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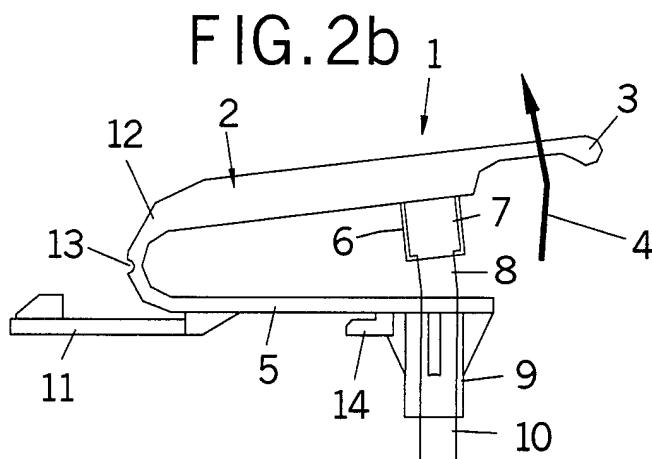
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(54) **Actuating handle for opening a motor vehicle bonnet**

(57) It comprises a handle section adapted to act on one end of a driving cable running inside a sheath intended for releasing the motor vehicle bonnet, elastic means for returning of the position of said handle body and a supporting section of said handle. The handle section, the elastic means and the supporting section of said actuating handle are all formed in a single piece of elastic material. The handle section extends into the

supporting section. The handle section comprises clamping means of the end of the cable and the supporting section includes a retaining means of the sheath of said cable inside of which the cable may be displaced. The clamping means and the retaining means are aligned to each other in a rest position.

The simplified configuration of the actuating handle provides many advantages such a reducing costs and problems during operation.



Description

[0001] The present invention relates, as stated in its title, to an actuating handle for opening a motor vehicle bonnet which novel manufacturing, conformation and design features provide many advantages as it will be detailed in the present specification.

[0002] They are known in the art devices for locking a motor vehicle bonnet which are released from the inside of the motor vehicle through a driving cable linked to said locking device and to an actuating handle.

[0003] A conventional actuating handle for driving the cable causing the opening of a motor vehicle bonnet is formed basically of three parts: a handle body acting on the driving cable end arranged inside a sheath, resilient means for bringing said handle body back to its position, and a supporting body for said actuating handle.

[0004] The supporting body is mounted fixed to the bodywork of the motor vehicle and resilient means usually comprise a spring acting on the handle body to bring it back to its initial position once it has been already actuated.

[0005] The present invention provides an actuating handle having a considerably simpler configuration with regard to conventional actuating handles as described regarding the state of the art. A simplified configuration, as it will be described hereinafter, provides logical advantages of reduced costs and problems during operation.

[0006] The invention therefore provides that the handle body, the resilient means and the supporting body are all formed of a single, resistant plastic piece made of an elastic material.

[0007] The single piece forming the actuating handle of the present invention has a handle section extending into a supporting section. Said handle section is provided with a clamping means for clamping the driving cable end, while the supporting section includes driving cable sheath retaining means. Said cable sheath retaining means is a hollow body that allows sliding of the driving cable as the handle is actuated for releasing the vehicle bonnet. Clamping means and retaining means are usually aligned to each other in a rest position.

[0008] On the other hand, the supporting section has a supporting member extending therefrom which is adapted to be attached to the vehicle bodywork helped by fastening flanges.

[0009] According to the invention, the handle section and the supporting section are substantially parallel, defining a generally U-shaped configuration in a rest position. The handle section and the supporting section are joined by an elastic section that brings both sections back to said parallel configuration after the handle section has been actuated.

[0010] The user pulls the handle section outwards, that is, in a direction to which said handle section separates from said supporting section, against the action of said elastic section. It should be noted that in order

of facilitating the movement of the handle section in the driving direction the invention provides that said handle section has a reduced thickness portion.

[0011] As the handle section is pulled, the driving cable is moved since it is linked through a terminal secured at one end thereof to the clamping means of the handle section. Accordingly, displacement of the driving cable results in releasing of the bonnet. In this action, as noted above, the driving cable may pass freely through the supporting section (within the above mentioned retaining means).

[0012] With such a configuration a simpler actuating handle is obtained, with which considerably reducing expenses of production is made possible, and with an effective operation.

[0013] The features and the advantages of the actuating handle of the present invention will be clearer from the detailed description of a preferred embodiment thereof. Said description will be given hereinafter by way of non limitative example with reference to the accompanying drawings, in which:

Fig. 1 is a bottom view of an embodiment example of an actuating handle for opening a motor vehicle bonnet according to the present invention;
Fig. 2a is an end elevation view of the actuating handle in Fig. 1 shown in a rest position;
Fig. 2b is an end elevation view of the actuating handle in Fig. 1 but shown in a operating position;
Fig. 3 is a top plan view of the actuating handle in Fig. 1; and
Figs. 4 and 5 are side elevational views from both sides of the handle in Fig. 1.

[0014] Reference numerals used to define the different parts in the embodiments of the invention are as follows:

- (1) actuating handle;
- (2) handle section;
- (3) reduced thickness portion of the handle section;
- (4) operating direction of the handle;
- (5) supporting section;
- (6) clamping means;
- (7) driving cable terminal;
- (8) driving cable;
- (9) retaining means of the driving cable sheath;
- (10) supporting member of the driving cable;
- (11) supporting member of the supporting section;
- (12) elastic section;
- (13) weakening section; and
- (14) fastening flanges.

[0015] The actuating handle (1) of the embodiment that is herein described according to the figures is formed of a single piece. Said single piece is made of an elastic and resistant plastic material, such as POM, PA, PBT, PE, etc., although it will be understood by

those skilled in the art that other suitable equivalent materials may be used.

[0016] Said single piece defining the actuating handle (1) of the embodiment depicted in Figs. 1 to 5 comprises a handle section (2) extending at its free end into a reduced thickness portion (3) for facilitating actuation by the user. Actuation of the handle (1) is shown according to the direction of the arrow (4) shown in Fig. 2b. The reduced thickness portion (3) may be clearly seen in Figs. 2a-2b.

[0017] Said handle section (2) extends into a supporting section (5) as best shown in said Figs. 2a-2b. In the rest position shown in Fig. 2a, the handle section (2) and the supporting section (5) are substantially parallel, one being separated from the other as the handle section (2) is actuated by the user through the reduced thickness portion (3) thereof in the direction of said arrow (4) in Fig. 2a.

[0018] The handle section (2) has a clamping means (6) extending downwards perpendicular from the lower surface thereof. Clamping means (6) has a cylindrical configuration adapted for retaining therein a terminal (7) of the end of the driving cable (8), as shown in Fig. 2b.

[0019] The supporting section (5) includes a retaining means (9) for retaining the sheath (10) of said driving cable (8). Said retaining means (9) is a hollow cylindrical body allowing the driving cable (8) to be passed there-through but retaining the sheath thereof (10).

[0020] As shown in Fig. 2a, clamping means (6) and the retaining means (9) are substantially aligned to each other in a rest position.

[0021] The assembly of the actuating handle (1) of the invention inside the vehicle is carried out through said supporting section (5), which is intended to be mounted fixed in the vehicle bodywork. For this purpose, said supporting section (5) is provided with a supporting member (11) extending therefrom which is adapted to be fixed to the vehicle bodywork, as noted above, thereby supporting the assembly rigidly. The supporting member (11) acts in conjunction with fastening flanges (14) formed in the lower portion of the supporting section (15), as shown in Figs. 2a-2b.

[0022] As it can be seen from the views in Figs. 2a and 2b of the drawings herein attached, the handle section (2) and the supporting section (5) of the actuating handle (1) are substantially parallel, as noted above. Said configuration defines an assembly having a substantially U-shaped configuration in a rest position as depicted in Fig. 2a.

[0023] According to said Figs. 2a and 2b, both sections (2, 5) of the handle (1) are joined through an elastic section (12). Said elastic section (12) allows both sections (2, 5) to be brought back to the rest configuration shown in Fig. 2a, i. e., to the parallel configuration of the two sections (2, 3), from the actuating position of the handle (1) shown in Fig. 2b. In order to facilitate return of the assembly to its rest position (see Fig. 2a), besides employing the above mentioned suitable plastic materi-

als, said elastic section (12) has a weakening cross section (13). Said weakening cross section (13) further facilitates the pivoting movement of the handle section (2) relative to said supporting section (5) (arrow (4), Fig. 2b).

[0024] In use, the user pulls the handle section (2) (arrow (4)) of the actuating handle (1) outwards which, as stated before, is mounted inside the vehicle through the support (5), against the action of said elastic section (12). On pulling the handle section (2), the driving cable (8) is moved with the handle section (2) since it is fixed thereto by its terminal (7) -Fig. 2b -. Accordingly, displacement of the driving cable (8) results in releasing of the bonnet. This is made possible since, as noted above, the driving cable (8) may run freely inside said retaining means (9) of the sheath (10).

[0025] The handle assembly (2) described with regard to the figures has a considerably simplified configuration relative to conventional actuating handles typically using three parts (handle, support and spring). Reduced expenses of production with an effective operation is therefore achieved.

[0026] Once having been sufficiently described what the actuating handle (1) of the present invention consists in accordance to the enclosed drawings, it is understood that any detail modification can be introduced as appropriate, provided that variations may alter the essence of the invention as summarised in the appended claims.

Claims

1. Actuating handle (1) for opening a motor vehicle bonnet comprising a handle section (2) adapted to act on one end of a driving cable (8) arranged inside a sheath (10) intended for releasing a motor vehicle bonnet, elastic means for returning of the position of said handle body (2) and a supporting section (5) of said handle (1), **characterized in that** the handle section (2), the elastic means and the supporting section (5) of said actuating handle (1) are all formed in a single piece of elastic material, said handle section (2) extending into said supporting section (5).
2. Actuating handle (1) for opening a motor vehicle bonnet as claimed in claim 1, **characterized in that** said handle section (2) comprises clamping means (6) of the end of said driving cable (8) and **in that** said supporting section (5) includes a retaining means (9) of the sheath (10) of said cable (8) inside of which said cable (8) may be displaced, said clamping means (6) and said retaining means (9) being aligned to each other in a rest position.
3. Actuating handle (1) for opening a motor vehicle bonnet as claimed in claim 1, **characterized in that**

said supporting section (5) has a supporting member (11) extending therefrom which is adapted to be fixed to the vehicle bodywork.

4. Actuating handle (1) for opening a motor vehicle bonnet as claimed in any preceding claim, **characterized in that** the handle section (2) and the supporting section (5) are parallel, in said rest position, both being joined by an elastic section (12) bringing both areas (2, 5) back to said parallel configuration after said handle section (2) has been actuated in a given direction (4) of separation thereof.
5. Actuating handle (1) for opening a motor vehicle bonnet as claimed in any preceding claim, **characterized in that** the handle section (2) has a reduced thickness portion (3) for facilitating their movement in said driving direction (4).

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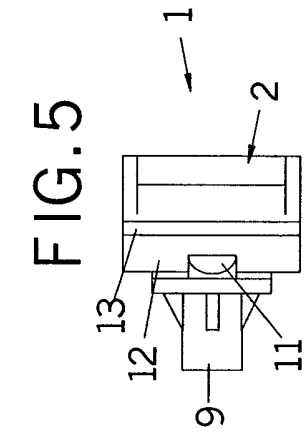
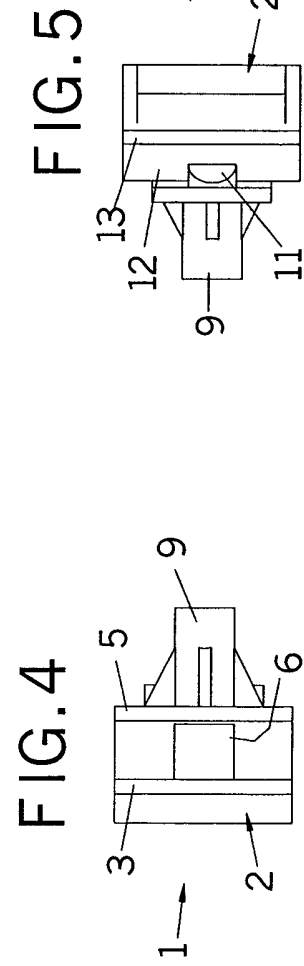
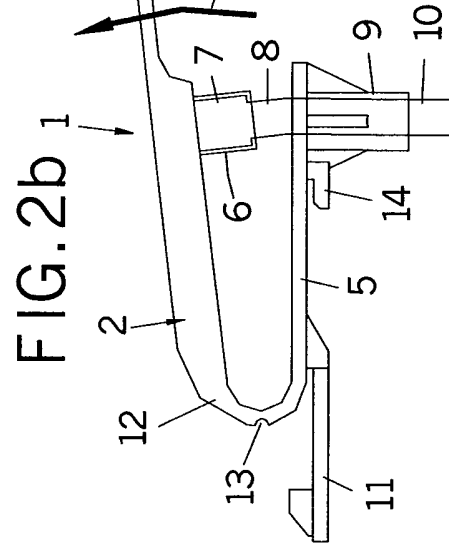
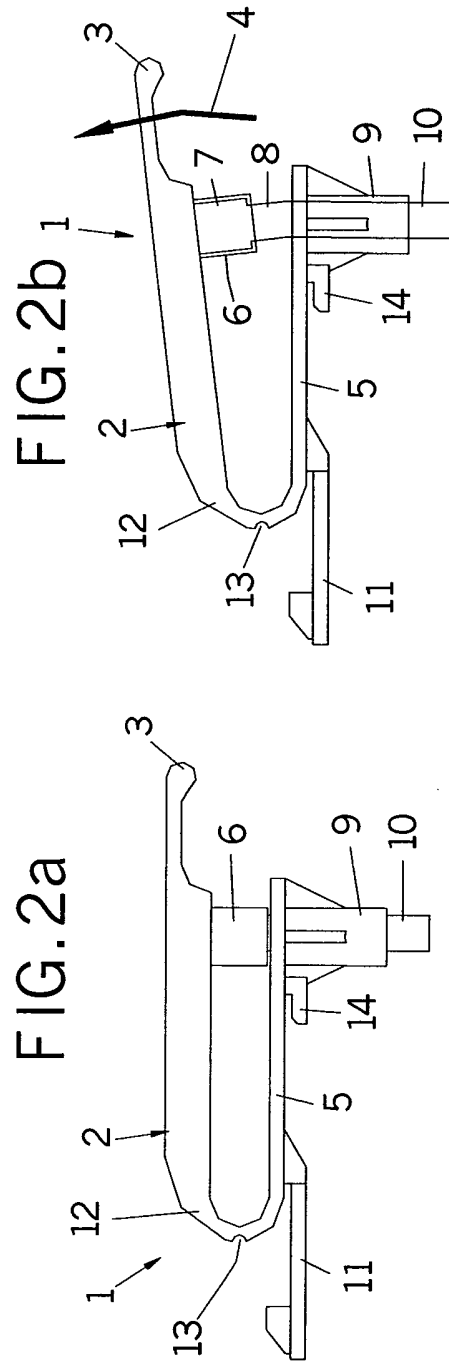
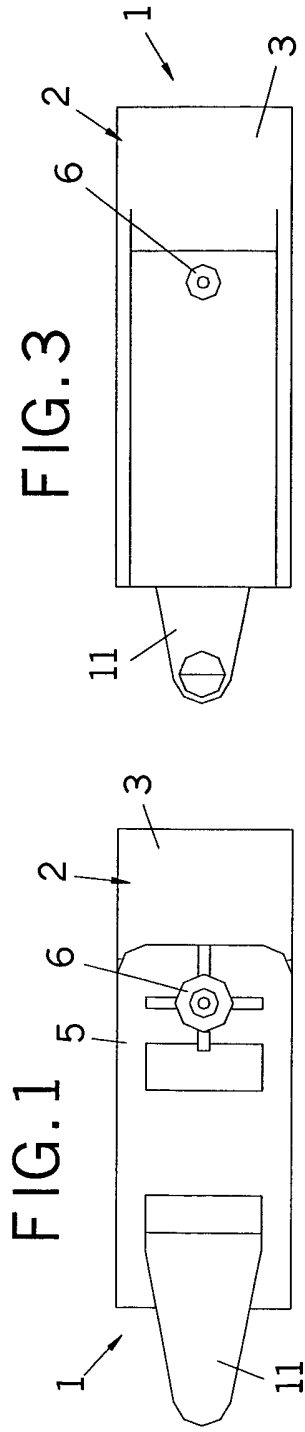


FIG. 3