Dec. 1, 1964 H. J. JUNK 3,159,234

SECURING DEVICE FOR LOUD SPEAKER BAFFLES

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Fig. 1.

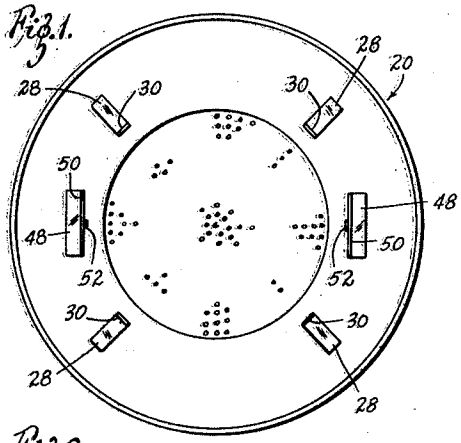


Fig. 3.

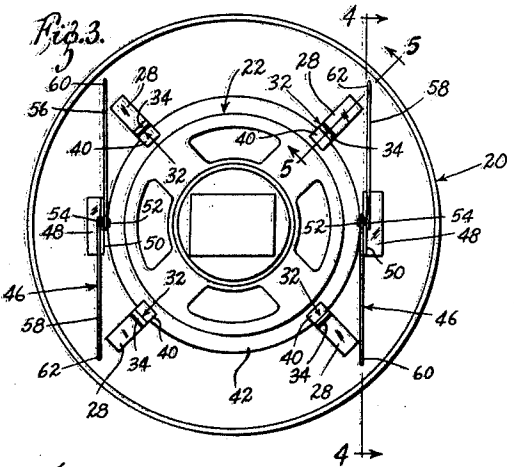


Fig. 2.

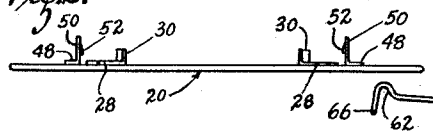


Fig. 4.

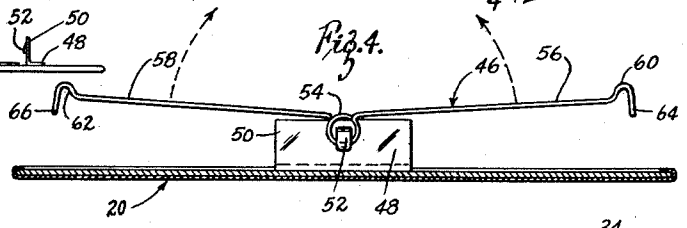


Fig. 5.

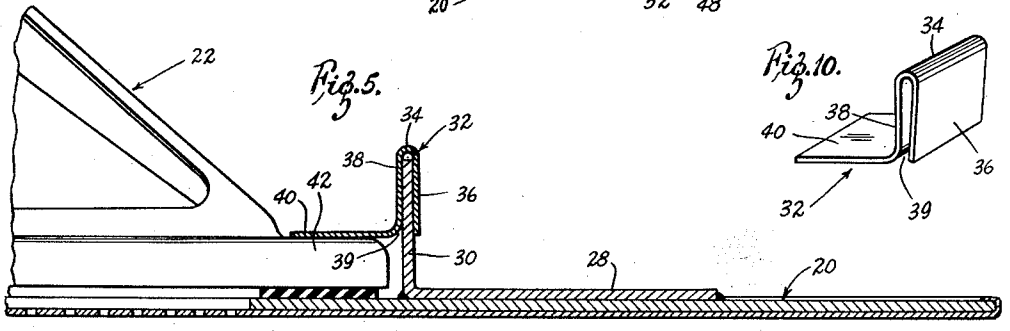
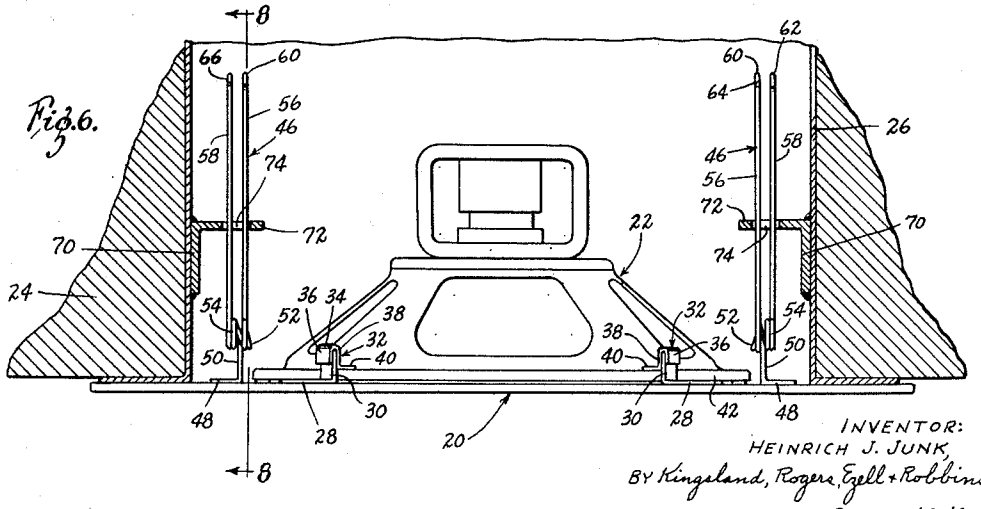


Fig. 10.

Fig. 6.



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Fig. 7.

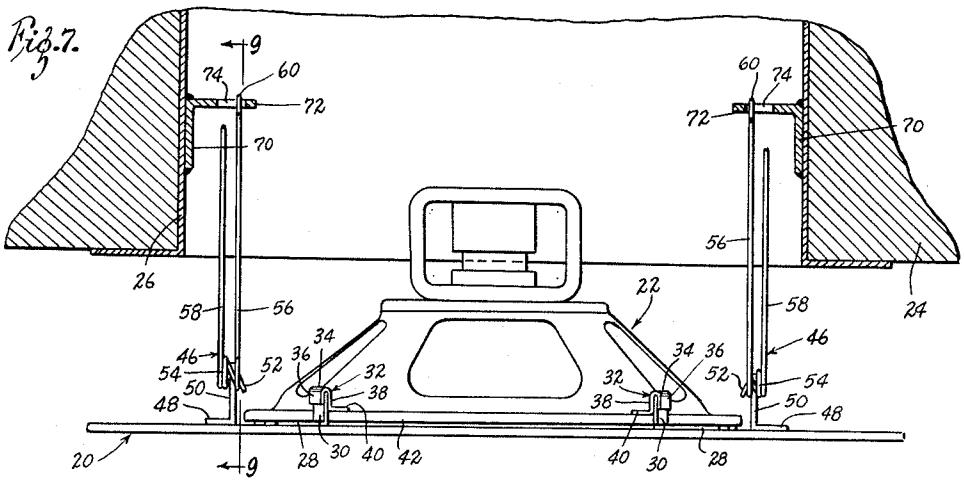


Fig. 8.

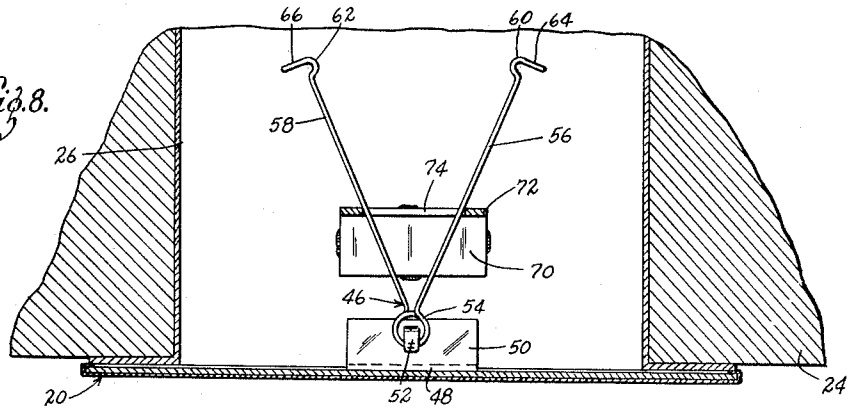
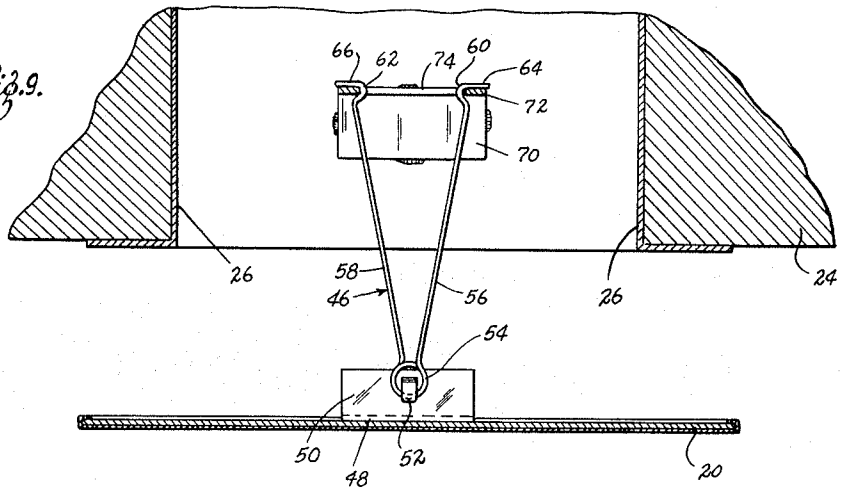


Fig. 9.



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SECURING DEVICE FOR LOUD SPEAKER BAFFLES

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5 Claims. (Cl. 181—31)

This invention relates to improvements in loud speaking baffles and, in particular, is concerned with means for securing a loud speaker to such baffle and securing the combination loud speaker and baffle to a supporting surface.

In the past, loud speakers have been conventionally affixed to baffles by means of screws or nuts and bolts, and loud speaker and baffle combinations in turn, when mounted together, have been connected to a supporting surface such as a ceiling or a wall by further screws or nuts and bolts. In such affixation it will be readily understood that various sized screws or nuts and bolts are employed, and that their affixation takes a considerable length of time. Further, there has been the inconvenience of mixing the screws or nuts and bolts in the wrong sizes or dropping them or losing them, all of which has made the securing of the units together a matter of some difficulty.

By means of this invention there has been provided a very simple and rapid means for mounting a loud speaker to a baffle, and, in turn, mounting the combined baffle and loud speaker upon a wall or ceiling surface. Essentially, the loud speaker may be mounted upon the baffle by means of a friction clip having a pair of walls connected at one end and tapering towards one another to an open mouth at the other end, which can be slipped over a vertical mounting member upon the baffle with a flange which presses down a portion of the speaker so that it bears against the baffle and cannot be removed. A multiplicity of these clips are employed and they may be slipped on and off with a simple pry tool, or even by hand, in a matter of seconds.

When so mounted together, the loud speaker and the baffle can be supported upon a wall surface or ceiling through a simple securing means. This securing means comprises a pair of stiff flexible finger elements which may be pressed together when mounted upon the interior of the baffle in such a manner that they can be inserted through an anchor plate disposed within an opening in the supporting surface. When so inserted in the opening, the retaining fingers are released and they spread apart, due to biasing action and automatically draw the speaker and baffle up to firm and flush engagement with the wall surface.

The securing means employed in this invention are simple, yet rugged and can be employed by relatively unskilled workmen. The cost is low and the entire assembly can take place in a matter of seconds.

The above features are objects of this invention and further objects will be apparent in the detailed description which follows and will be otherwise obvious to those skilled in the art.

For the purpose of illustration, there is shown in the accompanying drawings a preferred embodiment of the invention. It is to be understood that these drawings are for the purpose of illustration only and that the invention is not limited thereto.

In the drawings:

FIGURE 1 is a plan view of the baffle with the retaining spring fingers removed;

FIGURE 2 is a view in elevation of the baffle of FIGURE 1;

FIGURE 3 is a plan view taken similarly to FIGURE 1 but with the loud speaker mounted upon the baffle and with the retaining spring-like fingers mounted upon the baffle;

FIGURE 4 is an enlarged view in section taken on the line 4—4 of FIGURE 3 showing the mounting of the retaining spring fingers;

FIGURE 5 is an enlarged view in section taken on the line 5—5 of FIGURE 3 showing the structure of the retaining fastener for the loud speaker;

FIGURE 6 is a view showing the loud speaker and the baffle in elevation taken through a section of a supporting surface showing the mounting arrangement;

FIGURE 7 is a view taken similarly to FIGURE 6 but showing the loud speaker and baffle partially removed but in suspended position from the surface so that a workman may work inside the assembly;

FIGURE 8 is a view in section taken on the line 8—8 of FIGURE 6;

FIGURE 9 is a view taken in section on the line 9—9 of FIGURE 7; and

FIGURE 10 is a perspective view of the baffle retaining fastener clip.

Referring to FIGURES 1, 3 and 6, the baffle of this invention is generally indicated by the reference numeral 20, the loud speaker is indicated by the reference numeral 22, and the supporting wall surface is indicated by the reference numeral 24. A protective can 26 is mounted within an opening in the wall surface within which the loud speaker and baffle are mounted as shown in FIGURE 6.

The baffle 20, as shown in FIGURE 1, has a plurality of L-shaped plates 28 mounted upon it. These plates have a vertical member 30 extending upwardly, which receives a fastening clip element 32, best shown in FIGURE 10. The fastening clip element has a U-shaped portion 34 comprised of two legs or wall elements 36 and 38, which are bent in slightly toward one another at the bottom and taper towards an open mouth 39 so that when held apart to parallel relationship they are biased inwardly, due to the metallic construction of these fasteners, although it will be understood that other materials of construction having a degree of flexibility may be employed. The retainer or fastener 32 also has a flange portion 40 which is adapted to bear against a portion, such as a flange 42, of the loud speaker when the retainer is mounted over the vertical member 30 in the relationship shown in FIGURE 5.

The means for mounting the baffle to the supporting surface is best shown in FIGURES 3, 4 and 6 through 9. A torsion spring, generally indicated by the reference numeral 46, is mounted upon an L-shaped plate 48 connected to the baffle. The L-shaped plate has a vertical section 50 provided with a hook 52. The torsion spring 46 has a coil section 54 of several coils with one of the coils being hooked underneath the hook element 52, as shown in FIGURES 3, 4 and 6, so that the spring is retained by this arrangement. The spring further has two finger members 56 and 58 which extend oppositely from one another, but may be flexed toward one another in the direction of the arrows shown in FIGURE 4. The springs 56 and 58 have, respectively, a detent portion 60 and 62, and a hook portion 64 and 66 for a purpose later to appear.

The third part of the means for securing the baffle to the wall surface comprises an L-shaped anchor plate 70 mounted upon the interior of the protective can 26 as best shown in FIGURE 6. A pair of these may be employed as shown in this drawing and it will be noted that, as appears therein and in FIGURES 7–9, a horizontal flange portion of the anchor, designated by reference numeral 72, is provided with an elongated slot 74

which receives the finger elements when they are inserted therethrough.

USE

The baffle shown in FIGURE 1 may be very simply employed for the mounting of the load speaker to it. The loud speaker is placed over the baffle in central registry position as shown in FIGURES 3 and 6, and, after this has been done, the open mouth 39 of a fastener clip 32 is placed over the vertical member 30 mounted upon the baffle. The fastener is worked downwardly over the vertical member to the relationship shown in FIGURE 5 until the flange portion 40 bears over the flange portion of the loud speaker to hold the loud speaker against the baffle. A multiplicity of these fastener or retainer clip elements are simply employed and the loud speaker is thereby fastened to the baffle in a matter of seconds.

When the loud speaker has been so fastened to the baffle, the torsion spring 46 may be mounted upon the section 50 of the L-shaped plate. The coil spring sections 54 are spread apart and placed over the vertical member and one coil is moved downwardly over the hook 52 until it is engaged with it in the relationship shown in FIGURES 4 and 6. In this manner the torsion spring is affixed to the baffle.

When the baffle and mounted loud speaker are desired to be supported to a wall surface and the protective can, shown in FIGURES 6 through 9, the retaining finger members 56 and 58 are moved toward one another in the direction of the arrows shown in FIGURE 4. When this relationship has been established, and the hooked ends 64 and 66 are close to one another, they are inserted through the slots 74 in the anchor plate 70, much as in the fashion shown in FIGURE 9. In the position shown in FIGURE 9, prior to full engagement of the baffle against the wall surface, the detent portions 60 and 62 of the finger members and the hooked ends 64 and 66 will retain the baffle in spaced position with respect to the supporting wall surface. In this fashion a workman may do any wiring required within the loud speaker or the protective can enclosure for connecting necessary leads and the like.

When the aforementioned lead work has been completed, the hooked in members of the fingers may be moved toward one another and the operator grasping the finger members may move them upwardly slightly, and, after withdrawing his hands, may move the baffle upwardly by pushing against the bottom. It will be understood, that the finger members are biased, looking at the drawing in FIGURE 8, away from one another so that the tendency of the baffle is to rise upwardly into snug and flush engagement against the surface of the wall. Since the finger members of the torsion spring are quite strong and relatively stiff, they will hold the baffle in secure engagement due to the engagement of the fingers against the surfaces of the slot, as shown in the relationship of FIGURE 8.

When the baffle and loud speaker are desired to be removed for work on the loudspeaker, should this be required, the baffle can very simply be removed by merely drawing it downwardly from the relationship shown in FIGURE 8. This can be done by inserting a pry tool between the baffle and the wall surface, or the like, and the baffle may be drawn downwardly to the position shown in FIGURE 9 where the hooked ends and detent engage the walls defining the slot within which the fingers are inserted. In this manner the baffle may be partially removed or it will be understood that it can be entirely removed by bending the fingers further together and removing the entire unit all in a matter of seconds without the requirement of any screwdrivers, wrenches, or the like.

Various changes and modifications may be made within this invention as will be readily apparent to those skilled in the art. Such changes and modifications are within the scope and teaching of this invention as defined by the claims appended hereto.

What is claimed is:

1. A loud speaker baffle having a sound outlet comprising a central perforate section, means for supporting a loud speaker over the sound outlet on an imperforate section of the baffle surrounding said sound outlet, and means for connecting said baffle to a supporting surface, said loud speaker supporting means comprising a vertical member connected to the baffle and receiving in frictional relationship a removable fastening element, said removable fastening element having a U-shaped cross-section and being comprised of a pair of spring-like legs spaced from one another and tapering towards an open mouth, said fastening element being receivable over the vertical member with said legs being biased against the sides of said member and a flange connected to said fastening element adapted to overlie and bear against a flanged portion of the loud speaker and maintain it against the baffle.

2. A loud speaker baffle having a sound outlet comprising a central perforate section, means for supporting a loud speaker over the sound outlet on an imperforate section of the baffle surrounding said sound outlet, and means for connecting said baffle to a supporting surface, said loud speaker supporting means comprising a vertical member connected to the baffle and receiving in frictional relationship a removable fastening element having a flange adapted to overlie and bear against a flanged portion of the loud speaker and maintain it against the baffle, said connecting means comprising a pair of stiff spring-like retaining fingers anchored to the inside of said baffle adjacent one another and biased to extend in opposite directions in a rest position, said fingers in the operated condition being flexed toward one another and inserted through openings in anchor plate means disposed in fixed relation with respect to said supporting surface, in which position they are biased toward their rest position to draw the baffle tightly against said supporting surface.

3. A loud speaker baffle having a sound outlet comprising a central perforate section, means for supporting a loud speaker over the sound outlet on an imperforate section of the baffle surrounding said sound outlet, and means for connecting said baffle to a supporting loud speaker and means for connecting said baffle to a supporting surface, said loud speaker supporting means comprising a vertical member connected to the baffle and receiving in frictional relationship a removable fastening element, said removable fastening element having a U-shaped cross-section and being comprised of a pair of spring-like legs spaced from one another and tapering towards an open mouth, said fastening element being receivable over the vertical member with said legs being biased against the sides of said member and a flange connected to said fastening element adapted to overlie and bear against a flanged portion of the loud speaker and maintain it against the baffle, said connecting means comprising a pair of stiff spring-like retaining fingers anchored to the inside of said baffle adjacent one another and extending in opposite directions in a rest position, said fingers in the operated condition being flexed toward one another and inserted through openings in an anchor plate means disposed in fixed relation with respect to said supporting surface, in which position they are biased toward their rest position to draw the baffle tightly against said supporting surface.

4. A loud speaker baffle having a sound outlet comprising a central perforate section, means for supporting a loud speaker over the sound outlet on an imperforate section of the baffle surrounding said sound outlet, and means for connecting said baffle to a supporting surface, said loud speaker supporting means comprising a vertical member connected to the baffle and receiving in frictional relationship a removable fastening element having a

flange adapted to overlie and bear against a flanged portion of the loud speaker and maintain it against the baffle, said connecting means comprising a pair of stiff spring-like retaining fingers anchored to the inside of said baffle adjacent one another and extending in opposite directions in a rest position, said fingers in the operated condition being flexed toward one another and inserted through openings in an anchor plate means disposed in fixed relation with respect to said supporting surface, in which position they are biased toward their rest position to draw the baffle tightly against said supporting surface, said fingers having retaining means on their ends adapted to engage the sides of the opening in the anchor plate whereby said baffle may be partially withdrawn from the supporting surface and suspended from it in spaced relation.

5. A loud speaker baffle having a sound outlet comprising a central perforate section, means for supporting a loud speaker over the sound outlet on an imperforate section of the baffle surrounding said sound outlet, and means for connecting said baffle to a supporting loud speaker and means for connecting said baffle to a supporting surface, said loud speaker supporting means comprising a vertical member connected to the baffle and receiving in frictional relationship a removable fastening element, said removable fastening element having a U-shaped cross-section and being comprised of a pair of spring-like legs spaced from one another and tapering towards an open mouth, said fastening element being receivable over the vertical member with said legs being biased against the sides of said member and a flange connected to said fastening element adapted to overlie and bear against a flanged portion of the loud speaker and maintain it against the baffle, said connecting means comprising a pair of stiff spring-like retaining fingers anchored to the inside of said baffle adjacent one another and extending in opposite directions in a rest position, said fingers in the operated condition being flexed toward one another and inserted through openings in an anchor plate means disposed in fixed relation with respect to said supporting surface, in which position they are biased toward their rest position to draw the baffle tightly against said supporting surface, said fingers having retaining means on their ends adapted to engage the sides of the opening in the anchor plate whereby said baffle may be partially withdrawn from the supporting surface and suspended from it in spaced relation.

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