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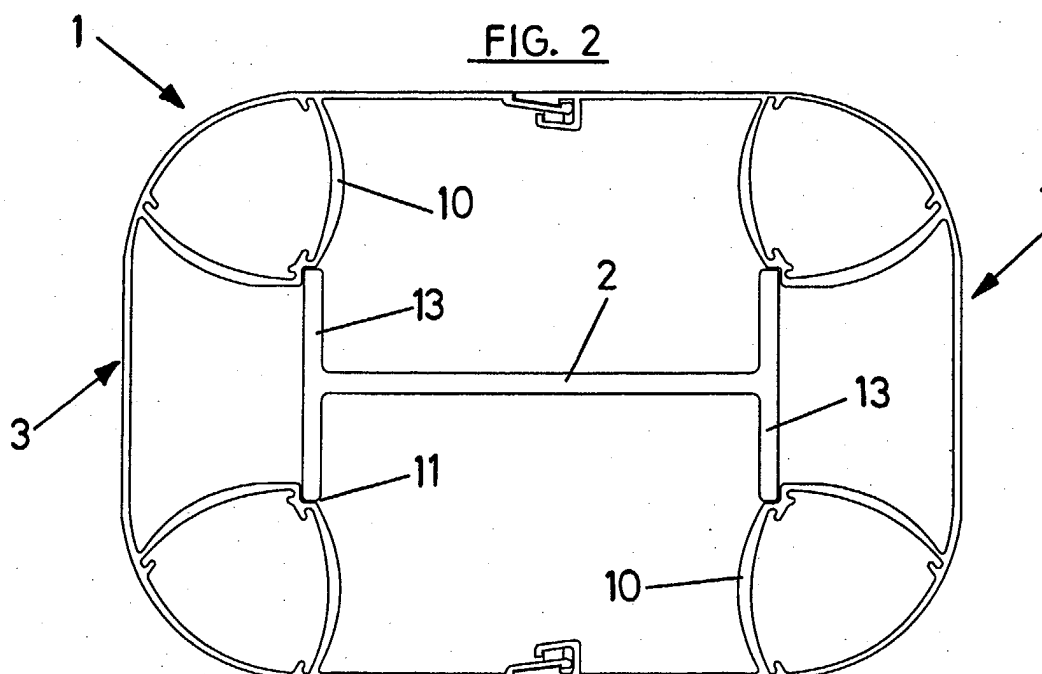
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(54) **Impact absorber for road barrier columns**

(57) Shock absorber for road barrier columns, particularly for columns consisting of profiles (2) with open or closed sections, comprising a cover (1) comprised of

a thin metallic wall that surrounds the column (2) and is internally provided with means of support (10) on said column, the means of support and wall being deformable by an impact.



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Description

[0001] The present invention relates to an impact absorber for road barrier columns, particularly applicable in columns consist of open profiles with longitudinal wings, such as I-bars, C-bars or closed tubes.

[0002] Side barriers and centre barriers of roads generally consist of a metal strip, transversally corrugated, supported by vertical columns that are anchored to the ground. These columns generally consist of open profiles with longitudinal wings, generally I bars. Barrier columns with said constitution present a serious threat to motorists who, in the event of an accident, may roll or slide until colliding with the barrier columns, possibly hitting the edge of one of the wings of these columns, which will act as a blade severing extremities due to the force of the impact. Additionally, the high stiffness of the column makes the impact so great that the outcome is often deadly.

[0003] The object of the present invention is to solve the aforementioned problems by a protection that eliminates or reduces the effect of an impact against the columns, particularly against their sharp edges, while acting as an element to cushion the blow.

[0004] Protections are already known for this purpose made of materials of a more or less cushioned nature wrapped around the column.

[0005] In certain situations this type of protection may not be very useful, particularly when the impact is very strong.

[0006] The object of the present invention is to solve the aforementioned problems with an impact absorber with a simple constitution, which can be easily coupled to currently existing barrier columns to provide a suitable protection.

[0007] According to the present invention, the impact absorber consists of a cover comprised of a metallic wall, preferably made of aluminium, which surrounds the column and is internally provided with means for support on said column. These means of support are of the same nature as the wall, projecting out of it and forming a single part with it, and act as elements that separate the said wall and the column. The means of support and the wall, which have a reduced thickness, are deformable in the event of an impact absorbing a considerable amount of energy when receiving an impact, such as from a motorist.

[0008] In any case, the protection will prevent the motorist from coming in contact with the edges of the profile wings determining the columns of the barrier or guard.

[0009] The metallic wall surrounding the columns can consist of a single part or may be axially divided into two halves, both halves being provided on their opposing edges with interlocking means.

[0010] In this way, the cover is comprised of a single part or two opposing halves attachable to each other, due to the interlocking means of their free edges.

[0011] As regards the means of support, these consist

of longitudinal partitions projecting out of the inner surface of the wall, in positions substantially opposite the wings of the column profile, said partitions having an end longitudinal shaping that can be coupled to the longitudinal edge of the opposing wing.

[0012] The partitions can form closed inner profiles with the wall, externally having presenting the longitudinal shaping that can be coupled to the longitudinal edge of the opposite wing. The aforementioned edges can have an approximately triangular cross section with convex sides, the partition defining two of the sides and the intermediate vertex, which is externally provided with the shaping to be coupled to the edge of the opposing wing of the profile.

[0013] The constitution, mode of assembly and advantaged of the impact absorber of the invention are described in greater detail in what follows, with the aid of the accompanying drawings showing a non-limiting example of an embodiment.

[0014] In the drawings:

Figure 1 shows a sectional view of an impact absorber according to the invention, in the assembly or mounted stage.

Figure 2 is a similar sectional view to figure 1, after the absorber is mounted on the column of a barrier.

Figure 3 is a side elevation view of a barrier whose columns include the protection of the invention.

Figure 4 is a partial plan view of the barrier of figure 3.

Figure 5 is a similar view to figure 2, showing an alternative embodiment.

[0015] The impact absorber shown in figures 1 to 4 consists of a wall labelled in general by the number 1 that surrounds the columns 2 of a road barrier.

[0016] This wall is axially subdivided into two halves labelled by the numbers 3 and 4, the two halves being provided on the longitudinal edge of its walls with interlocking means 5 and 6.

[0017] Said means can consist of a tab 5 that can be inserted in a double tab 6, the tab 5 having in its longitudinal edge a thickening 7, while the double tab 6 having on one of the tabs a thickening 8 that defines an inner sliding ramp, while on the other it defines a retaining elbow 9.

[0018] With this construction, the interlocking means 5 and 6 being opposite each other and pressing the halves 3 and 4 against each other, the tab 7 of each side is inserted in the double tab 6 opposite it and is retained in it, defining a closed outline as shown in figure 2.

[0019] The wall 1 is internally provided with means of support on the columns 2. These means of support consist of a partition 10 that together with the wall 1 defines

an approximately triangular closed outline, with convex sides. Externally this partition conforms an angular seat 11 for supporting the edges 12 of the wings 13 of the columns 2.

[0020] With the described construction, the impact absorber of the invention is easily mounted on the barrier columns currently existing in roads. For this the two halves 3 and 4 of the wall 1 are placed abutting the column, ensuring that the shaping 11 of the means of support 10 of one half, such as the half 4 as shown in figure 1, rest on the wing 13 of one side of the column 2. Then the other half 3 is disposed with its interlocking means 5 opposite the double tab of the interlocking means 6, pressing the two halves against each other until they are coupled and secured as shown in figure 2.

[0021] In this way, as shown in figures 3 and 4, the columns 2 of the barriers 14 are provided with a protection 15 comprised of the wall 1 with the above described construction.

[0022] As indicated, both the wall 1 and the internal partitions 10 are preferably made of aluminium and with a small thickness, such that they can be deformed by an external impact.

[0023] The deformation of the wall 1 and the partitions 10 will absorb enough energy to reduce the effect of the impact, the wall being interposed between the impacting body and the column 2.

[0024] In the embodiment of figure 5 the wall is subdivided into two halves 3a and 4a by means of the minor walls. The interlocking means consist of a tab 5a in the form of a hook that is inserted in the double tab 6a, with retention ribs.

[0025] As regards the inner partitions 10, they are externally provided with two longitudinal wings 16 that determine a longitudinal groove with a U-shaped section in which enters and is coupled the edge 12 of the wings 13 of the profile 2, to act as a seat and support of said edges.

[0026] Otherwise, the embodiment of figure 5 is identical to that described with reference to figures 1 to 4.

two halves (3-4, 3a-4a), whose opposing edges are provided with interlocking means (5-6, 5a-6a).

3. Protector as claimed in claim 1, **characterised in that** the aforementioned means of support consist of longitudinal partitions (10) that project beyond the inner surface of the wall in a position substantially opposing the wings (13) of the column profile, and are provided with an end longitudinal shaping that can be coupled on the longitudinal edge (12) of the opposite wing.
4. Protector as claimed in claim 3, **characterised in that** the aforementioned partitions (10) form a closed outline on the inner surface of the wall (1), said outline having outer longitudinal shapings that can be coupled on the longitudinal edge (12) of the opposite wing.
5. Protector as claimed in claim 4, **characterised in that** the aforementioned outline has an approximately triangular cross section, and has an external shaping that can be coupled on the edge (12) of the wing opposite the profile to rest on said edge.
6. Protector as claimed in the above claims, **characterised in that** the wall and inner partitions are made of aluminium.

Claims

1. Impact absorber for road barrier columns, particularly for columns consisting of open profiles with longitudinal wings, such as I-bars, C-bars and tubes, **characterised in that** it consists of a cover comprised of a thin metallic wall (1) surrounding the column (2) and internally provided with means of support on said column, which act as separators between the aforementioned wall (1) and the column (2); the means of support and wall being deformable by an impact, absorbing the energy of the impacting body.
2. Protector as claimed in claim 1, **characterised in that** the metallic wall (1) is axially subdivided into

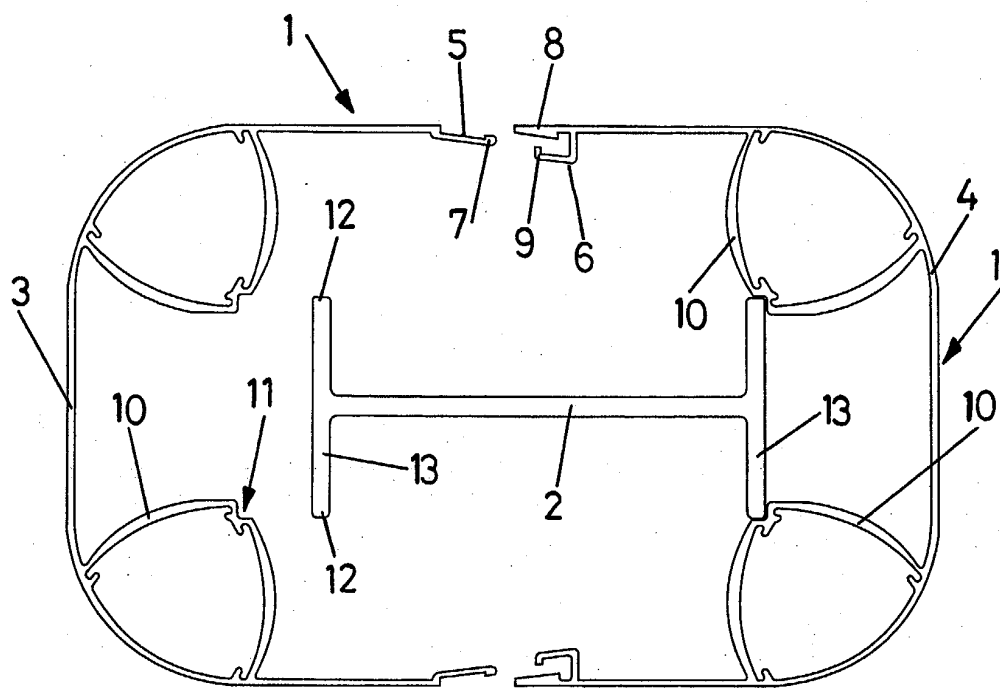


FIG. 1

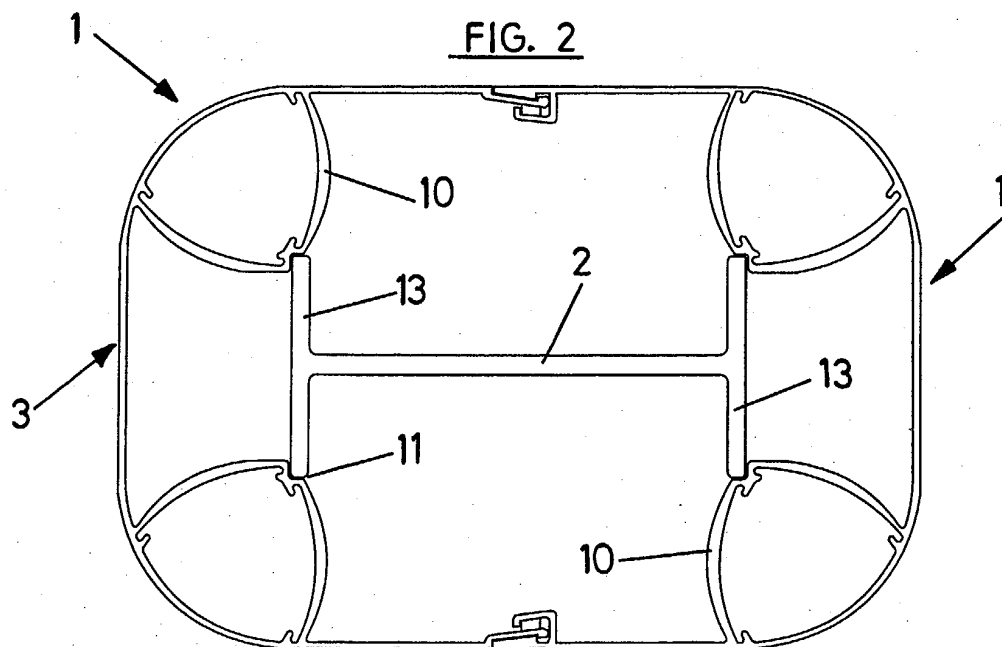


FIG. 2

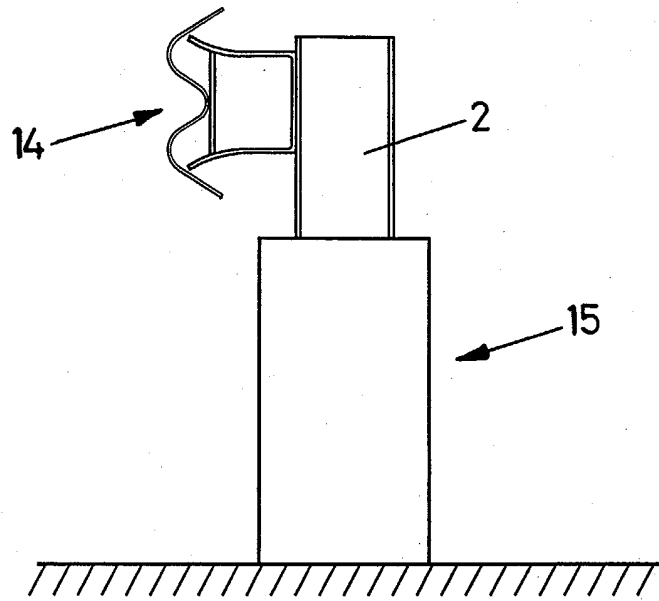


FIG. 3

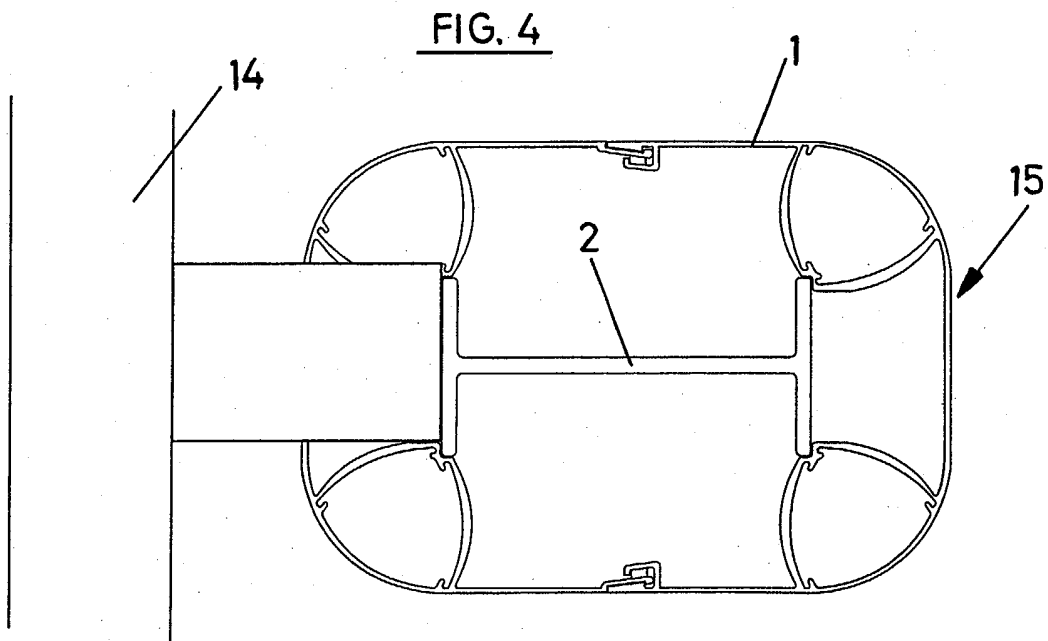


FIG. 4

FIG. 5

