ACCESSORY SUPPORT SYSTEM

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ABSTRACT

In a support system for supporting objects on an air outlet register, a mounting body is provided with opposite spaced parallel front and rear walls and the rear wall includes adjustable clips for engaging tabs of the register for supporting the mounting body adjacent the register and the front wall of the body includes engagement means for engaging various objects or articles to be supported on the mounting body.
ACCESSORY SUPPORT SYSTEM

BACKGROUND OF THE INVENTION

[0001] The invention relates to an accessory support system for supporting articles on registers, particularly the heating and cooling air registers in the dashboard of a motor vehicle.

[0002] Automobile drivers often wish to support certain articles such as a cellular telephone or a cup readily accessible at the dashboard of the automobile. To this end, support structures are known which can be mounted to the dashboard by screws which however causes some damage. It is also known to mount the support structures by cementing using an adhesive surface. Such an arrangement, however, also leaves generally visible marks on the dashboard and, furthermore, the structure may come loose when subjected to excessive heat for example by exposure to the sun in the summertime. Particular support structure have also been offered which can be mounted to the air outlet registers of the dashboard of an automobile by way of clips by which one or more of the register fins are firmly engaged. However, the registers of different vehicles are often quite different in width and spacing. And although most register fins extend horizontally in some automobiles, the outer accessible register fins extend vertically. To accommodate the registers of all automobiles support structures, different clip arrangements must therefore be made available. Furthermore, the various devices must all be provided in different design depending on the type of register to which they are to be mounted. This of course causes increased manufacturing and particularly increased handling and storage expenses.

[0003] It is therefore the object of the present invention to provide a support system, wherein a single mounting arrangement is adaptable to the various air outlet register designs independently of the width or the orientation of the register fins and also to the various articles to be supported.

SUMMARY OF THE INVENTION

[0004] In a support system for supporting objects on an air outlet register, a mounting body is provided with opposite spaced parallel front and rear walls and the rear wall includes adjustable clips for engaging ribs of the register for supporting the mounting body adjacent the register and the front wall of the body includes engagement means for engaging various articles to be supported on the mounting body.

[0005] With this support system, the support body can be mounted in proper positions on any air outlet, no matter whether the outlet fins are horizontal or vertical and it can be mounted with a selectable spacing therefrom and even at selectable angles relative thereto. A particular support device or article as desired can then be attached to the support face of the support device depending on what article the user wishes to be supported.

[0006] The invention will become more readily apparent from the following description of preferred embodiments thereof on the basis of the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1 is a cross-sectional view of the support system according to the invention showing a support body with mounting clips at one side and engagement means on the other side for the mounting of certain support devices or articles, which are designed to be engaged by the engagement means,

[0008] FIG. 2 is a top view of FIG. 1 showing the engagement clip arrangement,

[0009] FIG. 3 is a side view of the support structure as shown in FIGS. 1 and 2,

[0010] FIG. 4 is a bottom view of the support body as shown in FIG. 1 with the clips removed to show the support slots, in which the clips are adjustably engaged,

[0011] FIG. 5 is a view similar to FIG. 1 with a support magnet integrated directly into the support body for holding articles including magnetic material,

[0012] FIG. 6 is a view similar to FIG. 1 with a U-shaped support structure integrated into the front face of the support for engaging articles provided with a button-like support member like certain cellular phones, and

[0013] FIG. 7 is a top view of the arrangement as shown in FIG. 6 to show the shape of the U-shaped support structure.

DESCRIPTION OF PREFERRED EMBODIMENTS

[0014] The accessory support system as shown in FIG. 1 comprises a hollow body 1 having spaced parallel front and rear walls 2 and 3 and side walls 4 extending between the front and rear walls. The front wall 2 includes claws 2a for engaging various support accessories such as telephone holders or cup holders in a way as disclosed for example in Applicant’s earlier U.S. Pat. No. 5,790,995.

[0015] The rear wall 3 as shown in plain view in FIG. 4 includes spaced parallel slots 4a, 5a, and 6a provided with enlarged center portions 4b, 5b, and 6b for mounting clips 7 (FIGS. 1 and 3) to the rear wall 3. Each mounting clip 7 has a root portion 8 and a clip portion 9. The root portion 8 includes a square stem 10 provided with engagement wall members 11, which are disposed in spaced relationship from each other by a distance corresponding to the thickness of the rear wall 3. The diameter of the engagement wall members 11 corresponds to the width of the enlarged center portions 4b, 5b, 6b of the parallel slots 4, 5, and 6, so that the root portion 8 can be inserted into the parallel slots 4, 5, 6 through the center portions 4a, 5a, 6a and then moved toward the narrower ends of the slots for engagement of the root portions with the rear wall of the hollow body 1. The square stem sections 10 of the root portion have a diameter corresponding to the width of the parallel slots 4, 5, 6 and an axial length corresponding to the thickness of the rear wall 3 of the body 1. The root portions can therefore be installed in the slots 4, 5, 6 selectively in any 90° displaced angular position so that they can be set for the clip structures at their opposite ends to engage selectively vertical or horizontal air outlet fins.

[0016] The clip portion 9 includes a support bar 12 with a hook-like end portion 13 and a resilient clip member 14 for holding an air outlet fin in engagement with the support bar 12. The support bar has a toothed area 12a and carries an abutment member 15, which is longitudinally movably supported on the support bar 12. The abutment member 15
is provided with a projection 16 for engaging an outlet fin longitudinally between the end portion 13 of the support bar 12 and the projection 16 of the abutment member 15. The abutment member 15 also includes a ratchet means engaging the toothed area 12a in order to retain the abutment member 15 in position in engagement with a particular fin of the air outlet register.

[0017] FIGS. 1 and 3 show the mounting clip 7 attached in the same mounting slot 4 in an orientation as they should be installed with register including horizontal fins. They could however also be installed in different mounting slots and be turned by 90°. Furthermore, they are shown mounted with the stem section 10 closest to the clip portion engaged in the slot 4 so that the body 1 is arranged closest to the air outlet. Other sections 10 could be used for the installation of the mounting clips on the body 1 whereby the body 1 can be supported in a selectably spaced relationship from the air outlet.

[0018] While FIGS. 1 and 2 show the front wall provided with claws arrangement means other engagement means may be provided on the front wall.

[0019] FIG. 5 shows for example a hollow body with a front wall 2', in which a magnet 20 is mounted. The magnet 20 and the front wall 2' is additionally covered by a foamed rubber sheet 21. This provides for a support structure engaging any article that includes a magnetic material as for example most cellular telephones do.

[0020] FIGS. 6 and 7 show a hollow body with a front wall 2' provided with a U-shaped raised portion 22 forming an open channel 23 for receiving a button-like mounting member as they are provided on certain articles such as for example on some cellular telephones for engaging and supporting the cellular telephone.

[0021] Such magnetic support or U-shaped engagement structures may of course also be provided on plates, which have openings for receiving the claws 2a as shown in FIGS. 1 and 2 and which can therefore be mounted on the hollow body 1 as shown in FIGS. 1 and 2 for supporting specific articles so that no special hollow body with the support structures embodied therein needs to be provided.

What is claimed is:

1. A Support System for Supporting objects on an air outlet register, comprising a mounting body having opposite spaced parallel front and rear walls, said rear walls being provided with clips for engaging ribs of said register for supporting said mounting body adjacent said register and said front wall including engagement means for engaging various objects to be supported on said mounting body.

2. A support system according to claim 1, wherein said engagement means are claws adapted for reception in corresponding openings formed in said objects for engaging said objects with said mounting body.

3. A support system according to claim 1, wherein said engagement means includes a front plate having a permanent magnet disposed therein for engaging and supporting an article including a magnetic material.

4. A support system according to claim 1, wherein said engagement means includes a front plate having a U-shaped raised portion forming an open-ended recess for receiving a button-like support member as it is provided on certain objects.

8. A support system according to claim 1, wherein the rear wall of said mounting body is provided with at least one slot having a predetermined width and said clips have roots with grooves having a width corresponding to the thickness of said rear body wall said receiving the edges of said rear wall forming said slots.

9. A support system according to claim 8, wherein said slots each has an enlarged center area and the roots of said clips have several longitudinally spaced circumferential grooves with a groove core area of square cross-section and the root portions between and adjacent said grooves have a diameter corresponding to the width of the enlarged center area permitting the insertion of a selected one of said grooves into said slot in said rear body wall.

10. A support system according to claim 9, wherein more than one such slot is formed in the rear wall of said mounting body said slots being arranged in spaced parallel relationship.