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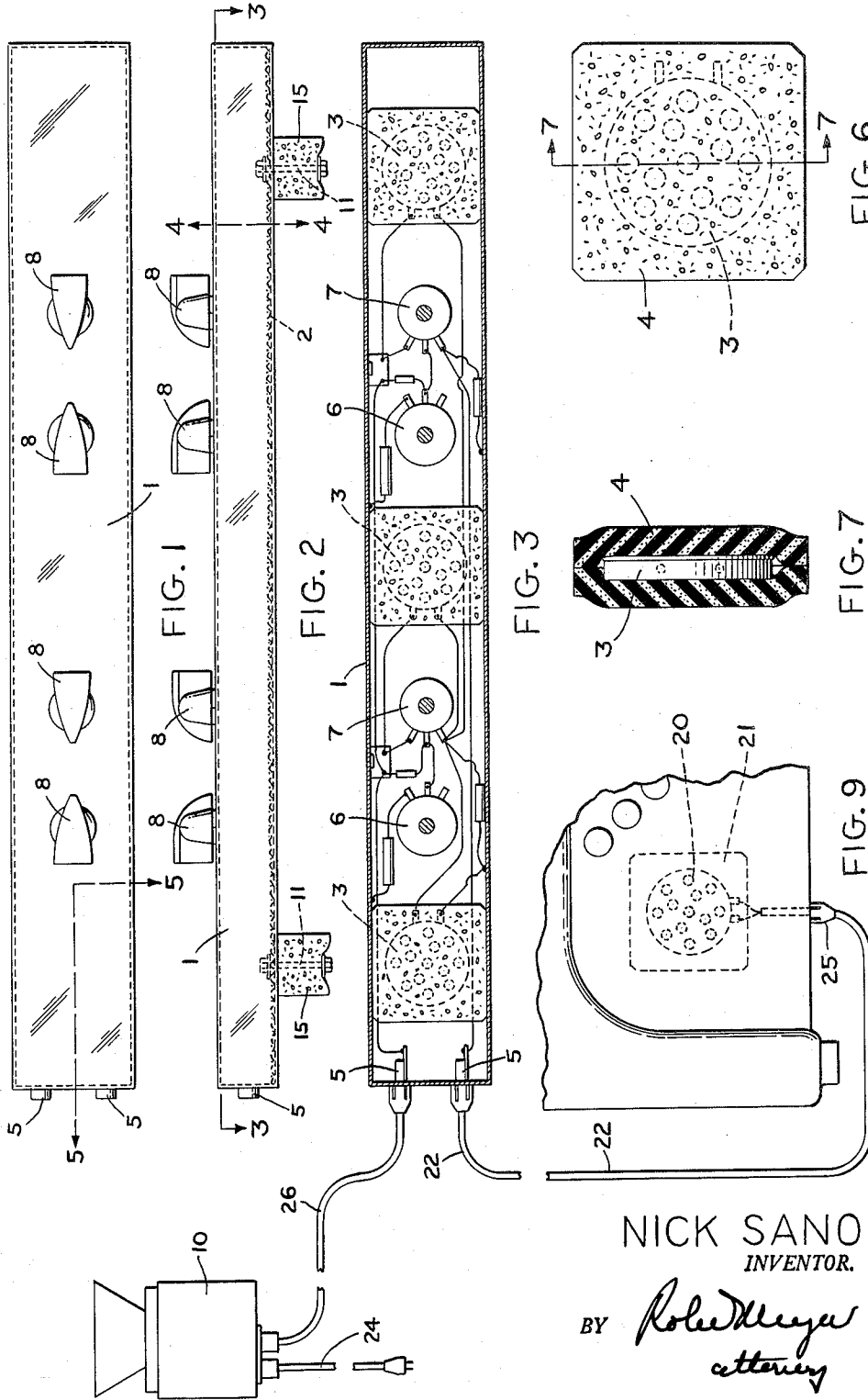
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SOUND AMPLIFYING DEVICE FOR USE ON MUSICAL INSTRUMENTS

Filed Sept. 20, 1951

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

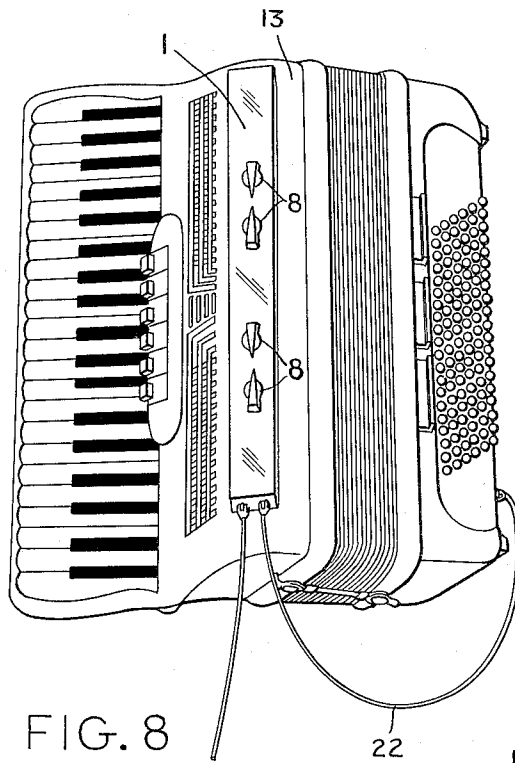


FIG. 8

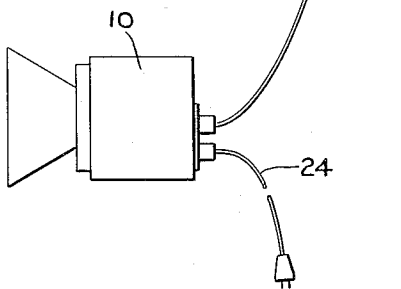


FIG. 4

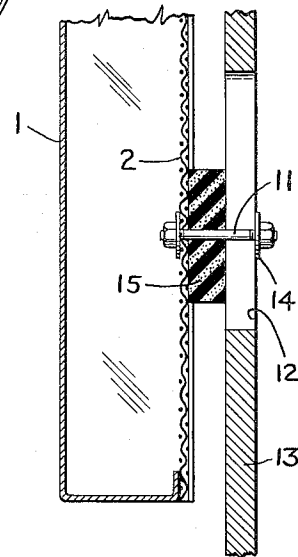


FIG. 5

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SOUND AMPLIFYING DEVICE FOR USE ON
MUSICAL INSTRUMENTSNick Sano, Newark, N. J., assignor to Sano Corporation,
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2 Claims. (Cl. 84-1.04)

This invention relates to a sound amplifying device for use in connection with various musical instruments such as accordions, guitars, pianos, and the like for increasing the volume of sounds produced by the instrument.

At times it is desirable to accentuate or increase the volume of sound produced by various musical instruments, such as at certain points in an orchestra rendition, in solo renditions by one instrument in large auditoriums or places where there is extraneous noises etc., and an object of the present invention is to provide a sound amplifying device which may be attached directly to the instrument without requiring alteration of the instrument or with the requiring of only minor alterations of the instrument, which device will pick up the tones produced by the instrument and amplify them without distortion or addition of undesirable extraneous sounds. The sound amplifying device will permit amplification of certain tones produced by the instrument over other tones produced thereby, such as for instance accentuation of bass tones or treble tones one over the other, as well as permit control of tone and/or volume of the music produced.

With these and other objects in view, as may appear from the accompanying specification, the invention consists of various features of construction and combination of parts, which will be first described in connection with the accompanying drawings, showing a sound amplifying device for use on musical instruments of a preferred form embodying the invention, and the features forming the invention will be specifically pointed out in the claims.

In the drawings:

Figure 1 is a top plan of the sound amplifying device.

Figure 2 is a side elevation of the sound amplifying device.

Figure 3 is a horizontal section through the sound amplifying device taken on the line 3-3 of Figure 2.

Figure 4 is a detailed cross section through the sound amplifying device taken on the line 4-4 of Figure 2.

Figure 5 is a fragmentary longitudinal section through the sound amplifying device taken on the line 5-5 of Figure 1 and showing it attached to a fragment of a musical instrument.

Figure 6 is a detailed plan of a microphone and the manner of mounting it as used in the sound amplifying device.

Figure 7 is a cross section on the line 7-7 of Figure 6.

Figure 8 is a perspective view showing the sound amplifying device applied to an accordion.

Figure 9 is a detail view of a part of an accordion showing a part of the sound amplifying device applied thereto.

Referring more particularly to the drawings, the improved sound amplifying device includes an elongated housing 1 which may be made of thin, lightweight sheet metal or other material and it has one side thereof open to facilitate the assembly and repair of the sound amplifying

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means which is located in the housing. The open side of the housing 1 is closed by a sliding perforated closure sheet 2 which is provided with sufficient perforations to permit the passage of sound therethrough and yet provide sufficient rigidity to allow attachment of the sound amplifying device to a musical instrument by means of this removable perforated closure tube as will be hereinafter referred to.

Microphones of any approved type, indicated at 3, are positioned at suitably spaced points along the length of the elongated housing 1 and each of these microphones is embedded in a housing formed of a porous flexible vibration dampening material such as sponge rubber. The sponge rubber housings 4 are shaped and of such size that they will fit snugly within the housing 1 and they may, if desired, be attached to the housing 1 by suitable adhesive to prevent accidental displacement of the vibration dampening housings 4 and the microphones 3. Electrical switches of the usual rheostat type are placed in the housing 1 and connected in an electrical circuit with the microphones 3 and with telephone plugs 5 carried at one end of the housing 1. Two of the electrical switches, namely: switches 6 and 7, are provided in each set; the switches 6 for controlling the volume of the sound, and the switches 7 for controlling the tone of the sound. As shown in Figure 2 of the drawings, one set of these switches 6 and 7 are connected to two of the microphones 3 and a second set of the switches is connected to a third microphone 3 so as to permit independent control of volume and tone of sound transmitted through the sound amplifying device from different parts of a musical instrument to which the device is attached. While the circuit between the switches 6 and 7 and the microphones 3 are depicted in the drawings they are not described herein because such circuits are known and this circuit does not form part of the present invention. It is to be understood that the sets of switches 6 and 7 may be connected at any suitable arrangement with any suitable number of microphones within the housing, without departing from the spirit of the present invention, depending upon the arrangement of controls desired. Manually operated buttons 8 are connected to the respective switches and are positioned exteriorly of the housing 1 to permit easy and ready operation of the various switches, as desired. One of the telephone plugs 5 is connected to a power input line indicated at 9 and the other of the telephone plugs is connected to an amplifier 10 of any approved type which may be purchased upon the open market.

The removable perforated cover 2 has a plurality of bolts or analogous attaching devices 11 connected thereto at suitably spaced points which are adapted to extend through openings 12 in a part 13 of the musical instrument to which the sound amplifying device is to be attached, the firm connection being provided by means of suitable nuts and washers 14 threaded upon the bolts 11. Each of the bolts or attaching devices 11 has a pad 15 of sponge rubber or analogous porous, flexible vibration dampening material mounted thereon so that when the housing 1 is attached to the musical instrument in a relative vibration sheet the housing and the musical instrument will be dampened to prevent any extraneous undesirable sounds being picked up by the sound amplifying device and transmitted through the amplifier 10.

Figures 8 and 9 of the drawings show the sound amplifying device connected to an accordion for which it is particularly adaptable. It is well known that accordions have openings in their housings to permit and facilitate the escape of the sounds or music produced by the playing of the accordion and in attaching the sound amplifying device to an accordion the bolts 11 are inserted through certain of these sound escape slots and

the nuts and washers 14 on the bolts are tightened to firmly attach the housing 1 to the accordion, as clearly shown in Figure 8 of the drawings. Accordions have a treble tone side and a bass tone side and to provide for the proper picking up of the tones from the bass side of the accordion, where the tones are naturally stronger than on the treble side, a microphone 20 which is enclosed in a vibration dampening pad 21 of the same construction of the pads or housings 4, is mounted within the accordion housing at a suitable point adjacent the bass reeds. The microphone 20 is connected by suitable electric current conducting cable 22 to one of the telephone plugs 5, namely: to the plug 5 which is not connected to the amplifier 10. The microphone 20 is shown in Figure 3 of the drawings connected in electrical circuit through a pair of switches 6 and 7 back through the plug 5 to the amplifier 10. The amplifier 10 has a connection 24 with the power input. The conducting wire 22 is detachably connected to the microphone 20 by any suitable type of make-and-break connector as shown at 25, and the wires 22 and 26, the latter of which leads from the amplifying device to the amplifier 10, are detachably connected to the plugs 5 so that all of these wires may be disconnected for facilitating the transportation of the accordion independently of the amplifier 10.

While the sound amplifying device is illustrated in the drawings as applied to an accordion, it is to be understood that it may be applied to any other type of musical instrument suitable for receiving it so as to permit amplification of the sounds produced by such musical instrument and variation in the amplification of the produced sounds by manipulation of the various switches 6 and 7 through the means of the buttons 8.

It will be understood that the invention is not to be limited to the specific construction or arrangement of parts shown, but that they may be widely modified within the invention defined by the claims.

What is claimed is:

1. In an accordion having a treble tone side and a bass tone side and sound escape openings on each said sides, the combination with said sound escape openings of an elongated housing attached to the exterior of said treble side, said elongated housing having one open side disposed to communicate with said sound escape opening on the treble side, a plurality of adjustable microphones disposed in said housing in spaced relation, flexible porous vibration dampening housings enclosing said microphones, a removable perforated closure for said open side of the elongated housing, and attaching means carried by said perforated closure for attaching said housing to said treble tone side.
2. In a device for amplifying the sounds produced by a musical instrument, a housing having one open side thereon, said housing to be attached to the exterior of said musical instrument to allow said opening to receive sound tone from said instrument therein, a plurality of adjustable microphones in said housing at spaced points therein, a flexible porous vibration dampening housing enclosing each of said microphones, a removable perforated closure member for said open side of the housing, and attaching means carried by said removable closure member for attaching said housing to said musical instrument.

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