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H. S. BRINK

2,677,415

COMBINATION ARMREST AND DOOR HANDLE

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FIG. 1.

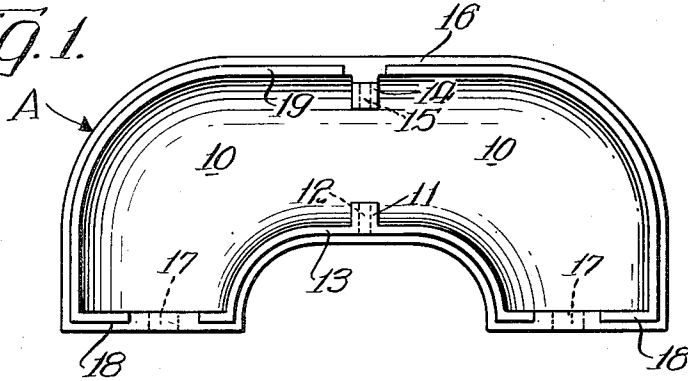


FIG. 2.

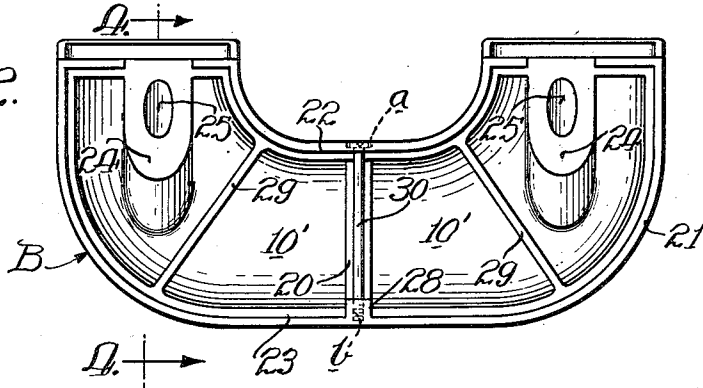


FIG. 3.

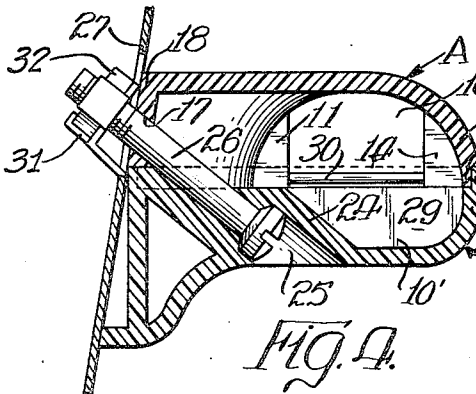
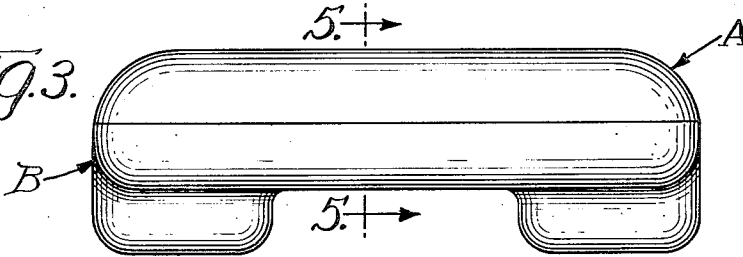
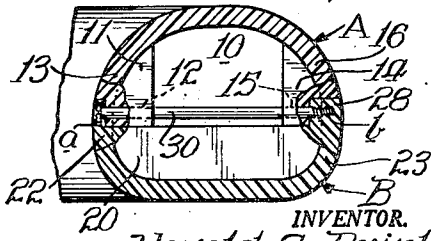


FIG. 5.



INVENTOR.
Harold S. Brink
BY
Wm. W. Wm.
Attys.

UNITED STATES PATENT OFFICE

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COMBINATION ARMREST AND DOOR HANDLE

Harold S. Brink, Elmwood Park, Ill.

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11 Claims. (Cl. 155—198)

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This invention relates to a combination arm rest and door handle for use on automobiles. The upper surfaces of most automobile arm rests have a layer of padding covered by a fabric or leather. This type of construction is quite costly and experience has shown that the covering material frequently has to be replaced due to disintegration from hard usage.

The arm rest of my invention is made of special plastic materials which will last almost indefinitely, and is so designed and constructed as to materially lower the cost while at the same time providing a great improvement over automobile arm rests heretofore used.

The objects of my invention are to provide a combination arm rest and door handle of greater durability and longer life.

Another object is to provide an arm rest which may be made by the injection molding process thus achieving manufacturing economy.

Another object is to provide an arm rest of two complementary sections which may be easily and quickly assembled in the manufacturing process.

Another object is to provide an arm rest of pleasing appearance and comfort.

Other objects and advantages will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawings wherein a preferred embodiment of the invention is shown. However, it will be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawings:

Figure 1 is a bottom plan view of the upper resilient section comprised in the present arm rest;

Fig. 2 is a top plan view of the lower section thereof;

Fig. 3 is a front elevation of the two sections assembled;

Fig. 4 is a sectional view taken on line 4—4 of Fig. 2; and

Fig. 5 is a sectional view taken on line 5—5 of Fig. 3.

The combination arm rest and door handle of my invention comprises two complementary superposed sections which define an enclosed space therebetween. Both sections have a like endwise-bowed contour in the general shape of a wide arch, as shown in Figs. 1 and 2. The upper section A is molded of a resilient plastic, such as

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vinyl, and is hollowed or dished out at 10 (see Figs. 1 and 4). This reduces the weight and amount of material needed and increases its cushioning properties. A depending lug 11 having a hole 12 extends transversely from the inner side wall 13 and an opposed lug 14 having a hole 15 extends inwardly from the outer side wall 16. Oblique holes 17 are formed near opposite ends of the upper section A, these holes being exposed on the rear wall 18, as shown in Figs. 1 and 4. The bottom edge 19 of the upper section A is desirably rabbeted on its outer face, as shown in Fig. 4.

The lower section B is molded of a relatively rigid and non-resilient plastic material, such as cellulose acetate butyrate, and is also hollowed or dished out at 10' (Figs. 2 and 4). This is done to reduce weight and material. A cross rib 20 having its top edge flush with the base of a rabbet in the inner face of the top edge 21 of the lower section B is opposed to the lugs 11 and 14 of the upper section A.

Bosses 24, each with a hole 25 extending obliquely therethrough, are positioned so as to line up with the holes 17 of the upper section A. A pair of bolts (or screws) 26 (Fig. 4), when extended through the holes 25 and 17 and into an automobile door 27, provides a secure anchorage for the arm rest. A pair of clips 31 (see Fig. 4) may be struck out from the door 27 to engage nuts 32 that are screwed on to the bolts 26 thereby to hold the nuts against rotation. The rabbeted meeting edge 21 of the lower section B is arranged to interfit with the rabbeted edge 19 of the upper section A. The inner side wall 22 is provided with a through hole *a*, and aligned therewith is a confronting socket *b* in a head 28 which is positioned adjacent the outer side wall 23. Obliquely disposed ribs 29, as shown in Fig. 2, serve to strengthen the lower section B.

When the upper and lower sections are assembled, the rabbeted meeting edges 19 and 21 interfit so as to confine the upper resilient section A against lateral movement. The depending lugs 11 and 14 substantially abut the upstanding cross rib 20, the holes 12 and 15 then being in alignment with the hole *a* in the inner wall 22 and the socket *b* in the outer wall head 28. A bolt 30 having a self-tapping nose is extended through the hole *a* in the wall 22, thence through the holes 12 and 15 in the lugs 11 and 14, and then, by self-tapping, into the socket *b* where it is secured to the head 28. This transverse locking bolt 30 thus constitutes a very simple and effective

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single means of locking the two sections A and B firmly together in unitary relation.

The oblique holes 17 and 25 are in alignment, when the sections A and B are assembled, so that when bolts 26 are inserted therein to fasten the arm rest to a door they supplement the transverse bolt 30 in locking the arm rest sections securely together. It will be noted that the attaching bolts 26 have their heads substantially concealed in countersinks at the outer ends of the holes 25 which are exposed only on the underside of the arm rest. It may be found desirable to cement the meeting edges with a suitable adhesive such as a mixture of dichlorethylene and cylahehexanone, thereby sealing any narrow openings that might otherwise be present therebetween.

In use the upper flexible section will be subjected to most of the pressure and wear resulting from arm contacts therewith. It is important that this section in particular be adequately supported and marginally confined. This end is achieved by providing the upwardly facing seat along the upper edge of the lower section which receives and overlaps the lower edge of the flexible upper section. When the two sections are united and secured tightly to each other and to a door whereon the arm rest is affixed, the upper section is firmly anchored in place, and cannot, through deformation consequent upon flexation, shift its position laterally with respect to the lower section. The limited flexibility thus allowed to the upper section is a factor of enhanced comfort to the person whose arm is rested with varying pressure upon the arm rest so constructed.

The differing characteristics of the materials which may be chosen for the upper and lower sections present some advantages and also certain problems. For example, the upper section which is flexible and yielding to provide a comfortable cushion, may not be endowed with the necessary density and toughness to withstand the localized pressure usually encountered from the head of a connecting screw or bolt. The lower section on the other hand being relatively stiff and tough is entirely adequate to withstand any such pressure. The resulting problem is how, if at all, a bolt or screw may be used to connect one with the other, and also to affix the connected sections to an automobile door, while retaining accessibility without visual exposure of the involved parts.

In the construction shown, the bolt connection whereby the two sections are held in unitary relation is entered through an opening in the inner vertical wall of the lower section and then threaded into a socket formed in a head adjacent the outer wall of the same section. The material of which the lower section is formed is amply strong to sustain the bolt when so disposed for connection with the upper section. In the particular arrangement shown, this bolt is wholly concealed because its head is countersunk in the opening provided through the inner vertical wall of the lower section, and the opposite end of the bolt terminates within the socket that is formed in the head adjacent the outer wall of the same section.

In like manner the connection for mounting the arm rest on the door utilizes a pair of bolts which exert an axial thrust against a relatively vertical wall on the under side of the lower section whose strength is ample to withstand such pressure. Each bolt is extended obliquely up-

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wardly to pass out through an opening at the rear wall of the upper section. In so doing the material of the upper section is subjected to no appreciable pressure whatsoever, the two bolts merely maintaining one section in complementary relation with the other. These bolts are so disposed on the underside of the arm rest with their heads countersunk in the openings provided in the lower section that they are wholly concealed and consequently do not mar or disfigure the arm rest in any way.

There is a further advantage in the use of two unlike materials for the complementary sections of the arm rest, in that a selected finish or texture can be employed for each. For example, the cushion section at the top may be finished in one color or texture, and the lower section which is much less exposed to view may be finished entirely differently. There is thus afforded a wide latitude in two-tone or different finishes and textures available for the two sections of the arm rest, and this may be highly desirable when harmony with the interior of the automobile and the fixtures installed therein are an important consideration.

I claim:

1. A combination arm rest and door handle having a wide arched contour with inner and outer sides between opposite ends thereof comprising two superposed complementary sections defining an enclosed space therebetween, the two sections being provided with upper and lower meeting edges providing a line of separation extending longitudinally of the structure medially thereof, means carried by one section extending between the inner and outer sides of the other section when the two sections are in assembled relation, and a locking bolt removably engaged with the two sides and the means extended therebetween for securing the two sections together in unitary relation.

2. A combination arm rest and door handle according to claim 1 in which the upper section is formed of material that is relatively flexible and resilient, and in which the meeting edges of the two sections along the line of separation therebetween are provided with interengaging means acting to confine the upper section from moving laterally in any direction along its line of separation with the lower section.

3. A combination arm rest and door handle having a wide arched contour with inner and outer sides between opposite ends thereof comprising two superposed complementary hollow sections the upper of which is resilient and yielding, and means interconnecting the two sections as a unit comprising parts of one in vertically lapping relation with parts of the other interiorly thereof, and provided with openings in register with each other and with another opening on the inner wall of the lower section, and a locking element extended axially through all such openings for securement to one of them and countersunk in the opening in the inner wall so as to be wholly concealed from the outer side and top of the arm rest.

4. A combination arm rest and door handle having a wide arched contour with inner and outer sides between opposite ends thereof comprising two superposed complementary sections, provided with upper and lower meeting edges providing a line of separation extending longitudinally of the structure medially thereof, a head formed in one section adjacent one side, apertured

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lugs carried by the other section extending between the sides and in line with said head of the first section when the two sections are in assembled relation, and a locking bolt removably engaged with one side and the head of the one section and the lugs carried by the other section extended therebetween, for securing the two sections together in unitary relation.

5. A combination arm rest and door handle having a wide arched contour with spaced inner and outer sides between opposite ends thereof comprising two superposed hollow sections, the upper one of resilient plastic material and the lower one of non-resilient plastic material, continuously extending interfitting means on the meeting edges of said upper and lower sections, a pair of spaced lugs depending from the upper section, each lug being arranged to engage one of the spaced sides of the lower section thereby to hold one section against movement transversely of the other section, and a positive lock extending between each lug and the spaced sides of the lower section and parallel with the meeting edges of the two sections for preventing separation thereof.

6. A combination arm rest and door handle having a wide arched contour with spaced inner and outer sides between opposite ends thereof comprising two superposed hollow sections, the upper one of resilient plastic material and the lower one of non-resilient plastic material, continuously extending interfitting means on the meeting edges of said upper and lower sections, a cross rib provided in one section, means integral with the cross rib in engagement with the sides of the other section to hold the one section against movement transversely of the other section, and a positive lock extending between the cross rib and the spaced sides of the other section and parallel with the meeting edges of the two sections for preventing separation thereof.

7. A combination arm rest and door handle comprising a hollow upper section and a complementary lower section, the two sections defining between them a single enclosed space, continuously extending interfitting means on the meeting edges of both sections, a cross rib integral with one section and protruding into the hollow of the other section, and a single locking means traversing portions of the cross rib and of said other section to interconnect the two sections against separation, the whole adapted as a unit to be attached to a door.

8. A combination automobile arm rest and door pull having a wide arched contour with inner and outer sides between opposite ends thereof com-

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prising an upper section made of resilient material and a lower section made of nonresilient material, the meeting edges of the upper and lower sections being rabbeted to interfit when in assembled relation, a lug depending from the upper section medially of its ends and provided with an endwise passageway therethrough, and a bolt extended horizontally through the inner side of the lower section, longitudinally through the passageway of the lug of the upper section, and terminating within the outer side of the lower section.

9. A combination arm rest and handle for a door, comprising: a bottom section; a separable normally superposed top section thereon; and an attaching member extending through a portion of the bottom section, through a portion of the top section, and engaging the door simultaneously for retaining the bottom and top sections in assembled relationship and for securing said assembly to the door.

10. A combination arm rest and handle for a door structure, comprising: a bottom section; a separable normally superposed top section thereon with the contacting surfaces defining a plane of separation; and an attaching member extending through a portion of the top section and intersecting said plane of separation, through a portion of the top section, and engaging the door simultaneously for retaining the bottom and top sections in assembled relationship and for securing said assembly to the door.

11. The arm rest of claim 10 wherein said attaching member comprises a bolt having a head end and a threaded end, the head end engaging a portion of said bottom section and the threaded end engaging the door structure when said bottom and top sections are in assembled relationship against said door structure.

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