

Jan. 1, 1929.

J. R. HUGHES

1,696,955

VEHICLE BODY

Filed Oct. 24, 1927

2 Sheets-Sheet 1

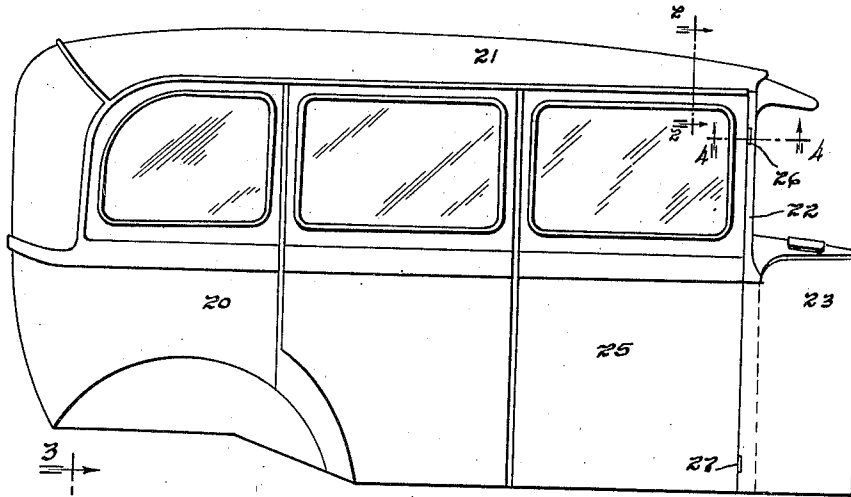


Fig. 1

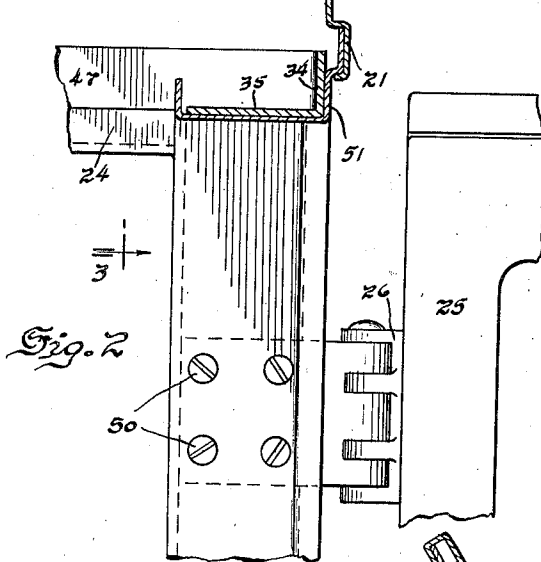


Fig. 2

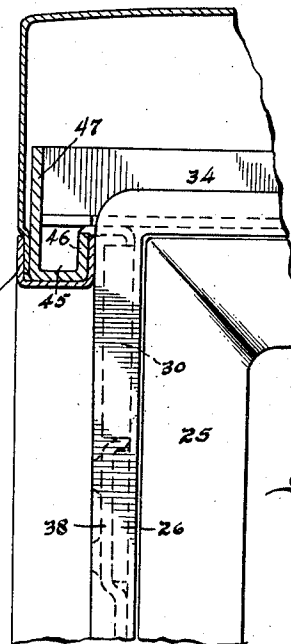


Fig. 3

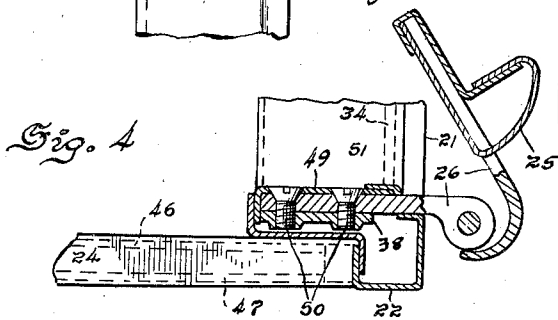


Fig. 4

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VEHICLE BODY.

Application filed October 24, 1927. Serial No. 228,456.

This invention relates to vehicle bodies of the enclosed type, and particularly to means for attaching the front pillar to the top side rail, the principal object being to provide a front body pillar with an attaching brace secured to both the top side rail and top front cross member to form a rigid connection therebetween.

Another object is to provide a front body pillar with an attaching brace comprising a sheet metal stamping having a vertical portion secured to the top of the pillar, an integral portion secured to the top side rail, and an integral portion secured to the top front cross member to form a rigid connection therebetween.

Another object is to provide a front body pillar with an attaching brace comprising a sheet metal stamping having a vertical portion secured to the upper end of the pillar, the upper end of the vertical portion being bent over to provide a horizontal face and then upwardly to form a vertical face secured to the top front cross member, the vertical face having an extending L-shaped portion bent at an angle thereto so that the horizontal leg thereof seats on the first mentioned horizontal face and is secured thereto, both legs being secured to the top side rail.

These being among the objects of the present invention, the same consists of certain features of construction and combinations of parts to be hereinafter described with reference to the accompanying drawings, and then claimed, having the above and other objects in view.

In the accompanying drawings which illustrate a suitable embodiment of the present invention,

Figure 1 is a side view of a motor vehicle of the enclosed type.

Figure 2 is a section through the top side rail of the body, taken on the line 2—2 of Figure 1.

Figure 3 is a section through the top front cross member, taken on the line 3—3 of Figure 2.

Figure 4 is a section through the body pillar and door hinge, taken on the line 4—4 of Figure 1.

Figure 5 is a plan view of the sheet metal stamping from which the attaching brace of the present invention is bent to shape.

Figure 6 is a view of the stamping of Figure 5, showing portions thereof bent to shape.

Figure 7 is a section taken on the line 7—7 of Figure 6.

Figure 8 is an enlarged perspective view of the completely formed attaching brace.

Figure 9 is an enlarged perspective view of the brace looking at the same from a different angle than the view shown in Figure 8.

Referring to the accompanying drawings, in which like numerals refer to like parts throughout the several views, the vehicle body 20 is of the conventional type, having top side rails 21, front body pillars attached to the body cowl unit 23 to support the side rails 21, and a top front cross member 24 bridging the space between the ends of the side rails 21. A conventional door 25 is attached to each pillar 22 by upper and lower hinges 26 and 27 respectively.

In a vehicle body construction, one of the most important parts is the connection between the pillars and top side rails. A considerable amount of strain is exerted at this connection due to the weaving of the body on the chassis when the vehicle is passing over rough and uneven roads, and it is therefore quite essential that the connection be strong and extremely rigid. Strength and rigidity may be had by using my present invention which comprises a brace for attaching the top of the front pillar to the top side rail, which is secured thereto in both horizontal and vertical planes. This brace is formed out of a single piece of sheet metal and is provided with an integral portion secured in both horizontal and vertical planes to the top front cross member.

The brace is first stamped from a single piece of sheet metal to form a blank A as shown in Figure 5, and comprises a strap-like portion 28 having openings 29 at one end thereof and a projecting portion 30, a rectangular portion 31 extending to one side of an end of the strap portion 28 and a narrower rectangular portion 32 extending on the other side of the strap portion 28 from the rectangular portion 31. Portions of the blank are then bent to the shape shown in Figures 6 and 7. The rectangular portion 32 is bent on the broken line 33 of Figure 5 to form an L-shaped portion having a vertical wall 34 and a horizontal flange 35. The lower end of the strap 28 is depressed

along the transverse broken lines 36 and 37 to provide an offset portion 38, and the projecting portion 30 is flanged along the broken line 39. The blank is further bent
 5 at right angles along the line 40, to form a flat horizontal face 42, then it is bent downwardly on the line 41, then horizontally on the line 43 and upwardly on the line 44 to provide a trough 45 having vertical side
 10 walls 46 and 47. The vertical wall 34 of the blank is finally bent substantially at right angles to the vertical wall 47 on the line 48, so that the lower face of the horizontal flange 35 seats upon the horizontal face 42
 15 as shown in Figures 8 and 9. The two horizontal faces 35 and 42 are preferably welded or riveted together to form a rigid connection.

As seen in Figure 4, the pillar 22 is formed
 20 of sheet metal to provide a hollow structure, the upper end of which receives the attaching brace. The strap-like portion 28 of the brace seats against the inner face of the side wall 49 of the pillar 22, one leg of the door
 25 hinge 26 being received in the space between the offset portion 38 of the brace and the face of the pillar side wall 49, and is held therein by screws 50 passing through the wall and threaded into the threaded open-
 30 ings of the offset portion 38. The screws 50 also secure the attaching brace to the pillar 22, however, in order to give a more rigid connection, the strap-like portion 28 may be welded or riveted to the inner face of
 35 the pillar side wall 48.

Referring to Figures 2 and 3, the top front cross member 24 is trough-shaped and receives that portion of the brace comprising the side walls 46 and 47 and trough 45, all
 40 the contacting surfaces therebetween, preferably being welded together. The L-shaped portion of the brace comprising the faces 34 and 35 is received in the horizontal portion 51 of the top side rail 21, the leg
 45 35 of the brace being seated against and welded to the bottom of the side rail portion 51, and the vertical leg 34 of the brace being seated against and welded to one of the vertical walls of the side rail portion 51.

From the foregoing description, it is evident that attaching braces made after the present invention, provide very rigid and efficient constructions for attaching the body
 50 pillars to the top side rails and top front cross members. It is seen that the brace is securely attached to the pillar itself and that it is attached very rigidly to the top side rail and top front cross member in both horizontal and vertical planes, thus giving
 60 added strength and rigidity to the connection. It is also seen that added strength is given the connection by making the brace out of a single piece of sheet metal.

It is to be understood that the present in-
 65 vention is not limited to body constructions in

which the top side rails and cross members are constructed of sheet metal and that the same is equally applicable to wooden side rails and cross member constructions, as the braces can be very rigidly bolted thereto.

It is also to be understood that the present invention is not limited to the constructions shown, and that formal changes may be made in the specific embodiment of the invention described without departing from the spirit and substance of the broad in-
 75 vention, the scope of which is commensurate with the appended claims:

What I claim is:

1. In a vehicle body, a door pillar, a top side rail, a U-shaped top front cross member, and a sheet metal brace for connecting said pillar with said side rail and cross member comprising a vertical portion secured to the upper end of said pillar, an integral L-
 80 shaped portion having its flanges secured to angularly disposed surfaces of said side rail, and an integral U-shaped portion bent at an angle to said L-shaped portion, said U-shaped portion being nested within the
 90 end of said cross member and secured to the bottom and side walls thereof.

2. In a vehicle body, a door pillar, a top side rail, a U-shaped top front cross member, and a sheet metal brace for securing said
 95 door pillar to said cross member comprising a vertical portion secured to the upper end of said pillar, the upper end of said portion being bent perpendicular to provide a horizontal face terminating in a U-shaped por-
 100 tion, said U-shaped portion being nested within the end of said cross member and secured along the bottom and side walls thereof to the bottom and side walls of said cross member.

3. In a vehicle body, a door pillar, a top side rail, a U-shaped top front cross member, and a sheet metal brace for connecting said door pillar with said cross member and side rail comprising a vertical member se-
 110 cured to the upper end of said pillar having its upper end bent to provide a U-shaped integral portion spaced from said vertical member, said U-shaped portion being received by and secured to the bottom and side walls
 115 of the end of said cross member, and an L-shaped portion secured to said side rail in horizontal and vertical planes, the vertical leg of said L-shaped portion being formed integral with a side wall of said
 120 U-shaped portion.

4. In a vehicle body, a door pillar, a top side rail, a top front cross member, and a sheet metal brace for connecting said pillar with said cross member and side rail com-
 125 prising a vertical member secured to the upper end of said pillar having its upper end bent to provide a substantially horizontal face terminating in a U-shaped portion secured to said cross member, and an L-
 130

shaped portion integral with and bent at an angle to a wall of said U-shaped portion, the horizontal leg of said L-shaped portion being seated on and secured to said horizontal face of said vertical member, both legs thereof being secured to said side rail.

5 5. In a vehicle body, a door pillar, a top side rail, a U-shaped top front cross member, and a sheet metal brace for connecting said
10 pillar with said cross member and side rail comprising a vertical member secured to the upper end of said pillar, said vertical member having its upper end bent to provide a substantially horizontal face terminating in a U-shaped portion secured to the
15 sides and bottom of said cross member, and an L-shaped member having its legs secured to horizontal and vertical portions of said side rail, the horizontal leg of said L-shaped
20 member being secured to said horizontal face

of said vertical member, and the vertical leg thereof being formed integral with one of the vertical side walls of said U-shaped portion.

6. In a vehicle body, a door pillar, a door 25 hinge, a top side rail, a top front cross member, and a sheet metal brace for connecting said pillar with said side rail and cross member comprising angularly positioned integral portions secured in a plural- 30 ity of planes to said side rail and cross member, and an integral downwardly extending portion secured to said door pillar provided with an offset portion spaced from said pillar, said door hinge being secured 35 in the space between said offset portion and said pillar.

Signed by me at South Bend, Indiana,
this 20th day of October, 1927.

JAMES R. HUGHES.