



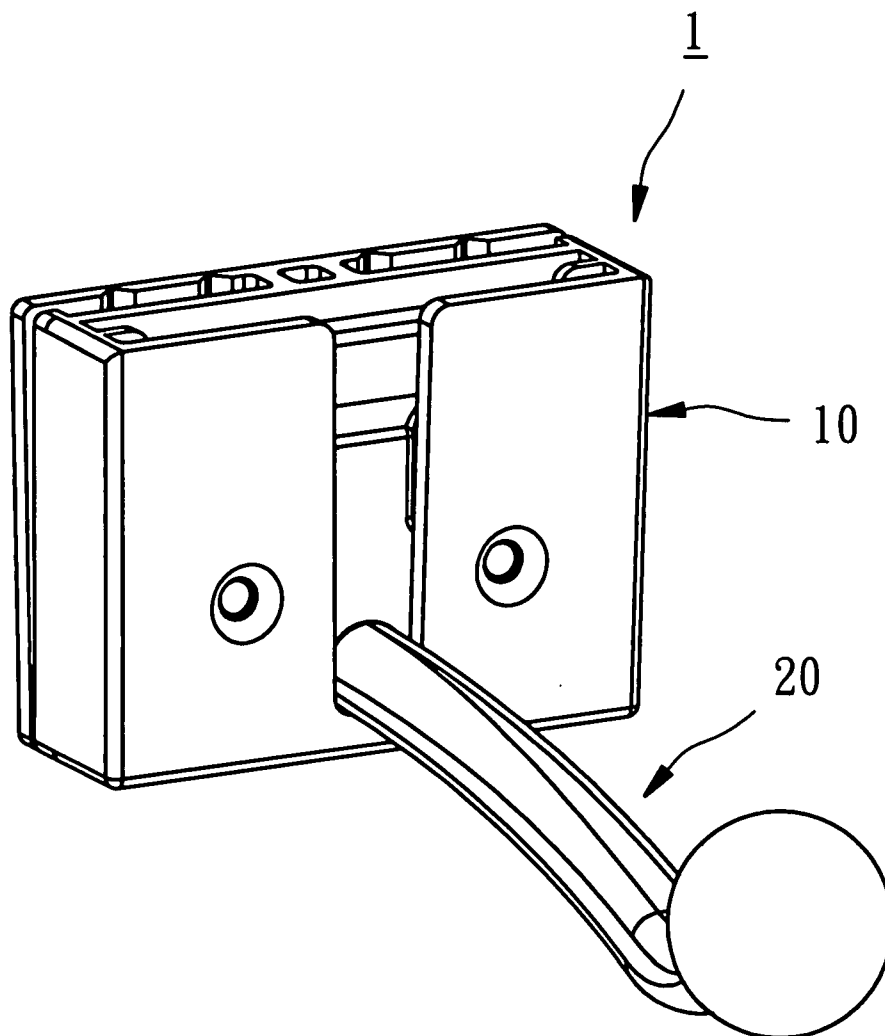
US 20070170330A1

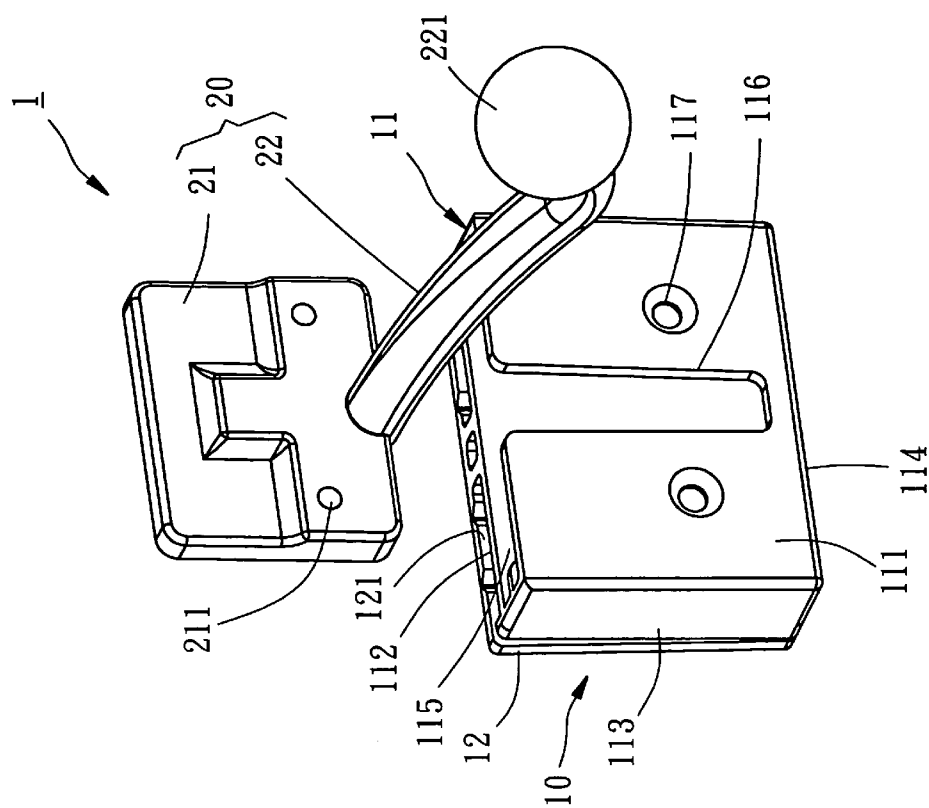
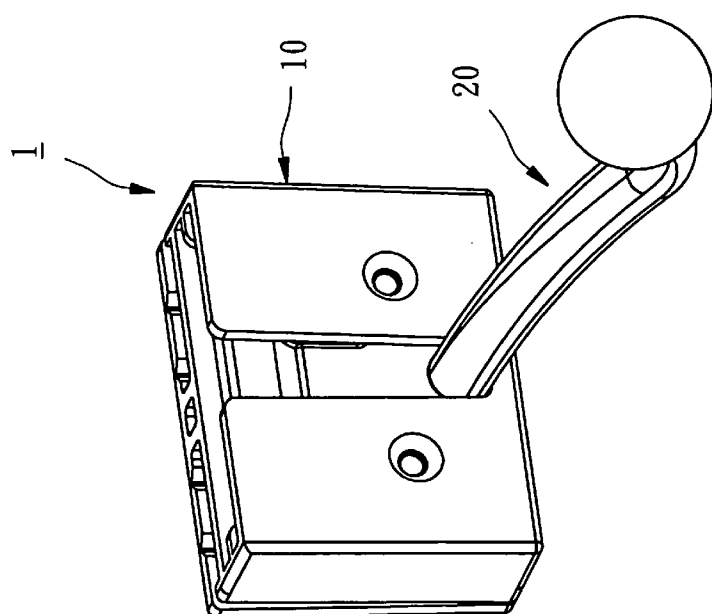
(19) **United States**(12) **Patent Application Publication****Yeh et al.**(10) **Pub. No.: US 2007/0170330 A1**(43) **Pub. Date: Jul. 26, 2007**(54) **RACK FOR SUPPORTING OBJECT IN
MOTOR VEHICLE**(75) Inventors: **Chun-Lin Yeh**, Taichung County (TW);
Hsueh-Ya Lin, Taichung County (TW)Correspondence Address:
BACON & THOMAS, PLLC
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 22314(73) Assignee: **MOBILETRON ELECTRONICS
CO., LTD.**, TAICHUNG HSIEN (TW)(21) Appl. No.: **11/407,956**(22) Filed: **Apr. 21, 2006**(30) **Foreign Application Priority Data**

Jan. 20, 2006 (TW)..... 95201290

Publication Classification(51) **Int. Cl.**
A47F 5/00 (2006.01)(52) **U.S. Cl.** **248/309.1**(57) **ABSTRACT**

A rack for supporting an object inside a car includes a holder member and a support member. The holder member is formed of a holder base and a bendable mounting plate that is fixedly connected to the holder base. The bendable mounting plate has an inner side facing the holder base and spacedly disposed from the holder base, and an outer side opposite to the inner side for bonding to a flat wall or a smoothly arched surface inside a car. The support member has a first end connected to the holder base and a second end thereof for supporting an object.





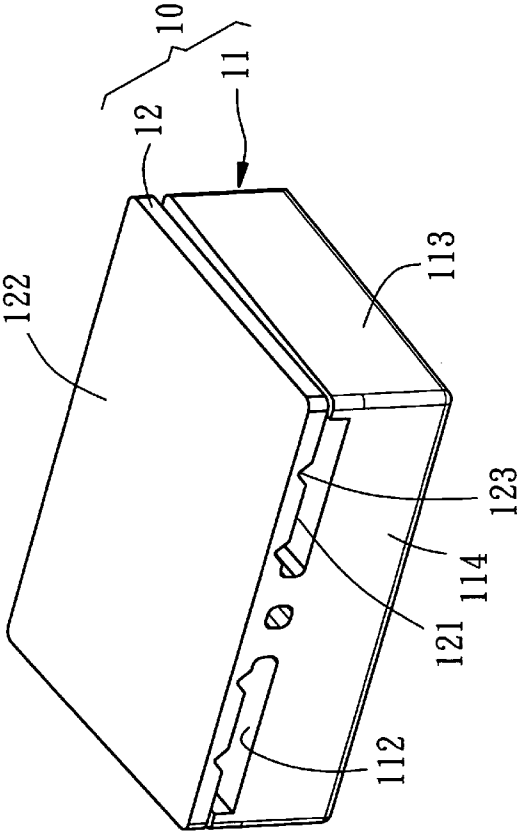


FIG. 3

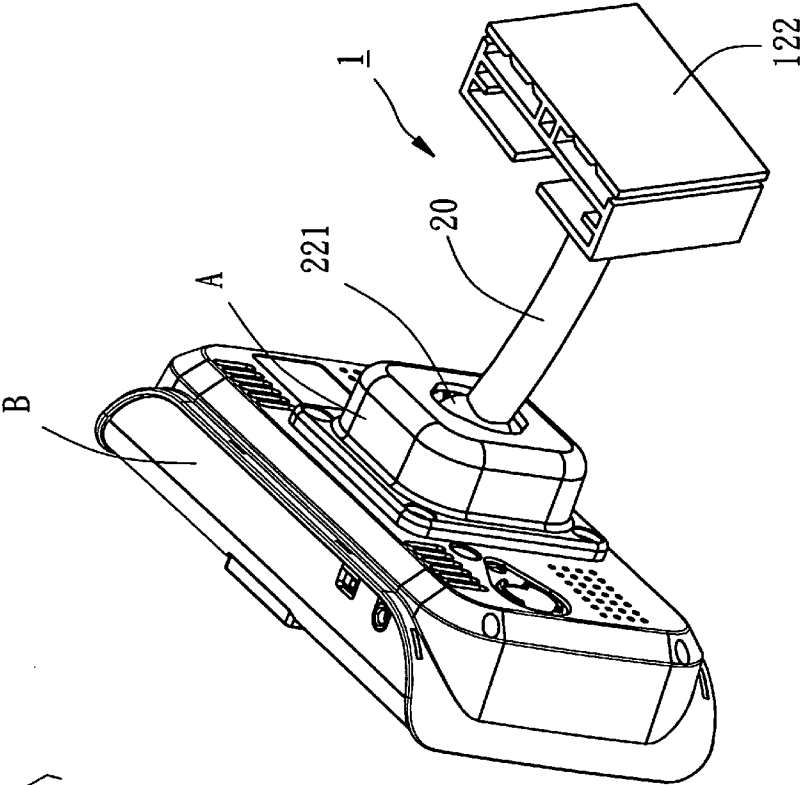


FIG. 4

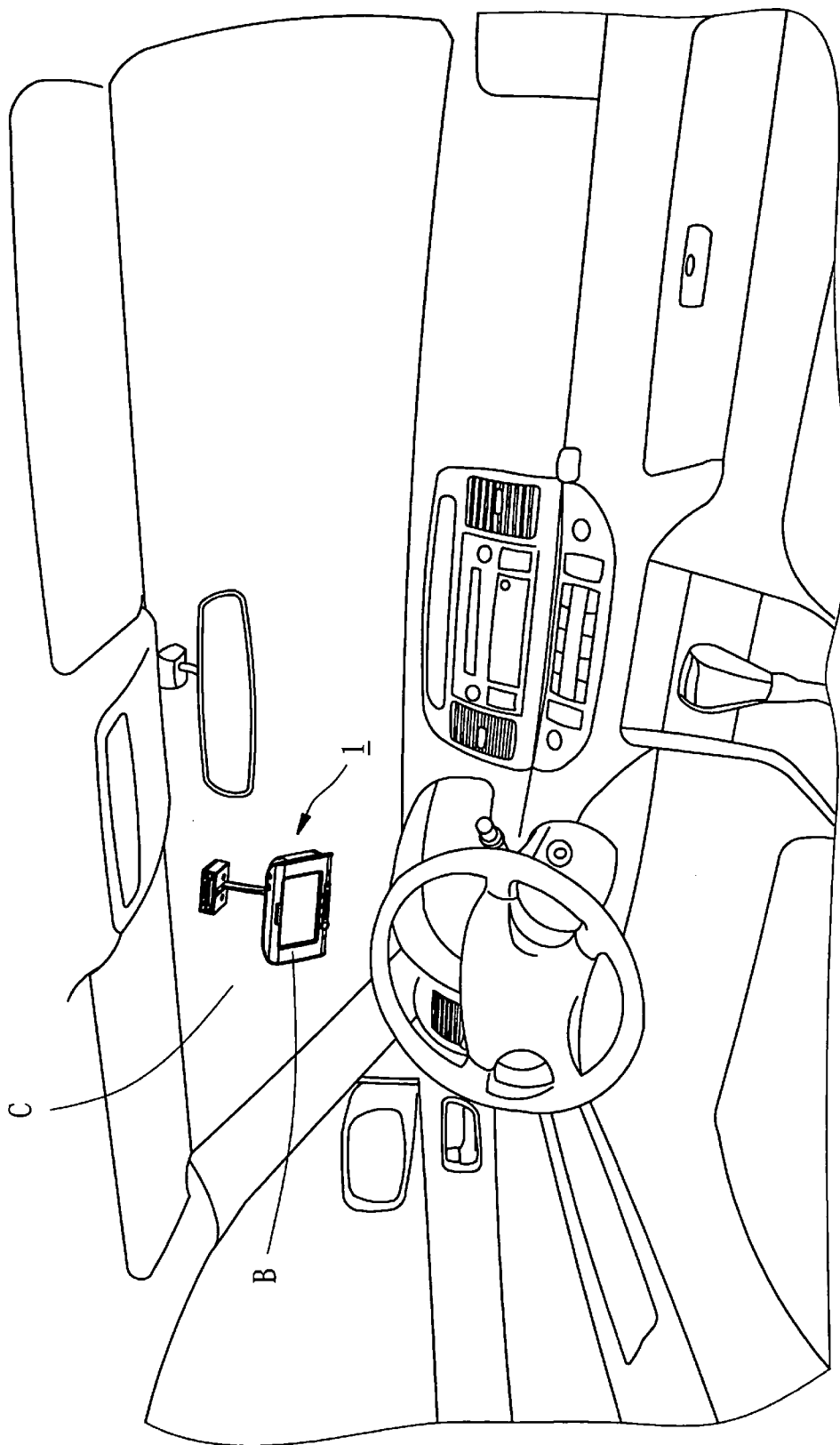


FIG. 5

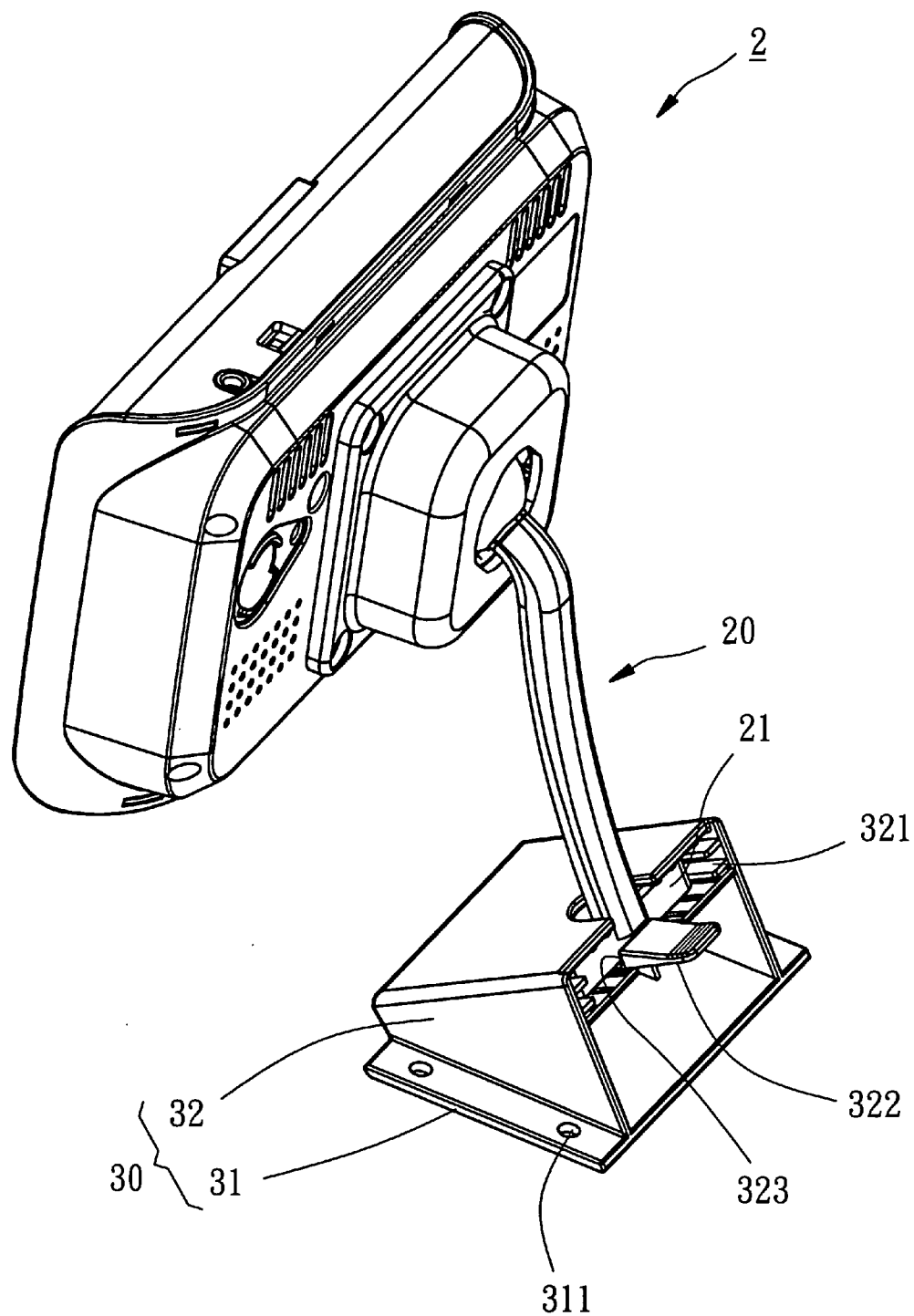


FIG. 7

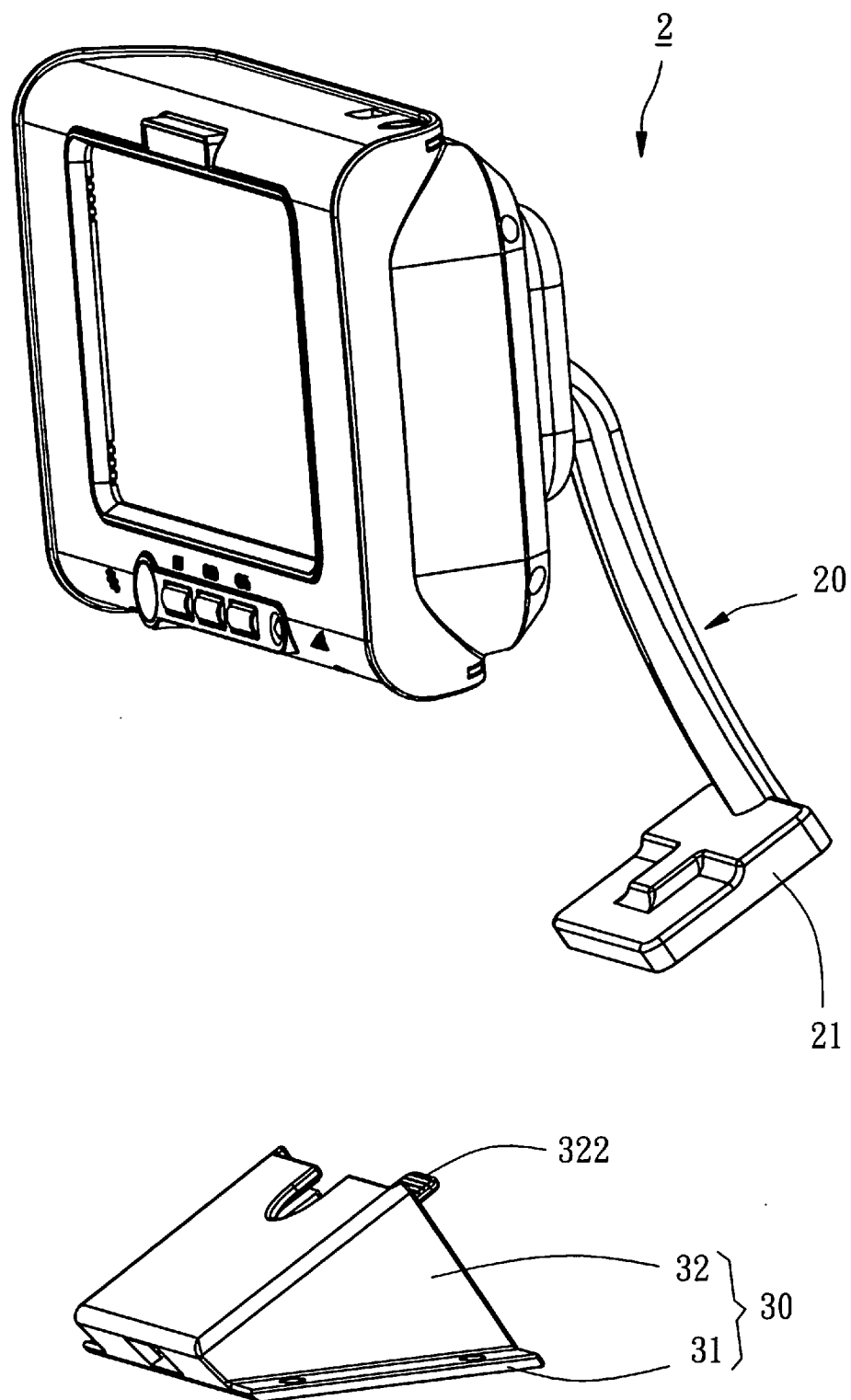


FIG. 8

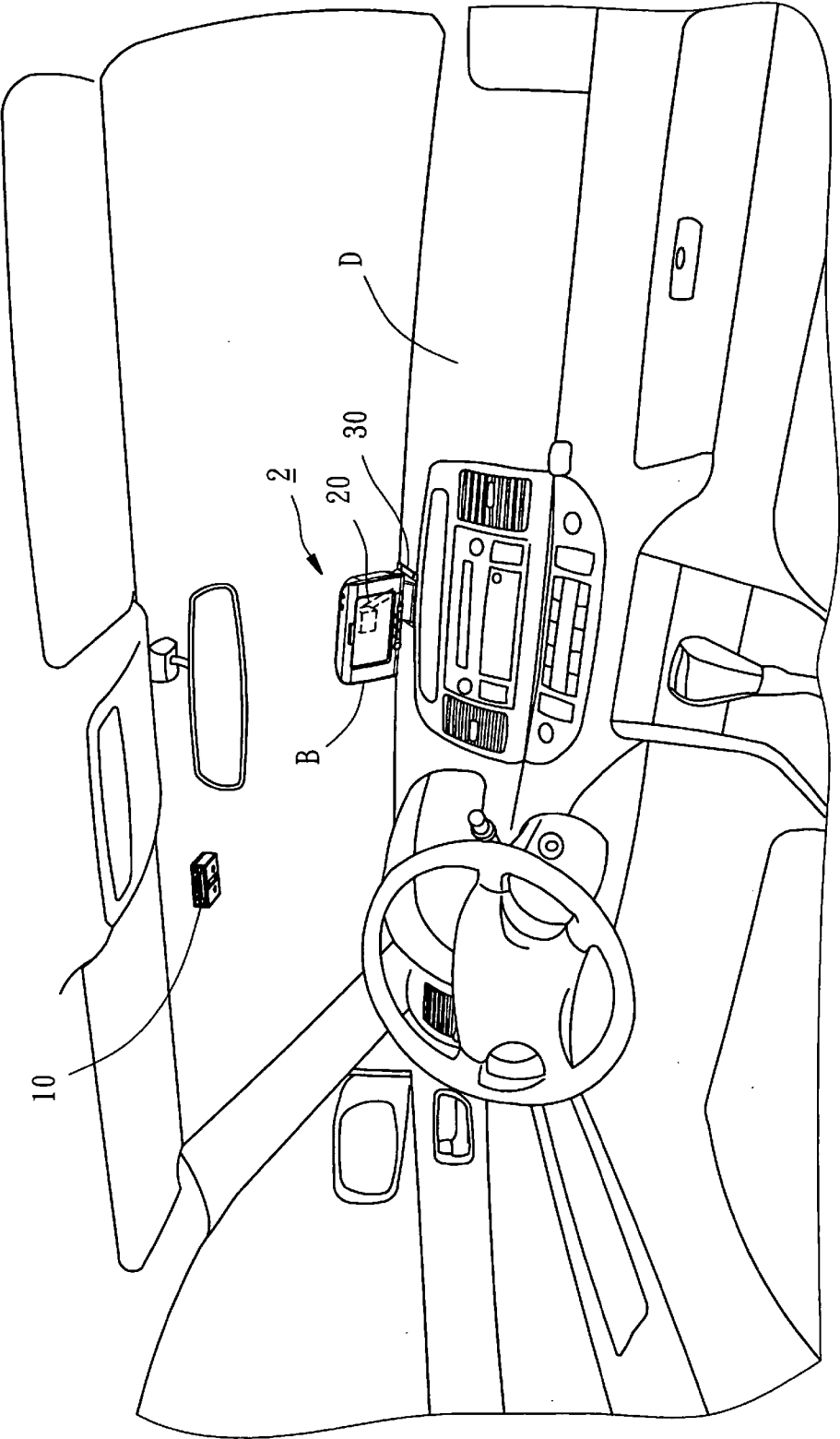


FIG. 9

RACK FOR SUPPORTING OBJECT IN MOTOR VEHICLE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to motor vehicle accessories and more particularly, to a rack for mounting inside a motor vehicle to support an object.

[0003] 2. Description of the Related Art

[0004] Various rack means are commercially available for use inside a motor vehicle for supporting an object (for example, display). A conventional rack for this purpose is known comprising a holder member and a support member. The support member has one end connected to the holder member and the other end for supporting an object usable in a motor vehicle. The holder member has a bonding side for bonding to the inner surface of the windshield glass of a motor vehicle with a glue or double-sided adhesive tape. Thus, the rack supports an object inside the motor vehicle.

[0005] According to the aforesaid prior art design, the bonding side is not selectively bondable to different surface structures. If the bonding side is a flat bonding surface, it can be bonded to a flat wall inside a motor vehicle. However, if bonding the flat bonding side to the smoothly curved inner surface of the windshield glass of a motor vehicle, the rack may fall with the load from the windshield glass upon a heavy vibration.

SUMMARY OF THE INVENTION

[0006] The present invention has been accomplished under the circumstances in view. It is therefore one object of the present invention to provide a rack, which can be firmly mounted inside a motor vehicle to support an object positively.

[0007] To achieve this object of the present invention, the rack comprises a holder member and a support member. The holder member comprises a holder base and a bendable mounting plate fixedly connected to the holder base. The bendable mounting plate has an inner side facing the holder base and spacedly disposed from the holder base, and an outer side opposite to the inner side for bonding to a flat surface or a smoothly arched surface inside a car. The support member has a first end thereof detachably connected to the holder base of the holder member and a second end thereof for supporting an object.

[0008] In a preferred embodiment of the present invention, the rack further comprises a mounting structure, so that the support member can be selectively coupled to one of the holder member that is, for example, attached to the windshield glass of a car and the mounting structure that is, for example, mounted on the instrument panel of the car.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a perspective view of a rack according to a first preferred embodiment of the present invention.

[0010] FIG. 2 is an exploded view of the rack according to the first preferred embodiment of the present invention.

[0011] FIG. 3 is a perspective view of the holder member of the rack according to the first preferred embodiment of the present invention.

[0012] FIG. 4 is a schematic drawing showing an application example of the rack according to the first preferred embodiment of the present invention.

[0013] FIG. 5 is another schematic drawing showing an application example of the rack according to the first preferred embodiment of the present invention.

[0014] FIG. 6 is still another schematic drawing showing an application example of the rack according to the first preferred embodiment of the present invention.

[0015] FIG. 7 is a perspective view of a rack in accordance with a second preferred embodiment of the present invention.

[0016] FIG. 8 is an exploded view of the rack in accordance with the second preferred embodiment of the present invention.

[0017] FIG. 9 shows an application example of the rack according to the second preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0018] Referring to FIGS. 1-3, a rack 1 in accordance with a first preferred embodiment of the present invention is shown comprising a holder member 10, and a support member 20. The holder member 10 is molded from plastics, comprising a holder base 11 and a mounting plate 12. The holder base 11 is a rectangular box having a front wall 111, a back wall 112 opposite to the front wall 111, two side walls 113 connected between the front wall 111 and the back wall 112 at two opposite lateral sides, and a bottom wall 115 connected to the front wall 111, the back wall 112 and the side walls 113. These five walls 111-115 define an accommodation chamber 115. The front wall 111 has an elongated slot 116 in communication with the accommodation chamber 115, and two through holes 117 at two sides of the elongated slot 116. The mounting plate 12 has an inner side 121 and an outer side 122 opposite to the inner side 121. The mounting plate 12 is integrally connected to the holder base 11 and kept spaced from the back wall 112 at a gap. The inner side 121 has a plurality of grooves 123 extending from one side edge to the opposite side edge and spaced from one another at an equal pitch, thereby making the mounting plate 12 bendable.

[0019] The support member 20 comprises a coupling block 21 and a support arm 22. The coupling block 21 is receivable in the accommodation chamber 115 of the holder base 11, having two screw holes 211 formed on the front side thereof corresponding to the through holes 117 of the holder base 11. Therefore, two screws (not shown) can be inserted through the through holes 117 and threaded into the screw holes 211 to affix the coupling block 21 to the holder base 11. The support arm 22 is a long bar outwardly extending from the front side of the coupling block 21 and terminating in a ball head 221 for the mounting of an object to be supported on the rack 1.

[0020] Referring to FIGS. 4-6, the rack 1 can be mounted inside a motor vehicle to support a display B. The ball head 221 of the support member 20 is coupled to a ball socket A at the back side of the display B (see FIG. 4), and then the outer side 122 of the mounting plate 12 is bonded to the

inner surface of the windshield glass C of the motor vehicle with a double-sided adhesive tape (see FIG. 5). Thus, the rack 1 supports the display B inside the motor vehicle. When driving the motor vehicle, the driver can read the displayed data from the display B. As shown in FIG. 6, the grooves 123 make the mounting plate 12 bendable so that the mounting plate 12 can be curved to fit the curvature of the inner surface of the windshield glass C and then firmly adhered to the inner surface of the windshield glass C.

[0021] In addition to the holder member and the support member, the rack provided by the present invention can further comprise an additional mounting structure, so that the support member can be selectively coupled to one of the holder member and the mounting structure. FIGS. 7 and 8 show a rack 2 in accordance with a second preferred embodiment of the present invention, comprising a support member 20 and a mounting structure 30. The mounting structure 30 is molded from plastics, comprising a mounting base 31 and a holder body 32. The mounting base 31 is a flat mounting plate having a plurality of mounting through holes 311 at two opposite lateral sides for fastening to a part inside a motor vehicle with screws. The holder body 32 is fixedly connected to the mounting base 31, having a coupling open chamber 321 sloping in one direction relative to the mounting base 31 and a retaining member 322 extending outwards from a back wall of the coupling open chamber 321. The retaining member 322 has a stop wall 323 facing the opening of the coupling open chamber 321. According to this embodiment, the coupling open chamber 321 and the mounting base 31 define a contained angle of 30 degrees.

[0022] The coupling block 21 of the support member 20 is inserted into the coupling open chamber 321 and stopped against the stop wall 323 of the retaining member 322, which holds the coupling block 21 firmly inside the coupling open chamber 321.

[0023] As shown in FIG. 9, the support member 20 that supports the display B is coupled to the mounting structure 30 that is mounted on the instrument panel D of the motor vehicle. Alternatively, the support member 20 that supports the display B can be coupled to the holder member 10 that is attached on the windshield glass C of the motor vehicle.

[0024] Although a particular embodiment of the invention has been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. Accordingly, the invention is not to be limited except as by the appended claims.

What is claimed is:

1. A rack comprising:

a holder member having a holder base and a bendable mounting plate fixedly connected to said holder base, said bendable mounting plate having an inner side facing said holder base and spacedly disposed from said holder base, and an outer side opposite to said inner side; and

a support member having a first end thereof detachably connected to said holder base of said holder member and a second end thereof for supporting an object.

2. The rack as claimed in claim 1, wherein said bendable mounting plate and said holder base are molded from plastics in integrity.

3. The rack as claimed in claim 1, wherein said holder base has an accommodation open chamber; the first end of said support member is provided with a coupling block that is insertable into said accommodation chamber of said holder base.

4. The rack as claimed in claim 3, wherein said holder base has a front wall, a back wall, two sidewalls, and a bottom wall and the front wall, the back wall, the sidewalls and the bottom wall of said holder base define said accommodation open chamber; the inner side of said bendable mounting plate faces the back wall of said holder base.

5. The rack as claimed in claim 4, wherein said front wall of said holder base has an elongated slot in communication with said accommodation open chamber.

6. The rack as claimed in claim 5, wherein the front wall of said holder base has two through holes symmetrically disposed at two sides of said elongated slot; the coupling block of said support member has two screw holes, which are respectively aimed to the through holes of said holder base after insertion of said coupling block into said accommodation open chamber, so that two screws can be respectively threaded into the screw holes of said coupling block through the two through holes of said holder base to fix said support member to said holder base.

7. The rack as claimed in claim 6, wherein said support member is provided at the second end thereof with a ball head for supporting the object.

8. The rack as claimed in claim 1, wherein the inner side of said bendable mounting plate has a plurality of grooves extending from one side edge to an opposite side edge thereof and spaced from one another.

9. The rack as claimed in claim 1, further comprising a mounting structure such that the first end of said support member can be selectively detachably connected said holder base or said mounting structure.

10. The rack as claimed in claim 9, wherein the first end of said support member is provided with a coupling block and said mounting structure comprises a mounting base and a holder body fixedly connected to said mounting base, said mounting base having a plurality of mounting through holes through which screws are respectively insertable such that said mounting base can be fastened to a part inside a motor vehicle by said screws, said holder body having a coupling open chamber sloping in one direction relative to the mounting base and a retaining member extending outwards from a back wall of said coupling open chamber, said coupling open chamber defining with said mounting plate a contained angle within 10-45 degrees, the coupling block of said support member being received in the coupling open chamber of said holder body and stopped by said retaining member.

* * * * *