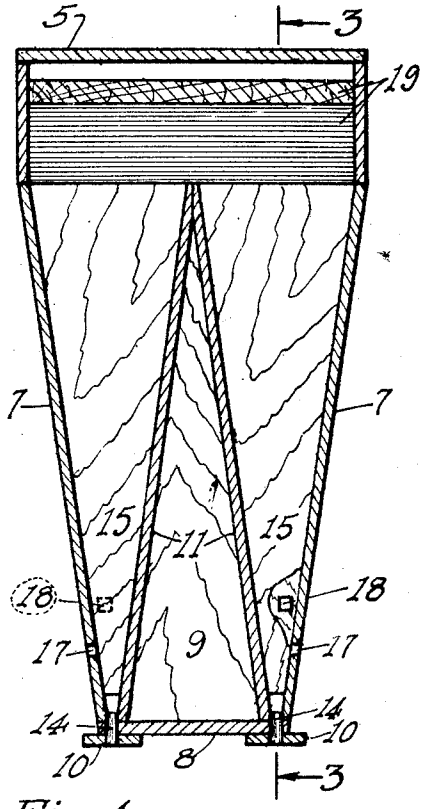


Fig. 2.



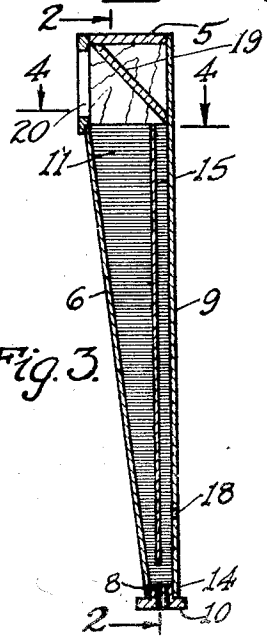
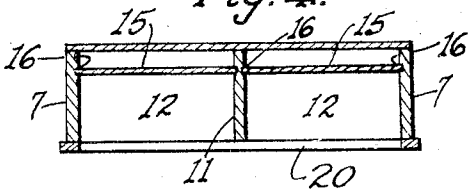


Fig. 3.

Fig. 4.



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Patented Oct. 23, 1928. 1,689,009

UNITED STATES PATENT OFFICE.

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HORN FOR LOUD SPEAKERS.

Application filed August 15, 1927. Serial No. 213,024.

The present invention relates to loud speaker devices, and aims to provide a novel and improved form of speaker adapted to be used in connection with loud speaker units, such as those of the radio type, the improved construction being of a nature adapted to produce a more accurate and clearer amplification of the sound as transmitted from the loud speaker unit.

In carrying out my invention, I have devised a horn construction entirely of wood material and comprising one or more horn members or passages adapted to be fitted with loud speaker units, and including also a sound board element or partition within the horn chamber, whereby a fuller and clearer transmission and amplification of the sound are attained.

With this general object in view, the invention will now be described by reference to the accompanying drawing illustrating a form of construction designed to embody the invention, after which those features and combinations deemed to be novel will be particularly set forth and claimed.

In the drawing:—

Figure 1 is a perspective view showing a horn construction embodying the invention;

Figure 2 is a longitudinal sectional view, representing a section on the line II—II of Figure 3;

Figure 3 is a longitudinal section taken on the line III—III of Figure 2; and

Figure 4 is a transverse section taken on the line IV—IV of Figure 3.

Referring now to the drawing in detail, this illustrates my improved construction as comprising a hollow casing or shell constructed entirely of wood material, such as spruce or other suitable wood fiber material, this shell or casing being of substantially rectangular form at its head 5, below which the body portion of the horn tapers gradually downward at its front 6 and sides 7 to the base 8, the back 9 of said body portion lying in the same vertical plane as the back of the head portion 5, as shown in Figure 3. The base portion 8 is provided with a foot piece or block 10 at each of the bottom corners.

Inside the body portion of the horn is an upwardly tapered partition structure comprising a pair of wood partition members 11 converging upward from the bottom corners, thus forming a pair of upwardly flaring horn passages or chambers 12, to which receiving openings 14 are provided at the bottom corners through the blocks 10 and base 8 and leading into the lower ends of said passages or chambers 12, as clearly illustrated in Figures 2 and 3.

Each of the horn chambers or passages is divided by a transverse partition member 15 of suitable wood material serving as a sound board, each of said partition members being supported within suitable grooves 16 formed in the partition member 11 and side 7 of the corresponding horn chamber or passage 12, and extending parallel to the back 9 and terminating slightly above the lower end of the chamber or passage 12, just short of the corresponding receiving opening 14. Near its lower end each of the sides 7 is provided with a vent opening 17, and the back 9 is also provided with a vent opening 18 into the lower end of each of the horn passages or chambers 12.

Within the space inside the head 5 is arranged an oblique wood partition 19, extending upwardly and forwardly over the outlets from the horn passages or chambers 12, in position to direct the sound out through the main outlet opening 20 of the device, forming the front side of the head 5, as illustrated in Figures 1 and 2.

The structure above described is designed to be mounted by any suitable suspension means within a cabinet (not shown) with the outlet opening 20 registering in communication with a similar, and preferably screened, opening in the front face of the cabinet. Preferably also the suspension of the horn structure within the cabinet is effected by as few points of connection with the interior of the cabinet as possible in order to permit full freedom of vibration of the horn structure in reproducing, transmitting and amplifying the sound, in conjunction with the loud speaker units. These loud speaker units are not illustrated, but are designed to be connected with the openings or passages 14 at the lower end of the horn chambers or passages 12, in any convenient or preferred manner. With this construction, being entirely of wood material, and having the vent openings 17 and 18 for allowing the free circulation of air through the horn passages, and including the sound board elements or partitions 15, I find that I am able to secure perfectly pure, clear tones and in full volumes, approaching practically ideal reproduction of the transmitted sounds in every way.

While I have illustrated and described

what I now regard as the preferred mode of embodiment of my improvements, I desire to reserve the right to make all such changes or modifications which may fairly fall within the scope of the appended claim.

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

A horn construction for loud speakers comprising a casing constructed entirely of wood material and having a partition structure dividing said casing into a pair of tapered horn chambers having receiving openings for loud speaker units, a sheet of relatively thin wood material mounted longitudinally within each of said horn chambers in spaced relation to the front and rear walls thereof, and an outlet compartment communicating with the outer or discharge ends of both of said horn chambers.

In witness whereof I hereunto affix my signature.

STEPHEN H. BYRNS.