May 30, 1939. H. R. PAUSIN 2,160,166

LOUDSPEAKER

Filed Dec. 22, 1937

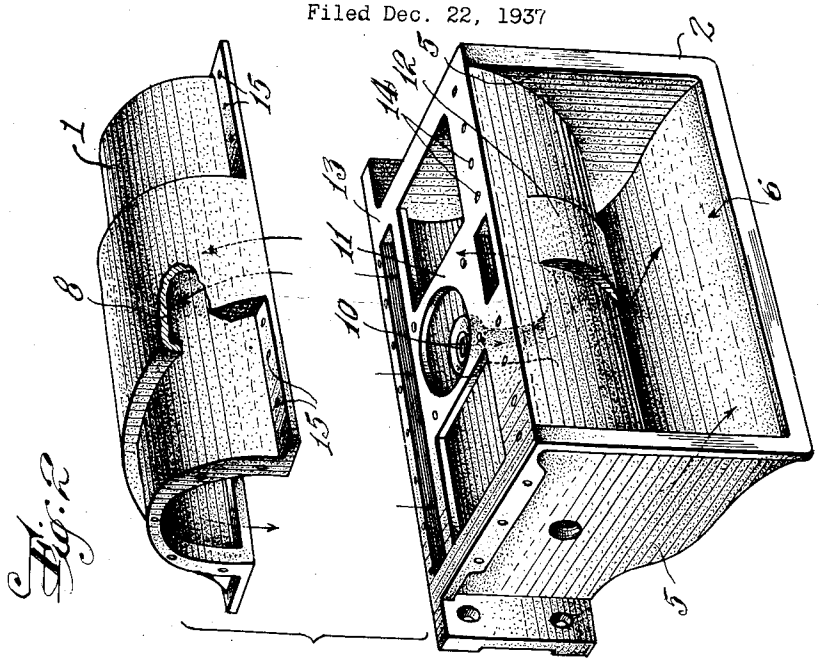


Fig. 2

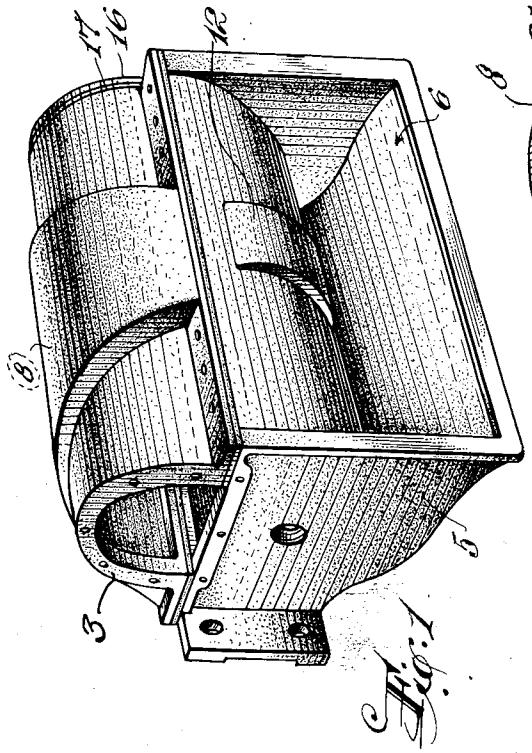


Fig. 1

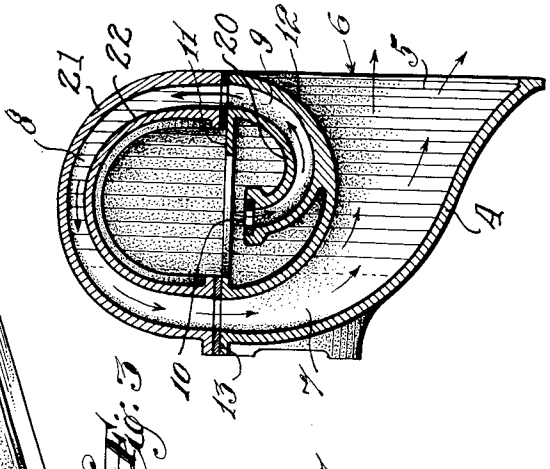


Fig. 3

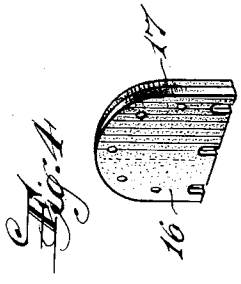


Fig. 4

INVENTOR
Hugo R. Pausin,
BY Frank E. Fischer
ATTORNEY

Patented May 30, 1939 2,160,166

UNITED STATES PATENT OFFICE

2,160,166

LOUDSPEAKER

Hugo R. Pausin, Maplewood, N. J.

Application December 22, 1937, Serial No. 181,196

1 Claim. (Cl. 181—27)

This invention relates to loud speakers and sound amplifying devices; and more particularly to improvements in the structure and the manner of making horns or housings used in loud speaking devices.

It is well known that the logarithmic type of loud speaker is very effective due to the long air column available; but heretofore, loud speakers of such a type have been objectionable due to the difficulty in making them and the size thereof. In order to get the long air column by means of a path following approximately a logarithmic curve, for convenience in manufacture, such devices have been heretofore built up of a number of parts which have been soldered or welded together. This method of building up a horn or loud speaker has required considerable time and the machining of parts, which greatly increased the cost of manufacture.

In accordance with my invention, the building up of a loud speaker as heretofore has been done is obviated; and the loud speaker is formed complete from two castings, which obviously greatly decreases the cost of manufacture.

It is, therefore, an object of this invention, to provide a housing or horn for a loud speaker of substantially the logarithmic type which can be cast of metal and in two parts, thus enabling easy access to the interior thereof for repairs or adjustments. Such a type of loud speaker made of metal is well adapted for use on ships and various places out-of-doors where the speaker will be subjected to weather conditions.

A further object is the provision of a horn or housing for a loud speaker device which is waterproof, and not affected by climatic conditions. In accordance with my invention, the horn or housing is cast in metal in two parts which are tightly secured together so that the sound producing unit enclosed in the housing is not subjected to moisture or affected by changeable weather conditions.

The simplicity of the structure renders all parts thereof readily and conveniently available for repair and greatly facilitates the manufacture thereof.

These and other advantageous objects, which will later appear, are accomplished by the simple and practical construction and arrangement of parts hereinafter described and exhibited in the accompanying drawing, forming part hereof, and in which:

Fig. 1 is a perspective view of the horn or housing for a loud speaker embodying my invention,

Fig. 2 is a perspective view, exploded, showing in detail, parts of the housing,

Fig. 3 is a sectional view of a loud speaker housing, and

Fig. 4 is a perspective view of an end plate for the housing.

Referring to the drawing, in Fig. 2 the device is shown to comprise an upper section 1 and a lower section 2, which are metal castings, the metal being preferably aluminum, although other metals may be used without departing from the spirit of the invention.

The lower section has flat side walls 5 and a wide mouth 6 which communicates with a curved channel 7, (see Fig. 3), which communicates with a curved channel 8 in the upper section. The lower section has a further channel 9 communicating with the channel 8, the channel 9 terminating in an opening 10 directly below a bridge 11 adapted to support a sound reproducing device (not shown) of any of the standard types.

The lower section has a curved lower wall 4 and a curved intermediate wall 12, spaced from each other and forming the channel 7. The lower section also has a curved upper wall 20 spaced from the intermediate wall 12 to form the channel 9.

The lower section is a single casting, with the channel 9 formed therein. Similarly the upper section is a single casting with a curved upper wall 21 and a curved lower wall 22, spaced from each other to form the channel 8. In order to make the device moistureproof and prevent the seepage of air between the joints, gaskets are placed upon the flanges 13, and the upper section is secured to the lower section by means of bolts or screws passing through the holes 14 and 15. The sides 3 of the upper section are sealed tight by side plates 16 having rubber gaskets 17, through which pass screws or similar securing means.

While the device is shown to be divided longitudinally to provide two sections, that is, an upper and a lower section, it is obvious that it can be made into two sections, by dividing it vertically to provide two lateral sections.

From the above description it will be seen that there has been provided a simple, durable and water-proof housing or horn for a loud speaker device, which can be readily and conveniently manufactured and assembled.

The sound producing units, not shown, often require adjustments especially when used in public address systems out-of-doors. With the device herein described, the sound producing unit

is easily and conveniently available for adjusting purposes, it being only necessary to remove the bolts from the holes 14 and 15 to remove the upper section. The device is well adapted for use on ships, at airports, etc., and as a permanent installation indoors or outdoors under all types of weather conditions.

The foregoing disclosure is to be regarded as descriptive and illustrative only, and not as restrictive or limitative of the invention, of which, obviously, embodiments may be constructed, including many modifications, without departing from the spirit and scope of the invention, herein set forth and denoted in the appended claim.

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

In a loud speaker device, a housing comprising an upper section having sides, a lower section having flat side walls and a relatively wide rectangular mouth, said lower section having a curved intermediate wall and a curved lower wall spaced from each other to provide a curved channel communicating with the mouth, the upper section being substantially semi-cylindrical and having a curved upper wall and a curved lower wall spaced from each other to form a curved channel in the upper section communicating with the channel in the lower section, said lower section having a curved upper wall spaced from the intermediate wall to form a narrow channel communicating with the channel in the upper section, removable flat plates closing the sides of the upper section, means for tightly securing the upper section to the lower section to provide a moistureproof structure, and a bridge on the lower section positioned adjacent and above the mouth of said narrow channel for supporting a sound reproducing unit.

HUGO R. PAUSIN.