

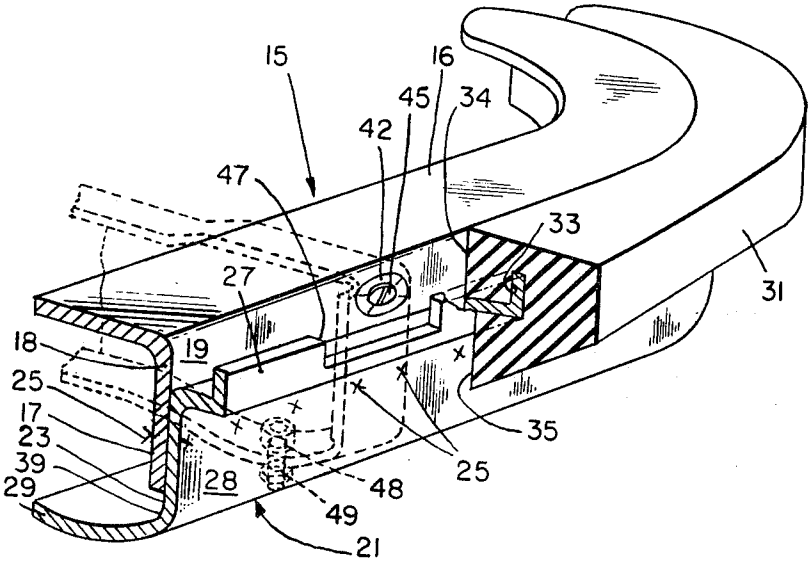
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[21] Appl. No. 783,085
[22] Filed Dec. 11, 1968
[45] Patented Apr. 13, 1971
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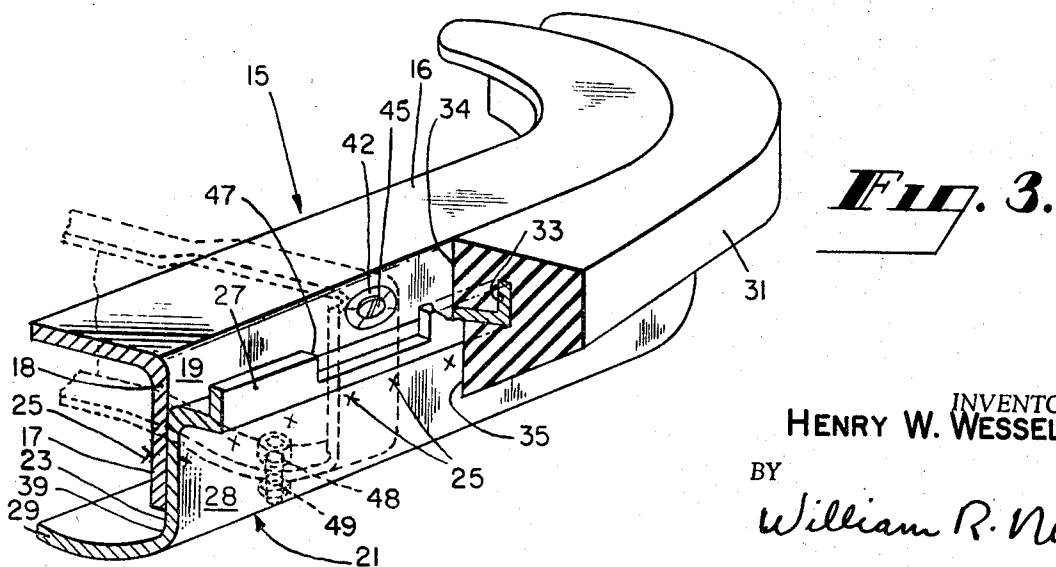
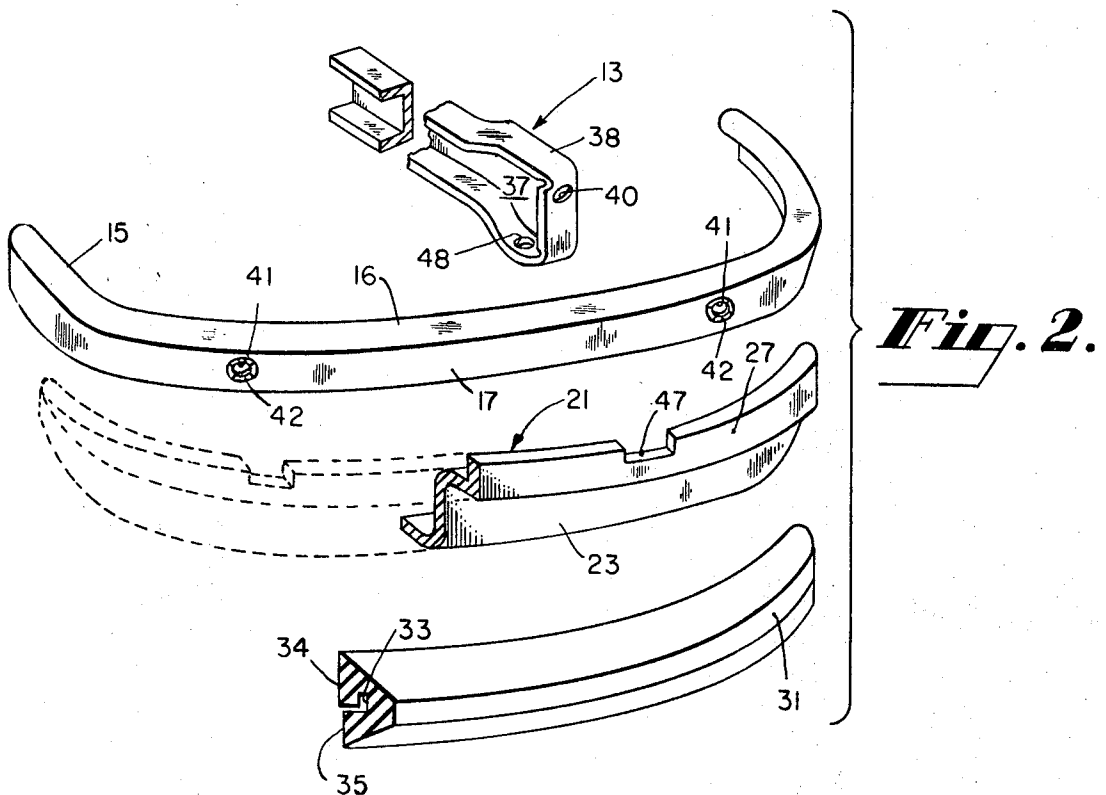
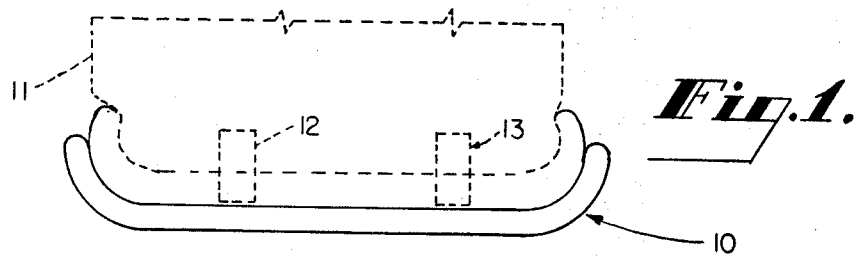
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[54] ELASTOMERICALLY COVERED BUMPER
 6 Claims, 3 Drawing Figs.
[52] U.S. Cl..... 293/71,
 114/219, 293/98, 293/99
[51] Int. Cl..... B60r 19/08,
 B61f 19/04, B63b 59/02
[50] Field of Search..... 114/88;
 114/219; 293/71, 71 (P), 98, 99

ABSTRACT: Bumper structure having a top member welded to a bottom member with an outstanding flange for securing a resilient rubber facing strip which contacts the outer surfaces of the members. The top and bottom members are welded so that moisture which may bleed from the weld construction drains along the inner surface of the bottom member. The formation of rust streaks on the chrome outer finish is thereby minimized.





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ELASTOMERICALLY COVERED BUMPER

This invention relates to bumpers for general use in the automotive field. It more particularly relates to bumpers formed of two or more pieces which carry an elastomeric facing strip substantially the full length of the bumper.

It has been proposed, heretofore, to attach by welding, clips of various cross section to the outer surface of a bumper structure to retain a rubber facing strip. The strip in such construction was formed with an internal slot for gripping the clips. Upon the passage of time it was noted that rust developed at the juncture of the welded clip to its attached structure thereby staining the outer face of the bumper.

It is an improved object of this invention to provide an improved bumper construction which avoids one or more of the disadvantages of the prior art arrangements.

It is another important object of this invention to provide an improved bumper construction wherein clip means are formed integrally with one member which in turn is joined to another member in a manner to preclude the formation of rust stains on outer faces of the members.

In accordance with the invention, the bumper construction of the present invention comprises a top member having a downwardly depending flange, and a bottom member secured to the outer face of said depending flange. The bottom member includes an offset flange to mount a resilient facing strip of elastomeric material which extends substantially the full length of both top and bottom members. The facing strip includes a slit along its length which enables the strip to grip the offset flange.

Further benefits and advantages in accordance with the invention will become more apparent from the following specification when taken in connection with the drawing wherein:

FIG. 1 is a schematic plan view of an automotive vehicle having the bumper structure of the present invention secured thereto;

FIG. 2 is a front elevational schematic perspective view of the various elements of the bumper separated one from another; and

FIG. 3 is a schematic sectional view showing the various elements in their assembled relationship.

In FIG. 1 there is shown a bumper structure 10 embodying the present invention secured to an end of an automotive vehicle 11 by means of a pair of bracket members 12, 13. The bumper extends across the end of the vehicle and includes integral opposite wraparound end portions which extend along the sides of the vehicle.

With reference now to FIGS. 2 and 3 the bumper structure is illustrated as including a top member 15 in the form of a stamping of L-shaped cross section having a horizontal flange 16 and a vertical depending flange 17. The top member may be of suitable metal with an inner surface 18 and outer polished surface 19 such as chrome plate. A lower member 21 having a central generally vertical web 23 is secured to upper member 15 as by weld connections as at 25. The lower member includes an offset flange portion 27 of Z-shape which is integral with the upper margin of the central web 23 and extends outwardly from the weld connection 25. The flange is spaced from the external surface 19 of flange 18 and external surface 28 of web 23. The lower member 21 includes in addition a lower inwardly directed flange 29 which diverges in a curved path from the horizontal flange 16 of upper member 15. The offset flange 27 in addition to providing a strengthening function to the lower stamping, is positioned to support a resilient facing strip 31 substantially along the full length of the bumper. The facing strip may be formed of an elastomeric material which is generally wedge-shaped in cross section and which has good shock absorbing qualities. The interior of the strip defines a grooved or slot 33 which complements in size the longitudinally extending Z-shaped flange 27. The base of the strip is defined by an upper inner surface 34 and a lower inner surface 35 slightly offset an amount corresponding to the thickness of web 23.

In order to mount the strip, it is sufficient to draw apart the base portions contiguous with surfaces 34, 35 to slightly spread the slot 33 in the strip and to press them over the offset flange portion 27 either by hand, or with the aid of a mallet. In order to facilitate this operation the external surfaces of the flange or surfaces defining the slot may be covered with talc or coated with a wetting agent to facilitate sliding action thereon and longitudinally of the flange. When so assembled the upper base surface 34 of the strip coacts in tight fitting engagement with external surface 19 of upper member 15, while the lower base surface 35 thereof coacts with external surface 28 of lower member.

As previously referred to, bracket means 12, 13 similar one to another, are provided to attach the bumper to the chassis of the motor vehicle 11 not shown. Mounting bracket 13 includes a web 37 and an encircling inturned flange 38 which conforms in curvature to the internal surfaces 18 of top member 15 and surface 39 of lower member 21 as seen in FIG. 3. The flange 38 of the bracket includes an upper hole 40 aligned with hole 41 in upper member 15, the latter hole being positioned in a recessed portion as 42. Suitable bolt means 45 are passed through the holes so aligned to secure the upper member to the bracket. The head of the bolt means are received within the recess and thereby enables the surface 34 of the strip to coact the margins of the recess at the outer surface 19. In order to permit passage of the bolt means through the aligned holes 40, 41 a portion of the flange means 27 is notched as at 47.

The flange 38 of mounting bracket 13 includes in addition a lower hole which is aligned with hole 49 in lower bumper member 21 as seen in FIG. 3. Similar bolt means 45 are likewise employed.

From the foregoing it can be observed that since the lower member 21 overlaps the outer face 19 of upper member 15, the possibility of rust formation at the weld sections 25 will occur along the curved face 39 of lower member 21 and not along its outer chrome surface 28.

While there has been described what at present is considered to be the preferred embodiment of this invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention, and it is therefore aimed in the appended claims to cover all such damages and modifications as fall within the true spirit of this invention.

I claim:

1. A channel-shaped bumper for an automobile vehicle comprising in combination:

- a. an upper member having a horizontal upper flange and a downwardly directed connection flange extending therefrom,
- b. a lower member having a horizontal lower flange and a Z-member extending upwardly therefrom having a connection flange of the upper member and an upper offset vertical flange, said downwardly directed flange being overlappingly secured to the connection flange of the Z-member to provide a channel-shaped bumper structure with an offset vertical flange member extending away from the channel at the connection,
- c. a weld connecting the overlapping connection flange of the upper member to the inner surface of the connection flange of the Z-member at a point below the upper offset vertical flange, whereby rust streaks emanating from the weld connection drain down the inner surface of the lower element, and
- d. a resilient cover strip of elastomer material fitted over the upper offset vertical flange of the Z-member.

2. Bumper structure as set forth in claim 1, wherein said resilient cover strip is provided with a horizontal surface which is tightly fitted against the outer horizontal surfaces of the upper and lower members.

3. Bumper structures as set forth in claim 2, which further includes a bumper support bracket engaging the inner surfaces of the upper and lower members.

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4. Bumper structure as set forth in claim 3, wherein said bracket is attached to said upper and lower members by bolt means extending through the downwardly directed flange and the upper member.

5. Bumper structure as set forth in claim 4, wherein said bolt means are disposed in line with the upper offset vertical flange of the Z-member, said flange being provided with a cutout

portion to provide frontal access to said bolt means.

6. Bumper structure as set forth in claim 1, wherein said downwardly directed flange on the upper member is generally vertical, having its outer surface connected to the inside surface of the Z-member to form a doubler therewith.

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