Aug. 19, 1958 R. HAHN 2,848,059

SOUND BAFFLES

Filed Feb. 13, 1957

FIG. 1

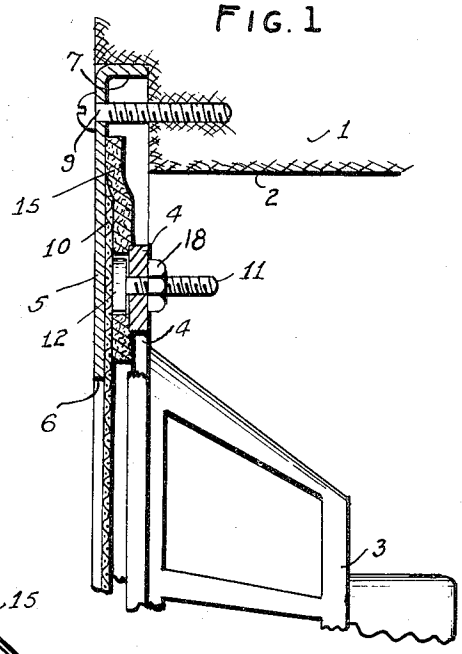


FIG. 2

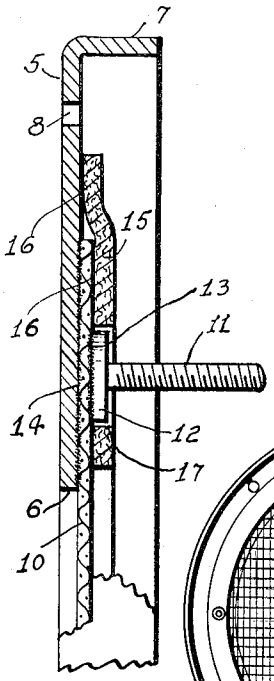


FIG. 4

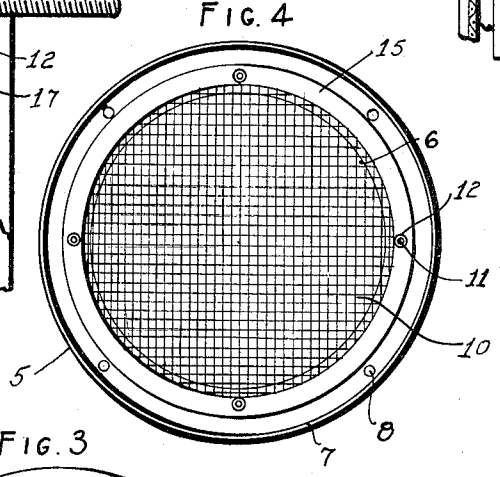
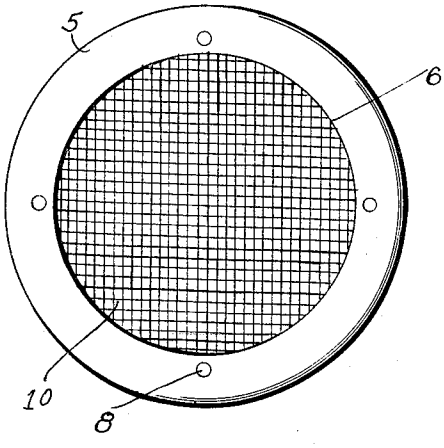


FIG. 3



INVENTOR.
RICHARD HAHN
BY: Ben V. Gillman
ATTORNEY

United States Patent Office 2,848,059 Patented Aug. 19, 1958

2,848,059

SOUND BAFFLES

Richard Hahn, Olivette, Mo.

Application February 13, 1957, Serial No. 639,877

2 Claims. (Cl. 181—31)

This invention relates to improvements in sound baffles, and more especially to such a baffle that is intended to be fixedly secured to the discharge end of a loud speaker, whereby the thus interconnected members may be mounted as a unit into a suitable recess previously provided in a supporting wall structure.

One of the important objects of my invention is to so construct such a baffle that the several individual elements thereof are so rigidly interconnected that there will be no rattle or vibration between said parts, and to therefore assure a true sound coming through said baffle, without extraneous noises.

Another object of the invention is to so permanently interlock the several elements of the baffle structure that the fastening means for interlocking said baffle and loud speakers together will be permanently welded to one of the elements of the baffle to prevent any play therebetween that might tend to set up vibration thereat.

A further object of my invention is to so weld said fasteners to the baffle structure that the weld marks or spots will not be visible at the exterior surface of the baffle, and thus will not detract from the neatness and appearance of said structure as viewed after the structure has been mounted in position on the wall.

An added object of the invention is to permanently secure a non-vibratory sound-insulation annulus to the rear face of the baffle, making the same of a compressible material so as to afford a good seal between said baffle and the adjacent portions of the loud speaker to which the baffle is attached.

Other objects of my invention are to provide a novel procedure of constructing the foregoing described structure, to obtain said results, and to otherwise insure that the assembly will be neat and attractive in appearance, simply made with a rapidity of construction time and effort, and which will be otherwise satisfactory and efficient for uses wherever found practicable.

To this end, my invention consists in the novel structure herein shown and described, and the method of forming the same, all as will be clearly pointed out in the following specification.

In the drawings, wherein like reference characters represent like or corresponding parts throughout the views,

Figure 1 is a fragmentary vertical cross-sectional view through the speaker and baffle unit, after securement in position on the supporting wall structure;

Figure 2 is an enlarged detail view, showing a fragment of the baffle unit prior to its interlocking connection with the loud speaker;

Figure 3 is a front view of the baffle; and

Figure 4 is a rear view of the same.

Referring more particularly to the drawings, wherein I have illustrated a preferred embodiment of my invention, 1 represents any suitable wall structure to which the loud speaker and its baffle is intended to be mounted, and said wall is provided with a recess 2 rearwardly thereinto of suitable shape to properly receive the speaker and baffle together as a previously assembled unit structure, all as

shown in Fig. 1, the speaker being indicated at 3. The most outwardly projecting portion of said speaker may be provided with a spider having an end ring or band 4 provided with bolt-receiving holes spaced circumferentially thereabout.

The baffle structure itself includes a plate 5 of a size and shape to properly cover the opening or recess 2 in the supporting wall, and in the instant case is shown as being circular in outline. This plate is preferably of metal, and most often suitably finished on its exterior so as to blend or harmonize with the room in which it is intended to be placed, said plate having a central opening 6 therethrough for passage of loud speaker sound. An annular flange 7 may be formed on said plate as indicated, and holes 8 may be made through said plate and circumferentially spaced intervals to receive bolts 9 for mounting the assembled unit to the supporting wall structure.

A screen or grid of any foraminous construction as indicated at 10 is placed behind said central opening to bridge across the latter and is sufficiently larger to extend radially therebeyond, as shown, the peripheral edge of said grid preferably terminating radially inwardly of said holes 8.

Bolts having shank portions 11 and radially enlarged heads or spacers 12 at one end are permanently carried by the rear of said plate or by the grid, and in the form shown, is secured to said grid, by welding said heads to the rear or inner face of said grid, the weld areas indicated at 13 in Fig. 2. Thus, after the grid has been mounted on the plate, said weld marks or spots will not be visible on the exterior face of said baffle after the assembly has been mounted in position.

Now said grid, with the studs welded thereto, is welded to the rear of the plate, as indicated along the areas 14, thus in effect making the plate, grid and bolts carried by the latter, an integral structure that has no tendency to permit the setting up of vibrations, noises or other extraneous sound therein, except the true sounds coming from the speaker.

A flat annulus 15, of a compressible, non-vibratory sound-insulating material, say of a paper origin, jute, or any other suitable material that meets the requirements, and of initial thickness greater than that of the heads 12 is cemented or otherwise permanently secured to the rear face of said grid and is of such size as to project radially beyond the terminal edge or rim of the latter, and is cemented to the rear face of the plate, this cementing being indicated at 16. Said annulus is provided with holes or apertures 17 therethrough, spaced apart circumferentially to permit passage of said bolt heads therethrough as indicated in Figs. 1 and 2, the inner rim of said annulus 15 terminating approximately at the peripheral boundary of said central opening in the plate.

The only openings appearing on the exterior face of said plate, even after securement of the grid and annulus thereto, is at 8, and of course the central sound passage opening.

The speaker is now ready to be affixed to said plate assembly as hereinbefore described, and after the speaker has been correctly positioned so that its bolt-receiving holes are in registry with the shank portions 11 of the bolts welded to the grid, nuts 18 are tightened on said shanks, to actuate the band of the speaker unit against the adjacent face of the sound-insulation annulus, thereby compressing the latter across the area of said band, as shown most clearly in Fig. 1. However, it is to be noted that the initial thickness of said annulus is such that the compression on the latter will not entirely permit said band to contact said stud heads.

Hence, there results an assembled structure consisting of the loud speaker and the baffle, properly insulated, and

so interconnected that accidental and undesired vibrations, rattles, and other extraneous noises will not be set up upon operation of the speaker.

Now, the thus previously assembled unit of speaker and baffle may be mounted to the supporting wall structure, as indicated in Fig. 1, the same being received in the previously prepared recess in the latter, and thereafter the bolts 9 may be inserted through the holes in the plate, engaging the wall structure to hold all of said parts firmly and neatly in mounted position ready for service.

Thus, the entire unit may be mounted and dis-mounted from the wall as a single unit structure, effecting a savings in time and effort in so doing.

I claim:

1. An assembled device for mounting as a unit to a supporting wall to cover a loud speaker-receiving recess in said wall, said device including a plate sufficiently large in transverse area to bridge across said recess and provided with a central opening to permit sound from said speaker to discharge therethrough, a foraminous grid sheet fixedly secured in interlocking relation to the inner face of said plate to cover said central opening, studs spaced about the peripherally bounding portion of said grid sheet for interlocking said device to said speaker, spacers of predetermined thickness permanently secured at the rear of said interlocked plate and grid sheet and carrying said studs to project rearwardly therefrom, a substantially flat annulus of non-vibratory sound-insulating material superimposed on said grid sheet and plate inner surfaces and thicker than that of said spacers, said plate provided with apertures for receiving fasteners therethrough for mounting said assembled device together with said speaker as a unit to said supporting wall.

2. An assembled device for mounting as a unit together with a loud speaker to a supporting wall structure that has a recess to receive said unit, said device including a plate sufficiently large in transverse area to bridge across said recess and project laterally therebeyond and is provided with a central opening for passage of speaker sound therethrough, a foraminous grid permanently secured to the inner face of said plate and of such transverse area to cover said central opening and project laterally therebeyond, studs spaced circumferentially about the peripherally bounding portion of said grid and provided with spacers at one of their ends, said spacers permanently secured to the inner face of said grid, a substantially flat annulus of compressible non-vibratory sound-insulation thicker than that of the spacers and of a width to extend between said central opening and radially beyond said grid and superimposed on and cemented to said grid and plate, said annulus having holes therethrough to receive said spacers, said plate provided with a series of apertures for receiving fasteners for mounting said entire assembly as a unit together with said loud speaker to said supporting wall structure, and means for engaging said studs to interlock with said speaker and compressibly clamp said insulator annulus between the speaker and the opposed portion of the grid and plate.

No references cited.