

Oct. 8, 1957

H. P. BAUER

2,809,050

FRAME WITH BRACKET FOR AUTOMOBILES

Filed Dec. 30, 1955

FIG. 1

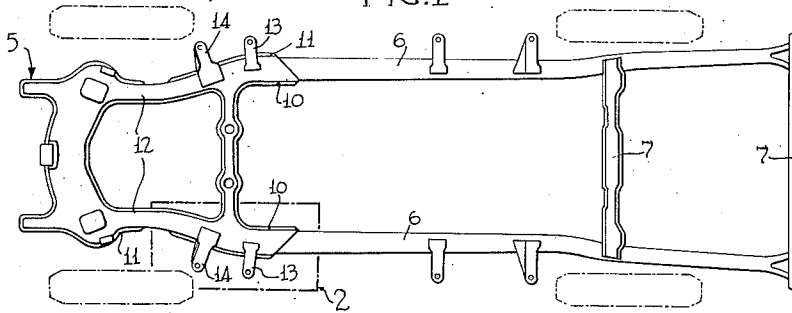


FIG. 2

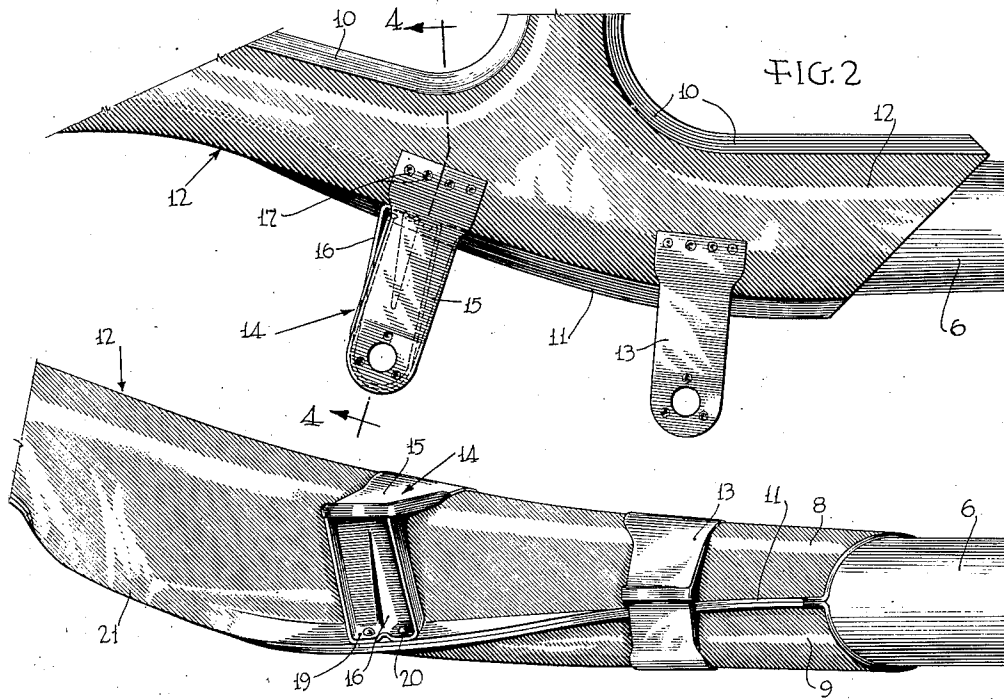


FIG. 3

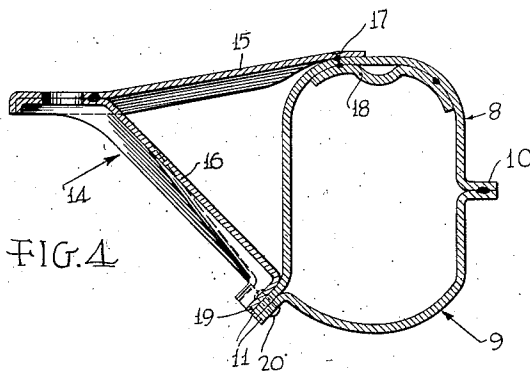


FIG. 4

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1

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FRAME WITH BRACKET FOR AUTOMOBILES

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Application December 30, 1955, Serial No. 556,535

4 Claims. (Cl. 280—106)

The invention relates to automobile chassis or underframe structures and particularly to the arrangement of brackets attached thereto.

More specifically, the invention relates to frames and brackets of the types disclosed in the copending applications of the same assignee as the present application: Alexander R. Lindsay, "Automobile Chassis or Underframe Structure," Serial No. 358,315, filed May 29, 1953, now abandoned; Walter B. Dean, "Chassis Frame with Tubular Side Sills for Automobiles," Serial No. 437,966, filed June 21, 1954; and Alexander R. Lindsay, "Automobile Chassis or Underframe Structure," Serial No. 438,144, filed June 21, 1954.

The main object of the invention is increased strength and durability of the connection between bracket and frame without increase in cost and weight.

The improvement resides essentially in arranging the flanges connecting upper and lower stampings of a box-sectional frame member so that the tangent of a cylindrical wall portion of the lower stamping is in alignment with a bracket member or strut secured to the flanges and transfers stresses without abrupt change in direction into the cylindrical wall portion.

One embodiment of the invention is shown in the attached drawing and described in the following.

In the drawing:

Fig. 1 is a diagrammatic, small-scale plan view of a chassis frame;

Fig. 2 is a fragmentary larger-scale plan view of the frame portion surrounded in Fig. 1 by dot-and-dash line 2;

Fig. 3 is a fragmentary side elevation corresponding to Fig. 2; and

Fig. 4 is a section along line 4—4 of Fig. 2 on a still larger scale.

The chassis frame illustrated in Fig. 1 comprises a front end structure 5, a pair of tubular main side sills 6, and cross beams 7. End structure 5 comprises upper and lower stampings 8, 9 which are secured (e. g., welded) to each other by marginal inner and outer flanges 10, 11 and which present box-sectional side sill members 12. Main sills 6 are telescopically received and secured in the circle-section rear portions of sill members 12 which carry on their outsides brackets 13.

The invention, now to be explained, resides in the novel formation and arrangement of the flanges 11 and of body-supporting additional brackets 14.

Each bracket 14 is V-shaped and essentially consists of upper and lower members or struts 15, 16 having their outer supporting ends connected with each other at the apex of the V. Upper member 15 is spot welded at 17 to the top of upper stamping 8 and the latter's inner reinforcement 18.

An outwardly directed flange 19 at the inner end of lower bracket member 16 rests on and is secured, e. g., by rivets 20, to the outer flanges 11 of stampings 8, 9.

2

The salient features of the invention reside in that outer flanges 11 in front of rear bracket 13 drop steeply down so that they merge into a vertically downwardly extending flange portion in the wheel-turn-in region 21 and so that the main portion of lower bracket strut 16 extends tangentially to the adjoining cylindrically shaped portion of lower stamping 9.

The new arrangement provides, as pointed out heretofore, for transfer of the stresses from bracket member or strut 16 into the walls of end structure 5 without abrupt change in direction and without imposing stresses on the connections between stampings 8 and 9 and between brackets 14 and the stampings, which might tend to disrupt the connections.

The invention is susceptible to modifications and adaptations so as to meet special conditions of the structures to which it is applied.

What is claimed is:

1. In an automobile frame, a hollow frame member and a bracket, said frame member being formed of upper and lower stampings connected with each other by outwardly directed flanges provided along their margins, said lower stamping having a portion curved in cross section, the part of said flanges along said curved portion extending radially outwardly, said bracket having a strut provided with a flange overlappingly secured to said last-named flange part and having a main portion extending tangentially to said curved stamping portion adjoining it.

2. Frame member with bracket for automobiles, said frame member being a hollow section with an about circular section wall portion and outwardly directed flanges along one margin of said circular section wall portion and along an adjoining wall portion, said bracket extending tangentially in the direction of the circular wall portion adjoining the flanged margin and having a flange overlappingly secured to said first-named flanges.

3. In an automobile frame, a hollow section sill comprising a deep U-sectional upper member and a shallow circle-section lower member, said members being overlappingly connected with each other through outwardly directed marginal flanges provided on them, a V-shaped bracket having an upper strut overlappingly secured to the top of said upper member and having a lower strut arranged tangentially to the direction of the flanged margin of said circular section member and overlappingly secured by a marginal flange to said flanges between said upper and lower members.

4. In a chassis frame for automobiles, an end structure provided with a side sill member and a main sill, the latter telescopically secured to one end of said sill member, said sill member being formed by upper and lower stampings provided with outwardly directed marginal flanges, said flanges being arranged at the aforesaid end about half way between top and bottom of said sill member while in a wheel-turn-in zone spaced from said end, said flanges being downwardly directed, the flanges at said ends and in said wheel-turn-in zone merging into each other so that they extend in an intermediate region on an outwardly and downwardly slanted angle radially to an adjoining curved portion of said lower stamping, a bracket member being arranged and secured to said sill member in continuation of said curved portion for transmittal of stresses into said lower stamping without abrupt change in direction.

References Cited in the file of this patent

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