Nov. 2, 1965 W. J. MORRIS ETAL 3,215,380

MOUNTING APPARATUS

Filed July 14, 1964 2 Sheets-Sheet 1

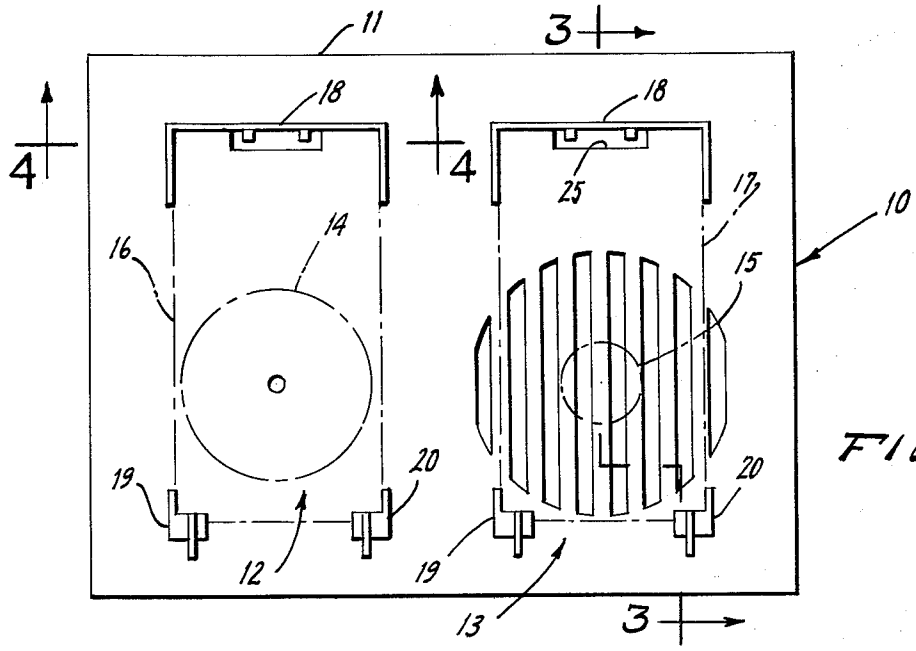


FIG. 1.

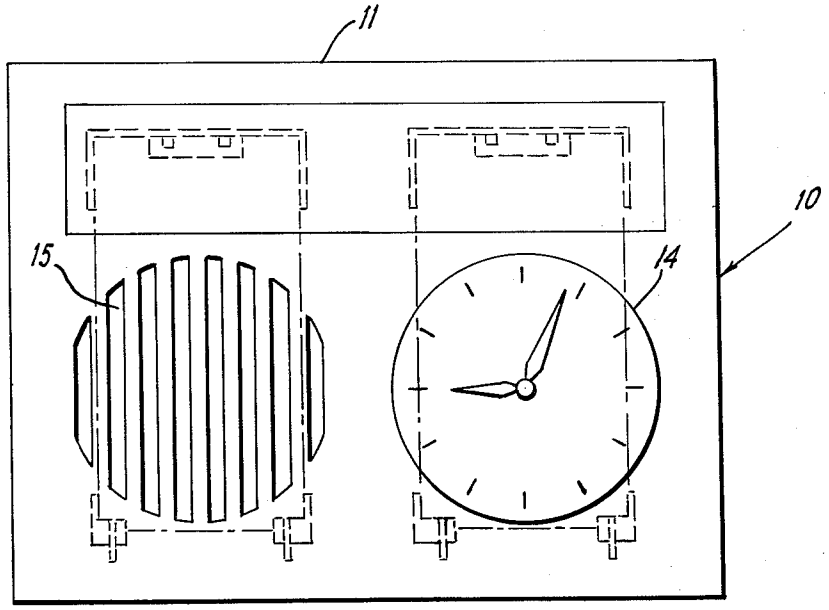


FIG. 2.

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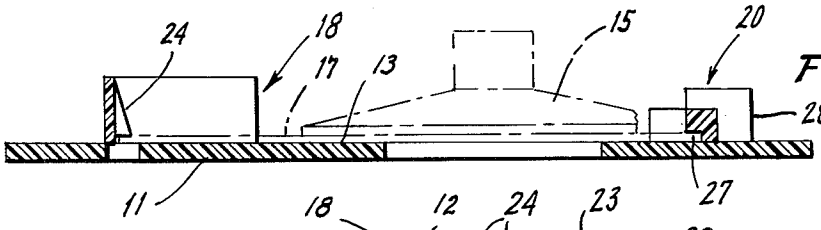


FIG. 3.

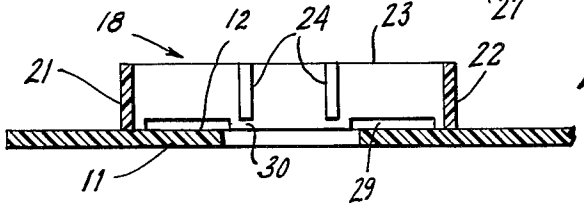
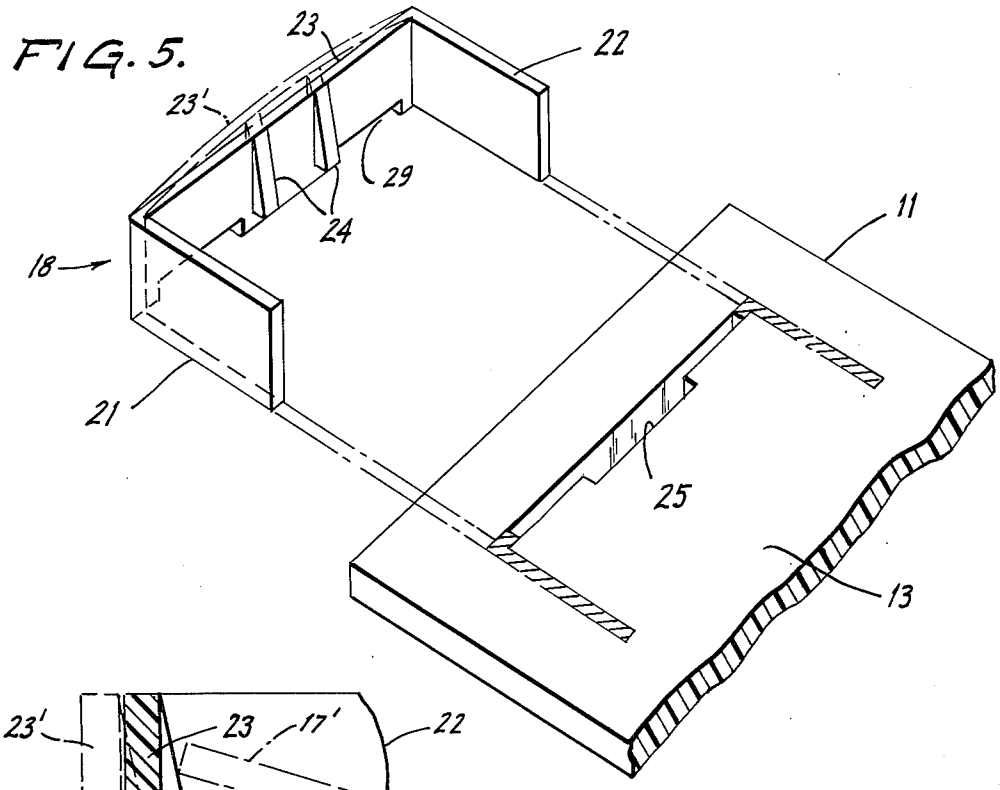


FIG. 4.

FIG. 5.



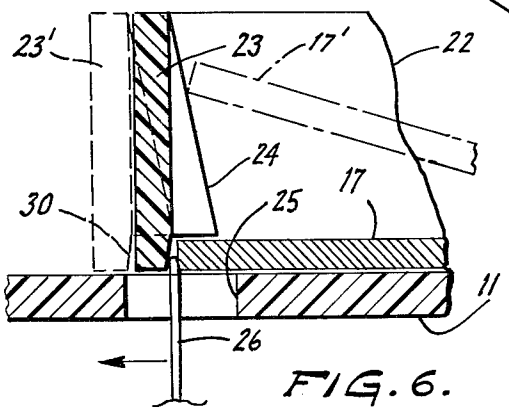


FIG. 6.

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MOUNTING APPARATUS

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6 Claims. (Cl. 248—27)

This invention relates to mounting apparatus for radio broadcast receivers and the like. It relates particularly to a device for installing major components, such as loudspeakers and clocks, which have generally flat mounting plates supporting their speaker cones and clock drives. The invention contemplates securement of such a component to a supporting surface in the receiver.

It is an object of the invention to establish such securement, particularly with the mounting plate in a position close and parallel to the supporting surface, and to effect it by snap-on action. It is a further object to provide this action by simple, rugged and inexpensive means. Still another object is to make the mounting releasable and to facilitate removal, repair, and replacement of components.

Toward these objectives the invention provides a generally rigid panel surface, disposed for example in a radio receiver, with a flexible holder strip or the like, having end portions thereof secured to the panel surface and having a body portion resiliently movable over said surface, in close proximity thereto, for engagement with a support surface on a clock or loudspeaker or other major component. A simple and preferred embodiment of the invention is shown in the drawing appended hereto, in which:

FIGURE 1 is an elevational view of said embodiment, the view being taken from within the receiver cabinet.

FIGURE 2 is a front view of the receiver.

FIGURES 3 and 4 are sectional views taken respectively, and approximately, along lines 3—3 and 4—4 in FIGURE 1. FIGURE 5 is an exploded perspective view of principal elements of the mounting apparatus. FIGURE 6 shows an enlarged detail, taken from FIGURE 3, in two operative positions thereof.

Referring first to FIGURES 1 and 2: radio receiver **10** is shown as having a front panel **11** the inside of which provides generally planar mounting areas **12** and **13**, utilized respectively for the support of clock **14** and loudspeaker **15**. The actuators and associated principal structures of such devices are generally secured to flat mounting plates **16**, **17**, which are shown as being held to mounting surfaces **12**, **13**, and in close proximity thereto, see FIGURE 3. Mounting plates **16**, **17** are generally of metal, while panel **11** is advantageously made of a synthetic plastic substance or other electrically insulative material.

Each of the mounting structures, as best shown in FIGURES 4 and 5, comprises a fastener strip **18** bent in approximate U-shape and extending along the mounting surface on panel **11**. As further shown in FIGURES 1 and 3, each mounting structure further includes small rigid bosses **19**, **20** on the mounting surface of panel **11**, for abutment and securement of one end of the component mounting plate. These bosses, as well as fastener strips **18**, can be made of plastic material generally similar to that of panel **11**.

As is clear from FIGURE 5, strip **18** has a pair of bar-like end portions **21**, **22**, each having an edge rigidly secured to the mounting surface on panel **11**. The strip additionally provides an elongate portion **23** not secured to the panel and resiliently bendable into position **23'**. The ends of this resilient strip portion, which constitutes

a flat-spring element, are anchored to or integral with ends of bar-like end portions **21**, **22**. The body of resilient element **23** has wedge-shaped bosses **24** preferably molded on and to a surface of said body facing abutment members **19**, **20**, the bosses being located on a central portion of the strip between the ends thereof.

The so-arranged fastener elements **18**, **19** and **20** are easy and inexpensive to provide, either as integral parts of panel **11** or separately therefrom and for subsequent attachment by cementing or other suitable techniques. For instance these elements can be formed by casting or molding procedures.

The arrangement of the fastener elements is such that strip **23** is resiliently movable a limited distance over the plane of the panel surface, whereto the ends of the strip are secured, in order to secure a mounting plate and its component unit to panel **11**. For this purpose one end of mounting plate **17** is inserted in slots **27** extending into abutment blocks **19**, **20** (FIGURE 3). At this time the plate is held at an acute angle to the support panel (FIGURE 6). The other end of plate **17** is then brought down onto bosses **24**, as indicated at **17'**. On application of slight downward pressure to the top surface of the mounting plate, spring element **23** with bosses **24** thereon, is deflected into broken line position **23'** (FIGURE 5), while abutment **19** or **20** acts as a stop against which the mounting plate reacts (see FIGURE 3). Plate **17** then snaps into the desired position beneath bosses **24** directly adjacent panel **11**, whereupon spring element **23** with bosses **24** resiliently returns to its full line position, thereby completing the snap-on mounting of the plate.

Panel **11** is perforated by slot **25**, below and adjacent the normal position of strip element **23**, to allow insertion of a suitable tool **26** whereby the strip element can be deflected into position **23'**, shown in broken lines in FIGURE 6, when it is desired to release support plate **17** from retention under boss **24**, to provide for removal of the plate. When released after such bending, strip element **23** springs back from **23'** to its normal full-line position, due to the resilience of this element.

Desirably, abutment bosses **19**, **20** are reinforced by integral ribs **28** (FIGURE 3). It is preferred to reduce the cross section of strip **23** between mounting bars **21**, **22** and wedge bosses **24** by slots **29** (FIGURE 4) thereby not only promoting the resilient bending of the strip but also providing for an alternative method of releasing plate **17** from the snapped-on condition, when insertion of a tool **26** (FIGURE 6) is impossible. A suitable hook-shaped member, not shown, can be inserted through slot **29** (FIGURE 4) engaging central strip portion **30** below wedge bosses **24** and thus allowing the user to bend strip **23** and release mounting plate **17**.

While only a single embodiment of the invention has been described, it will be understood that the invention contemplates such variations and modifications as come within the scope of the appended claims.

We claim:

1. Apparatus for installing a component such as a clock or loud-speaker on a support member in a radio or the like, said apparatus comprising: at least one strip resiliently movable over said support member, adjacent and generally parallel to a surface of said member, and wedge-shaped retaining means on said strip for inserting the component by snap-on action, into position with a component surface adjacent and parallel said support member and retained below said wedge-shaped means.

2. Apparatus as described in claim **1** wherein both ends of the strip are rigidly secured to said support member.

3. As a device for releasably fastening a mounting

plate on a panel of a broadcast receiver or the like: an elongate fastener element having at least one end secured to said panel and having a body resiliently movable over the plane of a surface of said panel; a wedge-like body projecting from the body of the resiliently movable fastener element, the wide portion of the wedge-like body being disposed closely above said surface; and rigid means on said panel for holding an edge of the mounting plate, opposite said wedge-like body adjacent to said panel and in snap-on relationship to said wedge-like body.

4. In apparatus for installing a component assembly on a support in a radio or the like: at least one resilient strip movable over said support, adjacent and parallel to a surface of said member, and retaining means on said strip for snap-on insertion of the component assembly, the retaining means being so shaped and disposed that movement of the component assembly past the retaining member deflects the resilient strip and accommodates movement of the component assembly into position beneath the retaining means, and thereafter allows resilient return of the strip to hold the component assembly in said position.

5. Apparatus as described in claim 3 wherein said panel is perforated under said strip and retaining member

to permit insertion of a tool for distorting the strip after insertion of the component assembly.

6. A structure for mounting a component unit having a support plate, said structure comprising a support member of electrically insulating material, for instance of synthetic plastic substance; a generally U-shaped fastener element of similar material, said element having both ends thereof rigidly secured to a surface of said support member while having an intermediate part thereof resiliently movable relative to said support member, parallel and close to said surface thereof; a wedge-shaped boss on said intermediate part; and abutment block means on said support member for holding the support plate of said unit in snap-on relationship to said wedge-shaped boss.

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