Nov. 29, 1938. A. H. HABERSTUMP 2,138,523

VEHICLE BODY CONSTRUCTION HAVING CONCEALED DOOR HINGES

Filed Aug. 30, 1935

Fig. 1.

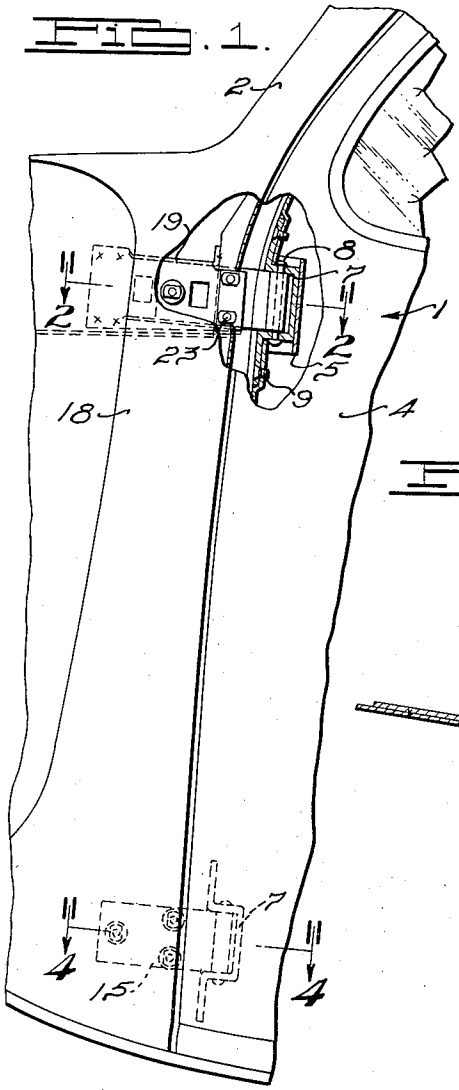
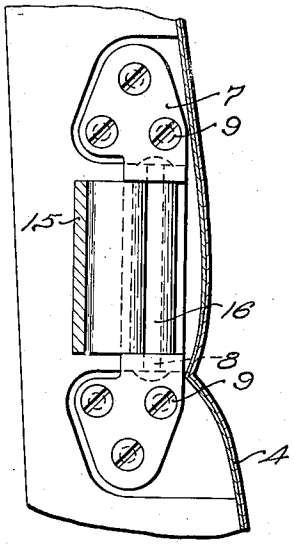


Fig. 3.



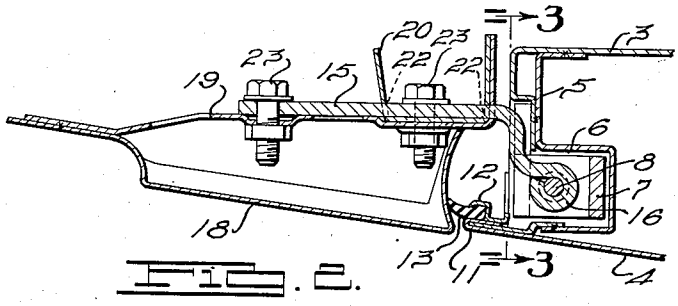


Fig. 2.

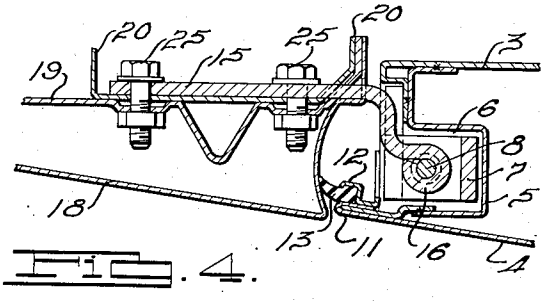


Fig. 4.

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Patented Nov. 29, 1938

2,138,523

UNITED STATES PATENT OFFICE

2,138,523

VEHICLE BODY CONSTRUCTION HAVING CONCEALED DOOR HINGES

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Application August 30, 1935, Serial No. 38,592

7 Claims. (Cl. 296—44)

This invention relates to hinges. More particularly it relates to that general class of hinges which is particularly adapted for mounting automobile doors.

It is a general object of the present invention to provide a hinge and mounting for doors which will serve the purpose of supporting an automobile door and yet will be concealed within the door and door jamb in order that the hinge construction will not be visible from either the interior or the exterior of the automobile.

Still further the invention contemplates the provision of a hinge construction in which one wing of the hinge is extended forwardly through the door post and secured to the adjacent paneling, as well as to the door post.

Yet another important feature of the invention consists in the provision of means for mounting the hinge pintle within the edge of the door frame in such a manner that relatively little space will be occupied and the movement of the window normally slidably mounted in the door will not be impaired.

Still another object of the invention consists in the provision of a door hinge in which the wing portion thereof which is secured to the body of the car, is sufficiently offset from the pivot point of the hinge, so that the hinge wing may be secured to the base of the channel forming the pillar or door post of the car.

Still further the invention contemplates the provision of a panel adjacent the door opening provided with an arcuate surface with which cooperates a piece of weather stripping carried by the door proper, in order that the crack normally occurring between the door and the door jamb on the side on which the door is hinged will at all times be retained water-tight.

Yet another object of the invention consists in means for mounting the hinge wing to the door post by means of several relatively widely spaced bolts in order that the mounting will be relatively stable and secure.

Yet another object of the invention consists in the provision of relatively accessible means for dismounting the door with respect to the body of the car.

Many other and further objects of the invention will be apparent from the following specification when taken in connection with the accompanying drawing forming a part thereof.

In the drawing:

Figure 1 is a fragmentary view of the front portion of an automobile showing a door mounted on the front pillar of the automobile embodying the improved hinge construction;

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1 showing the mounting of the upper hinge;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2 showing the means by which the hinge pintle is mounted in the door;

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 1, showing the mounting means for the lower hinge.

With more particular reference to the drawing the invention is shown in connection with a door 1 mounted upon a body pillar 2 by means of the improved hinge construction.

The door 1 as is seen in the drawing, is composed of a pair of sheet metal stampings 3 and 4 secured together to form the door structure. The jamb face of this door member is provided with apertures in the areas in which it is desired to mount the hinges. Internally of the door structure adjacent these apertures are provided auxiliary brace channels 5 secured to both the inner and outer panels of the door and serving to brace the door throughout the area where the hinge mounting aperture has been cut. Thus a recess 6 is formed in the jamb face of the door in the area in which the hinges are to be mounted.

Mounted within this recess 6 is a pintle support bracket 7, which is preferably composed of a relatively heavy strip of sheet metal offset so that it will extend a substantial distance into the recess and provide a mounting for a hinge pintle 8, the hinge pintle and mountings therefor lying completely within the recess in the jamb face of the door. The ends of this pintle support bracket are preferably secured to the jamb face of the door, and the metal thereof is preferably deformed sufficiently so that the exterior surface of this bracket will lie substantially in the normal plane of the jamb face.

The outer door panel 4 extends slightly beyond the jamb face of the door, thereby forming a flange 11. Secured to the inner surface of this flange 11 is a channel member 12 which serves to hold with the channel member 11 a piece of rubber or resilient weather stripping 13, the purpose and function of which will clearly be seen hereinafter.

Hinge wings 15 formed of relatively heavy gauge material have one end formed into a loop 16 which surrounds the pintle 8 and serves to provide a pivotal bearing for the hinge wing with respect to the door.

The pillar and cowling to which the hinge wing 15 is attached is clearly seen in the sectional views of Figs. 2 and 4. The cowl panel preferably comprises a pair of sheet metal stampings secured together and having a channel pillar of inwardly presenting section secured to the inner face of the cowl panel 10. By reference to Figs. 2 and 4 it will be seen that the channel member 20 forming the front pillar is of considerably less width adjacent the upper hinge than it is at the point where the lower hinge is secured. In order to provide a mounting for the hinge wing 15 of the upper hinge, a pair of slots 22 are cut through the side walls of the channel member 20 closely adjacent the base thereof. Thus it may be seen that the hinge wing 15 of the upper hinge can project through the slot 22 and is secured by means of a pair of bolts 23 to the inner section of the cowling panel and to the pillar and is additionally secured at its forward end by means of a third bolt directly to the cowling panel in front of the pillar.

It is noted that the channel member 20 is of sufficient width at its lower end so that it is only necessary to provide a slot in one side thereof and that the hinge wing is secured through the base of the channel member 20 directly to the interior section of the cowling by means of three bolts 25.

It will be further noted that the hinge wing portions 15 are sufficiently offset in substantially the plane of the jamb face of the door that they may lie parallel to and directly in contact with the interior surface of the inner cowl paneling member 18. The jamb face of the cowl member 18 is formed arcuate of a radius adapted to cooperate with the weather stripping member 13 carried by the flange of the door in such a manner that as the door is swung about the pivoted hinges the marginal edge of this weather stripping member will always be maintained in contact with the arcuate surface 26 of the cowl panel. This provides a weather-tight joint at the forward edge of the door at all times.

From the foregoing it will be appreciated that the hinge construction herein disclosed provides a completely concealed hinge and also provides a relatively tight joint between the forward edge of the door and the jamb to which it is secured.

It will be appreciated that many other and further modifications of the invention herein disclosed will be obvious to those skilled in the art.

What is claimed is:

1. In a door mounting, a door, a metallic door post of laterally presenting channel section, a hinge pintle carried in the jamb face of the door and a hinge wing journalled on said pintle and extending through an aperture in the side wall of said channel section door post and secured to the base of said channel.

2. In a door mounting, a door, a metallic door post of laterally presenting channel section, a hinge pintle mounted within the jamb face of said door, a hinge wing journalled on said pintle passing through the side walls of said channel and secured to the base thereof, and an intermediate portion of said hinge wing offset to lie substantially in the jamb face of the door.

3. In a door mounting, a door, a door post of laterally presenting channel section, and paneling secured to said door post, a hinge pintle carried by the door, and a hinge wing journalled on said pintle extending longitudinally through the walls of said channel and secured to the base thereof and to said paneling.

4. In a door mounting, a door, a door post of laterally presenting channel section, and paneling secured to said door post, a hinge pintle carried by the door, and a hinge wing journalled on said pintle extending longitudinally through the walls of said channel and secured to the base thereof and to said paneling, said hinge having an offset portion lying substantially in the jamb face of the door.

5. Means for mounting the front door of an automobile body on the adjacent door pillar and cowling comprising a hinge pintle carried within the jamb face of the door, and a hinge wing journalled on said pintle and having a portion extending longitudinally forward and secured to both said pillar and cowling.

6. Means for mounting the front door of an automobile body on the adjacent door pillar and cowling comprising a hinge pintle carried within the jamb face of the door, and a hinge wing journalled on said pintle having a portion offset substantially in the jamb face of said door and having a portion extending longitudinally forward and secured to said door post internally of said cowling.

7. Means for mounting the front door of an automobile body on the adjacent door pillar and cowling comprising a hinge pintle carried within the jamb face of the door, and a hinge wing journalled on said pintle having a portion offset substantially in the jamb face of said door and having a portion extending longitudinally forward and secured to both said door post and said cowling internally of said cowling.

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