United States Patent [19]

Mizusawa

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[54] **BAR ANTENNA HOLDER**

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[30] **Foreign Application Priority Data**

Nov. 30, 1973 Japan ..... 48-136725[U]

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[51] **Int. Cl.**[2] **A47F 5/00**

[58] **Field of Search** 248/285, 286, 298, 299, 248/279, 287, 293, 295, 296; 108/102; 343/702; 403/109, 59, 112; 248/326, 333

[56] **References Cited**

UNITED STATES PATENTS

864,535	8/1907	Hawker	248/326
2,704,963	3/1955	Parachek	248/279
2,711,872	6/1955	Lampke	248/299
3,346,863	10/1967	Siebold	343/702

FOREIGN PATENTS OR APPLICATIONS

693,517	9/1964	Canada	248/279

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[57] **ABSTRACT**

To a cabinet to which an antenna is desired to be attached, there is fastened a fixing member which has an arc housing formed in the front wall and a through aperture at the bottom to admit an arm plate. Through said through aperture is inserted the arm plate which is provided at one end thereof with a cylindrical supporting body. The cylindrical supporting body contains therein a socket adapted to receive a cylindrical holding member. The cylindrical holding member through which an antenna is passed and held in position is set into rotatable engagement with the socket of said cylindrical supporting body. When the cabinet is to be moved or packed, the antenna can be stowed in close proximity to the cabinet by pushing the arm plate through the aperture. When the antenna is put to use, it is suitably separated from the cabinet by pulling the arm plate out through the aperture so that it can be turned and set into a desired direction in which the highest effects of reception are obtained.

2 Claims, 4 Drawing Figures

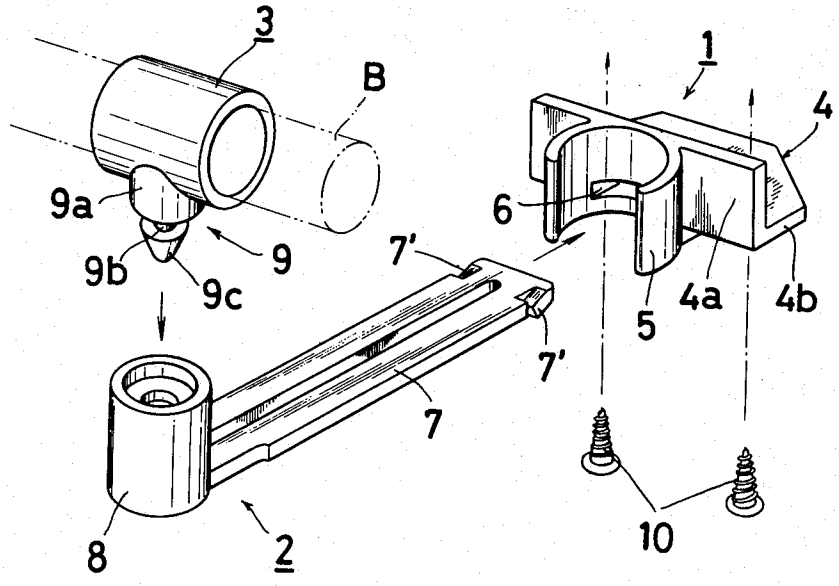


Fig. 1

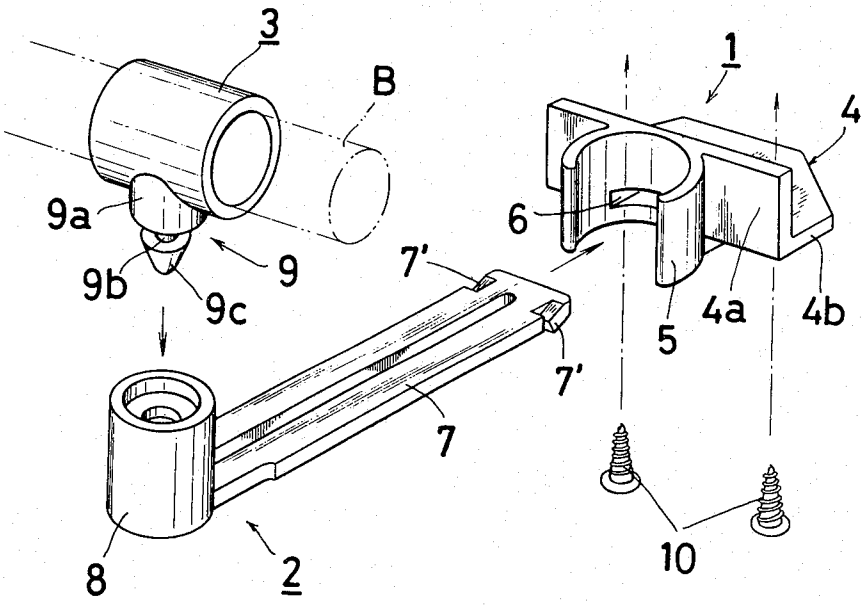


Fig. 4

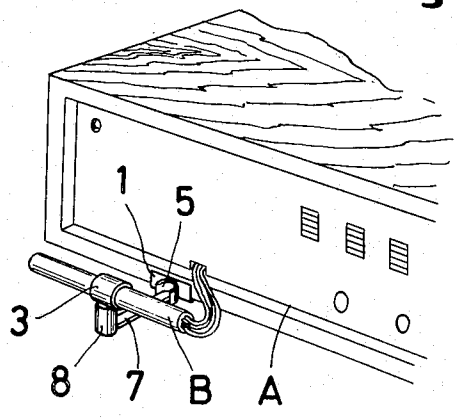


Fig. 2

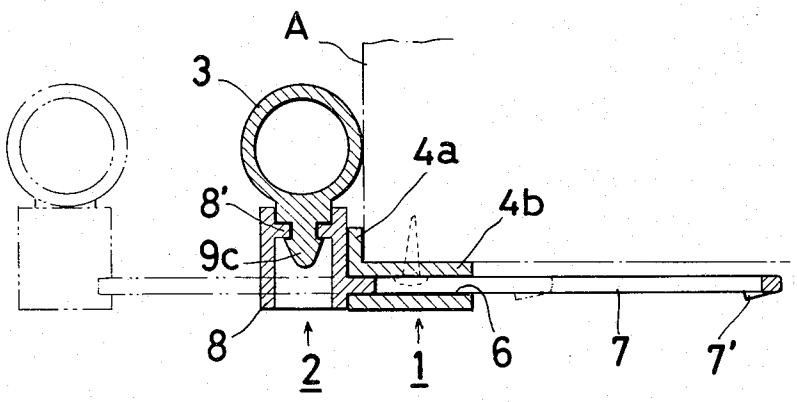
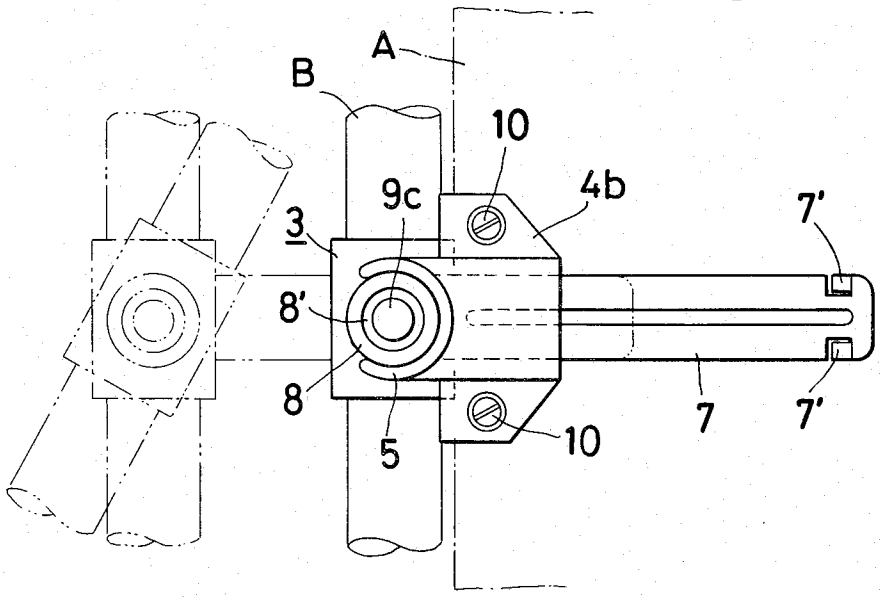


Fig. 3



BAR ANTENNA HOLDER

BACKGROUND OF THE INVENTION

This invention relates to an apparatus for holding in position the bar antenna which is intended for use with receivers such as radio sets and stereophonic sets.

Heretofore, most bar antennas designed for use with receivers have generally been fixed stationarily inside the cabinets of such receivers. With a view to improving the effects of reception, however, the practice of fastening bar antennas to the outer face of cabinets in enjoying widespread acceptance.

Various holder systems designed to permit bar antennas to be held on the outside of cabinets have been proposed and put to use. These conventional systems are invariably designed for immobilized fixation and, therefore, have suffered a disadvantage that the direction of reception becomes fixed. Further because they cannot be retracted into a safe position, protruding antennas become obstacles or suffer damage when the systems are to be packed at the time of conveyance.

In view of the drawbacks mentioned above, the present invention aims to provide a bar antenna holder system which permits the bar antenna to be held freely movably relative to the cabinet so that it may be stowed in a state of intimate contact with the cabinet proper as when the cabinet is transported, separated away from the cabinet proper to obtain improved effects of reception at the time of service and turned and set in any freely selected direction in which the desired reception is obtained under the most advantageous conditions without reference to the direction in which the cabinet is placed.

SUMMARY OF THE INVENTION

To attain the objects described above in accordance with the present invention, there is provided a bar antenna holder system which comprises in combination a fixing member composed of an adapter plate piece and an arc housing formed on the front wall of said adapter plate piece and incorporating an aperture perforated at the bottom of said arc housing, a supporting member composed of an arm plate adapted to be freely inserted in or extracted out through the aperture of said fixing member and a cylindrical supporting body provided at one end of said arm plate and adapted so as to engagingly stowed into said arc housing by having said arm plate slid in through said aperture and a cylindrical holding member provided exteriorly with a fastener for rotatable engagment with the supporting body of said supporting member and interiorly with a hole adapted to permit a bar antenna to be passed therethrough and held in position. When the cabinet is to be removed or packed, the bar antenna can be stowed in close proximity to the cabinet by having the arm plate slid inward through the aperture. when the cabinet is to be put to use, the bar antenna can readily be drawn out of the cabinet by sliding the arm plate out through the aperture and it then can be turned and set in any desired direction for the best effects or reception.

With the above and other objects in view which will become apparent in the following detailed description, the present invention will be clearly understood in connection with the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. **1** is a perspective view of one embodiment of the bar antenna holder according to the present invention in its disassembled state.

FIG. **2** is a centrally sectional view of the bar antenna holder of FIG. **1**, showing the component members, i.e., the fixing member, the supporting member and the holding member, in an assembled state.

FIG. **3** is a bottom view of the bar antenna holder of FIG. **1**, wherein the bar antenna is held in position.

FIG. **4** is a perspective view explanatory of the state in which the bar antenna holder is used.

DETAILED DISCRIPTION OF THE INVENTION

The illustrated embodiment represents one typical example of the present invention. The invention will be described herein below by reference to the drawings, wherein **1** denotes a fixing member adapted to be fastened directly by means of screws to a cabinet A such as of a stereophonic receiver and **2** denotes a supporting member adapted to cause a holding member **3** holding a bar antenna B in position thereon to be supported freely extractably against said fixing member.

The fixing member **1**, as illustrated, has an adapter plate piece **4** shaped in an angular section to facilitate attachment to the cabinet A and has an arc housing **5** formed integrally with a front wall **4***a* vertically rising from said adapter plate piece. At the bottom, the fixing member has a through aperture perforated in such way that the aperture opens in the direction of the opening including the chord of the arc housing and, at the same time, pierces rearward along the lower face of the bottom wall **4***b* of said adapter plate piece.

The supporting member **2** to be fastened to said fixing member is composed of an arm plate **7** in the shape of a strip of plate and a cylindrical supporting body **8** provided at the rear end of said arm plate. It is to adapted as to be fastened onto the fixing member by having said arm plate inserted past the opening of said arc housing **5** and through the aperture **6** formed at the bottom of said arc housing.

In the case of the illustrated embodiment, the arm plate for insertion through the aperture is provided at the forward end thereof with a pair of clicks **7'**, **7'** inclined backward and formed integrally with the plate. When the arm plate is in the process of going through the aperture, these clicks are so deformed as to advance and reach the rear side of the aperture. Once the clicks have gone past the aperture, they serve to prevent the arm plate from being completely pulled out through the aperture. Thus, said arm plate is permitted to provide free sliding motion through the aperture in the range corresponding to the length from the supporting body **8** and the clicks **7'**, **7'**. Said supporting body **8** is so shaped that its outside diameter equals the inner diameter of the arc housing of the fixing member. When said arm plate is slid inward through the aperture, therefore, the supporting body forces its way through the opening of the arc housing and snaps into intimate engagement with the inside of the housing. Therefore, said supporting member **2** permits the supporting body **8** to be pulled out away from the fixing member **1**, with due guidance afforded by the arm plate inserted through the aperture. On the other hand, when the supporting member is pushed in toward the fixing member, the supporting body **8** is drawn in until it

forces its way through the opening of the arc housing and finally stows itself in engagement with the housing.

The holding member **3** serving to hold the bar antenna relative to the supporting member **2** which is attached to the fixing member as described above has a cylindrical shape. On the outside of said holding member is planted a fastener **9** which is adapted to permit engagement with the supporting body **8** of said supporting member. The fastener **9** thus formed is composed integrally of a base **9***a* shaped so as to have a diameter equalling the inside diameter of the supporting body **8**, a shaft **9***b* having a smaller diameter and formed protrudingly from the center of said base and a head **9***c* formed at the forward end of said shaft. The fastener downwardly confronts said supporting member. It is fastened to the supporting member by allowing the head **9c** of the fastener to advance past an annular step **8'** formed along the inside of said supporting body and come into engagement with the farther side of said annular step and at the same time causing the base **9a** of the fastener to come into snug contact with the opening of the supporting body. Once the holding member **3** is thus fastened in position, therefore, the head **9***c* of the fastener which is now in engagement with the annular step **8'** prevents the holding member from being readily separated from engagement and at the same time enables the holding member to be freely rotated while in a fastened state.

In order for the bar antenna to be held in position on this holding member, it is required only to be pushed into the cylinder proper of this member at one end of the opening thereof.

The holder system of the present invention which comprises the fixing member **1**, the supporting member **2** and the holding member **3** as described above is fastened to a given cabinet by placing the adapter plate piece **4** of said fixing member at a lower corner portion of the cabinet as shown in FIG. **4** and driving the screws **10, 10** through the bottom wall **4***b* of said adapter plate piece **4.** Since the supporting member which is engaged with the fixing member is freely slidably disposed relative to the aperture **6** and therefore can freely be pulled out away from the fixing member as explained previously, the holding member **3** fastened to said supporting body **8** can be pulled out far from said cabinet. Further since said holding member is freely rotatably supported relative to the supporting member, there is enjoyed an advantage that the holding member now in a position separated from the cabinet permits the bar antenna held thereon to be turned freely and set to a direction in which the reception is obtained under the best conditions.

In addition to permitting the supporting member to be pulled out freely, the apparatus of the present invention enables the supporting member to be pulled in so that the supporting body **8** of said supporting member is engagingly stowed within the arc housing **5** of the fixing member and is prevented from being released to move at random, thus allowing the bar antenna position on the supporting member to be held in intimate contact with the side wall of the cabinet. When the cabinet is placed in a packing case at the time of conveyance, for example, this intimate contact permitted by the present apparatus proves advantageous because the bar antenna neither offers obstacle nor sustains damage in transit. The component members of the present apparatus are formed of a plastic material and, therefore, enjoy the advantage of low cost and rich utility.

What is claimed is:

1. A three piece holder for bar antennas which comprise an adapter base adapted for mounting on a cabinet and including an arcuate housing element extending outwardly from said base, said arc housing having an aperture formed therein within the margins of said arcuate housing, a supporting arm member mounted on said base plate and consisting of an arm inserted within the aperture in said arc housing and capable of a sliding movement relative to said adapter base, said supporting arm member having an integral cylindrical supporting body provided at the opposite end of said arm member and having a dimension such that it is nestable in the arcuate housing as the arm is moved inwardly through said aperture, and a cylindrical holding member providing a housing to accept a bar antenna and having projecting from its outer wall a fastener element, said supporting body being provided with a stepped bore therein receiving the fastener of said cylindrical holding member to permit relative rotation of said cylindrical holding member relative to said supporting arm member, the assembly permitting relative movement of said bar antenna relative to the cabinet on which said assembly is adapted to be mounted.

2. A device of the type described in claim **1** wherein said arcuate housing member is an arc of a circle more than 180° in circumference and said cylindrical holding member which has a diameter equal to the internal diameter of said arcuate housing member may be snapped into and retained in fixed position within said arcuate housing member when the arm on which said cylindrical holding member is formed is moved through the aperture in the arcuate housing member to a retracted position.

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