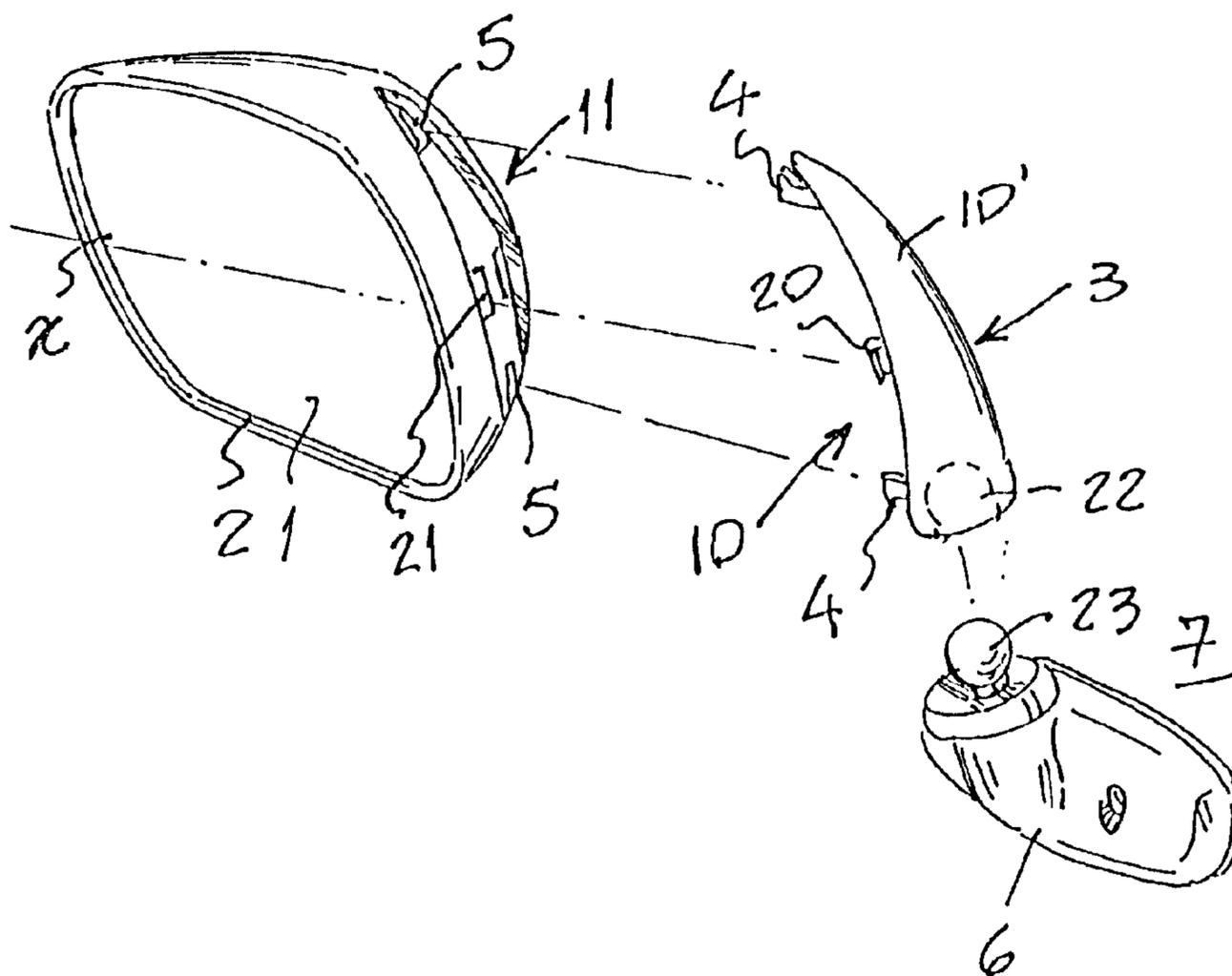




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(54) Titre : RETROVISEUR REVERSIBLE AMELIORE
 (54) Title: IMPROVEMENT IN REVERSIBLE REARVIEW MIRROR



(57) Abrégé/Abstract:

The reversible rearview mirror has a mirror plate (1); a housing (2) which houses the mirror plate, both the mirror (1) and the housing (2) being symmetrical with respect to a horizontal axis (X); a supporting member (3) which is semirigid so as to be bendable when its ends are pressed toward each other in an axial direction; and a base (6) fixed to a vehicle body and on which the supporting member (3) is pivotally mounted and an attachment device for assembling and attaching the housing (2) to the supporting member (3) which is provided between the housing (2) and the supporting member (3). The attachment device includes two L-shaped clamps (4) which extend perpendicularly from respective outside regions of a lateral portion (10) of the supporting member (3) which receives the housing (2); and respective grooves (5) provided in a lateral portion (11) of the housing (2), adjacent to the lateral portion (10) of the supporting member (3), which receive the respective L-shaped clamps (4).

ABSTRACT

The reversible rearview mirror has a mirror plate (1); a housing (2) which houses the mirror plate, both the mirror (1) and the housing (2) being symmetrical with respect to a horizontal axis (X); a supporting member (3) which is semirigid so as to be bendable when its ends are pressed toward each other in an axial direction; and a base (6) fixed to a vehicle body and on which the supporting member (3) is pivotally mounted and an attachment device for assembling and attaching the housing (2) to the supporting member (3) which is provided between the housing (2) and the supporting member (3). The attachment device includes two L-shaped clamps (4) which extend perpendicularly from respective outside regions of a lateral portion (10) of the supporting member (3) which receives the housing (2); and respective grooves (5) provided in a lateral portion (11) of the housing (2), adjacent to the lateral portion (10) of the supporting member (3), which receive the respective L-shaped clamps (4).

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Descriptive report for the Patent of Invention in respect to
Improvement in Reversible Rearview Mirror.

This patent has as purpose an outside rearview mirror, part of automotive vehicle accessories field, and which has received an improvement in order to simplify its construction and use, when comparing with similar ones.

10 Outside rearview mirrors of reversible type have already been known in the art, namely, those which may be used indistinctly on the left or on the right side of the vehicle, which comprise basically a mirror plate; a housing which contains said mirror plate, both symmetrical to the horizontal axis; a rigid rod to which the housing is attached by bolts and clamps; and a base in which the rigid rod is affixed in a pivot joint, and which is connected to the vehicle body.

The rigid rods are normally made of thermoplastic material, and between said rods and the housings there is at least one clamp which locks the housing-mirror set in a given rotation position, and one or more bolts which assure the fastening of the set.

20 Even considering the wide use and high efficiency of the outside rearview mirrors which use the above mentioned construction, there are some inconveniences which may be attributed to them, such as the high complexity of the fastening means used between the housing and the rigid rod, which create difficulties at the assembly line, a fact which is undesirable.

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Another problem is related to a certain degree of difficulty for the user when performing the reversal, which is also an undesirable fact.

Considering said problems, and aiming the elimination of them, the improvement, object of this patent of invention, for the reversible outside rearview mirror was developed, the construction, operation and advantages of which in respect to the usual ones will become clear from the following detailed description and the attached drawings where:

10 Figure 1 is a perspective view of the mirror, showing the constitutive parts in separate;

 Figure 2 shows the assembled mirror, in a view along the plane which passes between the housing and the housing supporting rod, with partial sections for a better understanding, and assembled for left side use;

 Figure 3 shows the same figure, but with detailed indication on how the assembly or disassembly of the housing and rod is made; and

 Figure 4 shows the mirror assembled for right side use.

20 In accordance with what is shown by the above listed figure, the reversible outside rearview mirror object of this patent comprises substantially; a set of mirror plate 1; a housing 2 which houses the mirror plate, both of them, the mirror 1 and the housing 2 being symmetrical in respect to an horizontal geometric axis "X"; a housing 1 supporting rod 3; assembling and fixing means 4-5 located between the housing 2 and the rod 3; and a base 6 in which the supporting rod 3 is pivoted, and which is fixed to the vehicle body 7; said housing

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2, the supporting rod 3 and the base 6 are made of an appropriate thermoplastic material;

In the present improvement, the supporting rod 3 is semi-rigid, in such a way that it bends when its ends are pressed one against the other, in a direction substantially axial to the rod; and the assembly/fixing means 4-5 between the housing 2 and the supporting rod 3 comprise, at least two "L" profile clamps 4 which protrude perpendicularly from the respective outside portion of the lateral 10 of the supporting
10 rod 3 which receives the housing 2; said clamps are arranged in longitudinal alignment on said lateral 10 and with the free ends turned towards the opposite direction, one in respect to the other and in substantially parallel directions of the corresponding ends closest to the supporting rod 3; and the respective grooves 5 made in the lateral 11 of the housing 2, adjacent to the lateral 10 of the supporting rod 3, arranged in a longitudinal alignment on said lateral of the housing and receivers for the "L" shaped clamps 4, which connect themselves in their opposite ends, closest to the lateral ends of the
20 housing 11, in such a way that the longer legs 12 of said "L" shaped clamps 4, which protrude from the lateral 10 of the supporting rod 3, pass through the respective grooves 5 remaining pressed against the transversal edges of said grooves, and the shorter legs 13 of said "L" shaped clamps 4 remain pressed against the internal surface regions of the housing 2, adjacent to the ends of the same grooves 5, pressing the lateral 11 of the housing 2 against the lateral 10 of the supporting rod 3, therefore making the whole set stable.

In this way, when the rearview mirror is assembled (Fig. 2), the "L" shaped clamps 4 of the supporting rod 3 remain connected to the respective grooves 5 of the housing 2, in such a way that the edges of the longer legs 12 of said clamps remain pressed against the outside transversal edges of the grooves 5 and the edges of the shorter legs 13 of said clamps remain pressed against the internal surface of the housing 2, pressing the lateral 10 and 11 of the supporting rod 3 and the housing 2 one against the other, therefore making the whole set stable.

When the mirror should be disassembled to have its position changed, as an example, from the right side (Fig. 2) to the left side (Fig. 4), the ends of the supporting rod 3 are pressed one against the other (Fig. 3), when the opposite forces "F" and "F'" will force the rod to bend in its middle region "M", and the "L" shaped clamps 4 to take a new position in which they may be disconnected from the respective grooves 5, therefore allowing the supporting rod 3 to be disassembled from the housing 2.

Then, the housing 2 and mirror 1 set is turned about the horizontal "X" and the vertical axis by 180°, and the supporting rod 3 is again pressed with the "L" shaped clamps 4 becoming connected to the inverted grooves 5, namely, an "L" shaped clamp 4 enters into a groove 5 which had been priory connected to another "L" shaped clamp 4, and the supporting rod 3 is released, in such a way that the "L" shaped clamps 4 are again pressed against the outside transversal edges of the grooves 5 and the inner surface of the housing, due to the

elasticity of the material used for the make the supporting rod 3, therefore fixing the set in its new position.

In a preferred configuration, as shown in the figures, the supporting rod 3 presents a curved shape, in order to facilitate its bending, when pressed from its ends. Therefore, said supporting rod 3 is semirigid and comprises a plate with its profile being substantially elliptic, with surface 10 which is turned towards the concave housing 2; said concave surface 10 has in its ends the "L" shaped clamps 4 and, in an intermediate level, said surface has two other auxiliary "L" shaped clamps 20, located in a crossed transversal alignment in respect to the longitudinal alignment of said clamps, which connect themselves to the respective grooves 21 made in the lateral 11 of the housing 2 and the lower end of said rod provides the seat 22, which connects with ball joint 23 provided in the base 6.

The housing 2 has a slightly recessed lateral 11 where the grooves 5 and 21 are provided, with the profiles substantially equal to the supporting rods 3 and ready to receive said rod, in such a way that the convex outside surface 10' of the mentioned supporting rod 3 is continuously connected with the outside surface of the housing 2.

Within the above described basic conception, the reversible outside rearview mirror may be changed in respect to materials, configurations, dimensions, colors, finishing and others, without avoiding the protection of the patent.

WHAT IS CLAIMED IS:

1. A reversible rearview mirror, comprising a mirror plate; a housing, housing
5 the mirror plate and having a lateral portion, both the mirror plate and the housing being
symmetrical with respect to a horizontal axis; a resilient housing supporting member
having supporting member ends and a lateral portion and being bendable when said
supporting member ends are pressed toward each other in an axial direction, the lateral
10 portion of the supporting member being shaped to engage with the lateral portion of the
housing when the supporting member is assembled with the housing; a base on which
said supporting member is pivotally mounted and which is fixed to a vehicle body; and
attachment means for assembling and attaching the supporting member to the housing,
wherein said attachment means is arranged between the housing and the
15 supporting member and comprises at least two L-shaped clamps and respective grooves
provided in the lateral portion of the housing in which said at least two L-shaped clamps
engage, each of said at least two L-shaped clamps have free ends and extend
perpendicularly from the lateral portion of the supporting member, said at least two L-
shaped clamps are arranged in longitudinal alignment on said lateral portion and with the
20 free ends thereof facing in opposite directions with respect to each other and in
substantially parallel directions and toward the respective closest supporting member
ends of the supporting member; and the respective grooves are provided in the lateral
portion of the housing in a longitudinal alignment and positioned so as to receive said at
least two L-shaped clamps, and each of said at least two L-shaped clamps has a longer
25 leg extending from the lateral portion of the supporting member and a shorter leg
connected to the longer leg, and said at least two L-shaped clamps engage themselves on
opposite ends of said grooves closest to respective opposite ends of the lateral portion of
the housing so that the longer legs of said at least two L-shaped clamps pass through the
respective grooves and press against transverse edges of said grooves and the shorter legs
30 of said L-shaped clamps press against internal surface regions of the housing adjacent to
said ends of said grooves so as to press the lateral portion of the housing against the
lateral portion of the supporting member.

2. The reversible rearview mirror as defined in claim 1, wherein the supporting member has a curved shape to facilitate bending of said supporting member when said supporting member ends of said supporting member are pressed and said supporting member comprises a body with a substantially elliptical cross-section and said lateral portion of the supporting member has a concave surface facing said housing and said housing has a corresponding surface fitting said concave surface of said lateral portion and said at least two L-shaped clamps are located at opposite ends of said concave surface; and further comprising two other auxiliary L-shaped clamps located in an intermediate position on said concave surface of the lateral portion of the supporting member and arranged in a transverse alignment with respect to the longitudinal alignment of said at least two L-shaped clamps and respective grooves provided in the lateral portion of the housing in which said two other auxiliary L-shaped clamps engage; and wherein said supporting member is provided with a seat in a lower supporting member end of said supporting member and said base is provided with a ball fitting in said seat to form a ball joint for pivotal mounting of the supporting member on the base, and the lateral portion of the housing is slightly recessed from an outside surface of the housing and has a shape substantially corresponding to that of the supporting member so as to be ready to receive said member so that a convex outside surface of the supporting member is continuously connected with the outside surface of the housing.

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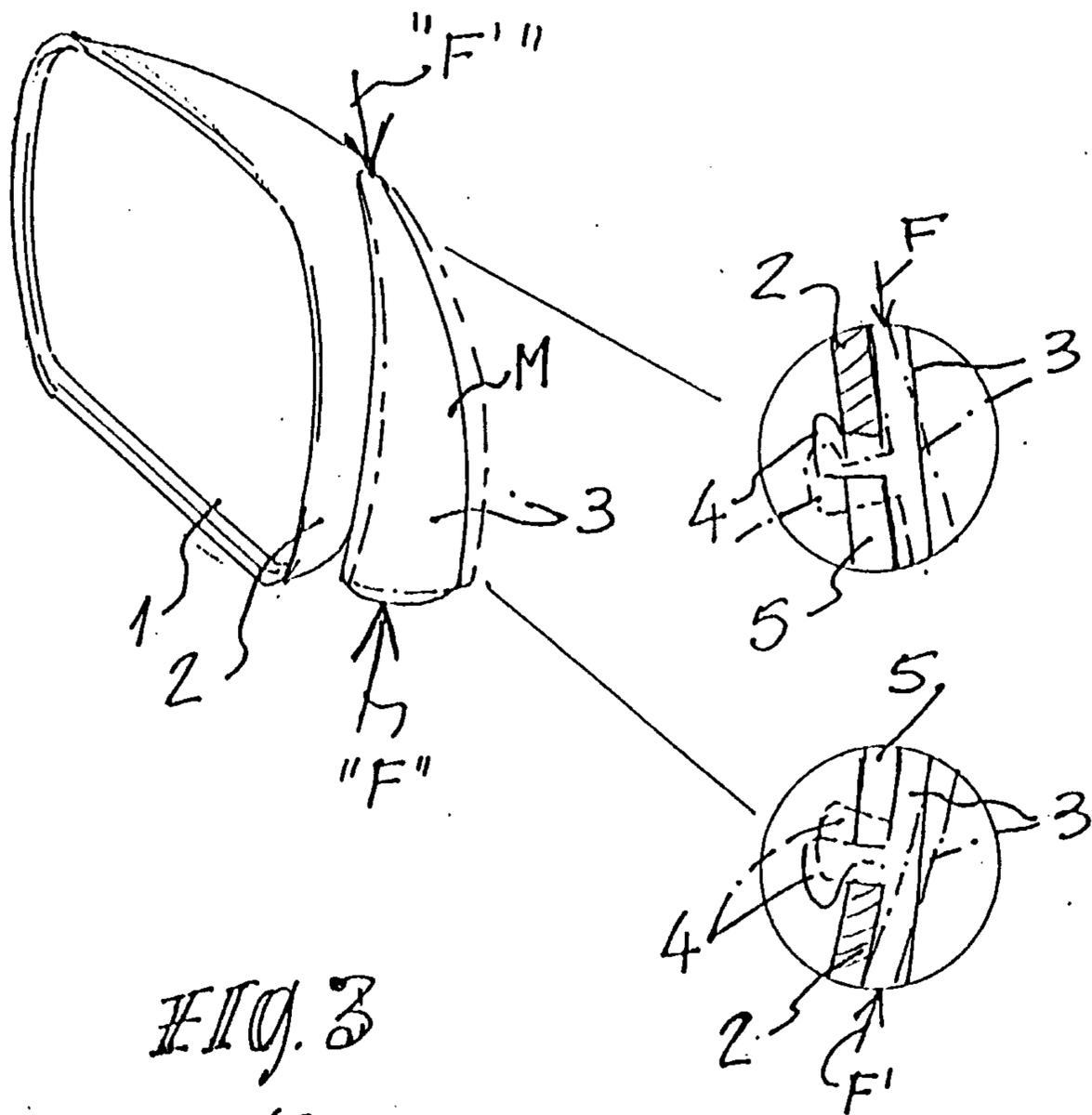


FIG. 3

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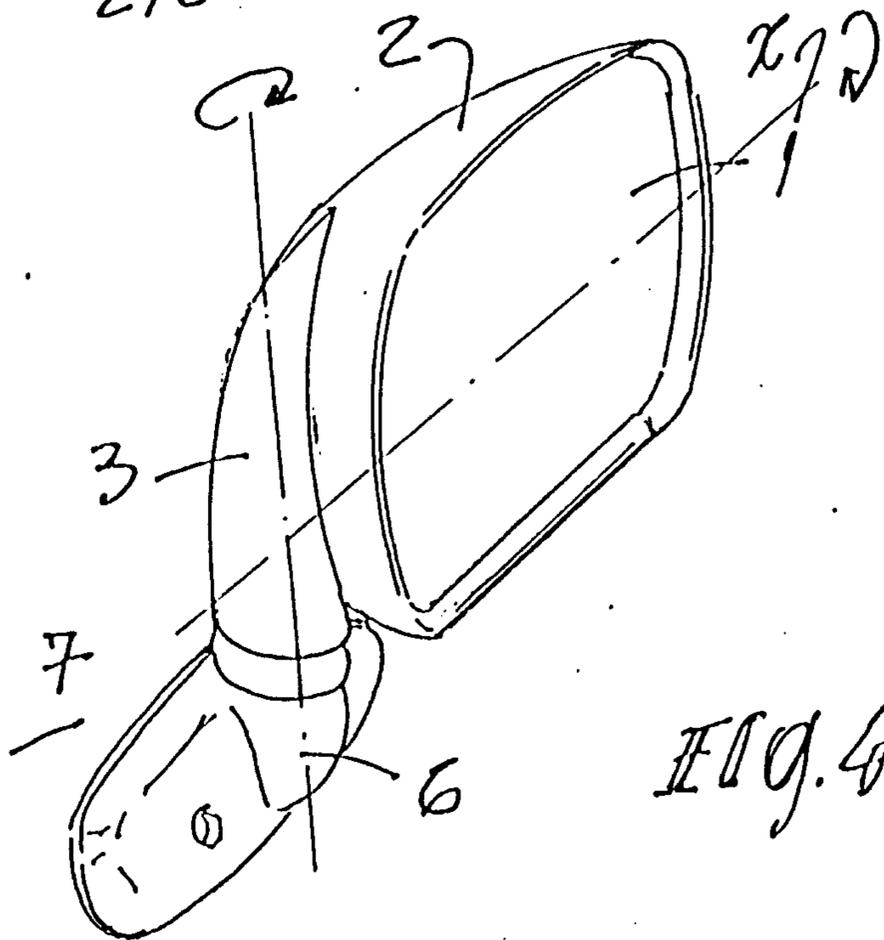


FIG. 4

