

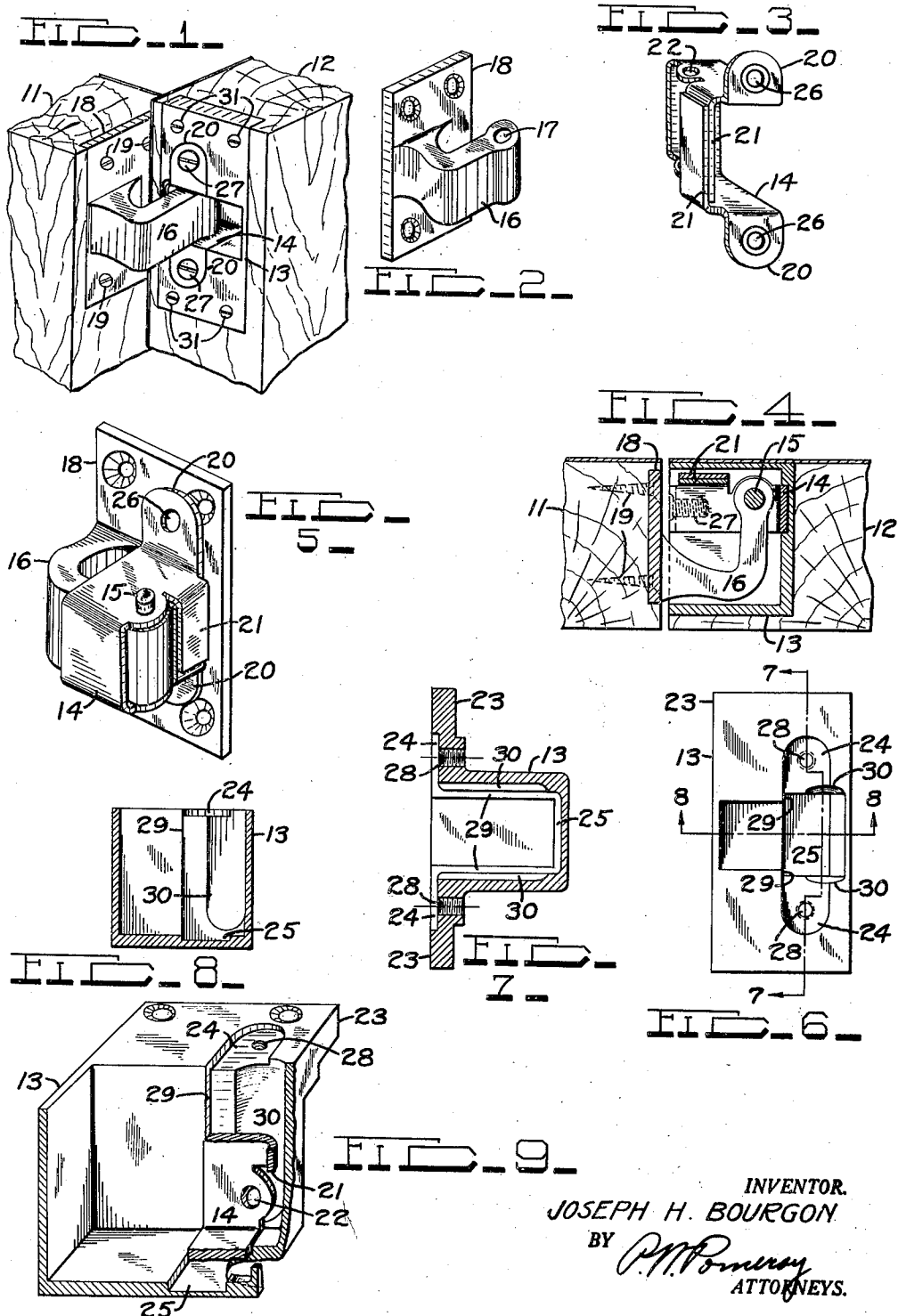
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BODY HARDWARE

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## UNITED STATES PATENT OFFICE.

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## BODY HARDWARE.

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This invention relates to body hardware and particularly to door hinges, and still more particularly to hinges of the so called concealed type used on the doors of automobiles, and the object thereof is to provide an improved hinge of this type which is novel and simple in construction, comparatively inexpensive and which will be efficient, strong and durable in use.

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

In the accompanying drawing which illustrates a suitable embodiment of the present invention and in which like numerals refer to like parts throughout the several different views:

Figure 1 is a perspective view showing a door hinged to a door post by a hinge embodying the present invention, the door being shown in open position to better illustrate the construction.

Figure 2 is a perspective view of the hinge arm member.

Figure 3 is a perspective view of the pin carrying plate member.

Figure 4 is a section taken through the center of the hinge perpendicular to the plane of the door and door-post which are shown in the connection therewith, the door being shown in closed position.

Figure 5 is a perspective view of the hinge arm member and pin carrying plate member in assembled position.

Figure 6 is a face view of the mortise casing member.

Figure 7 is a section of the mortise casing member taken on the line 7-7 of Figure 6.

Figure 8 is a section of the mortise casing member taken on the line 8-8 of Figure 6.

Figure 9 is a partially broken sectional perspective of the mortise casing member taken substantially on the line 8-8 of Figure 6, a fragment of the pin carrying plate member being shown in operative relation therewith to better illustrate the construction.

In the drawing, a door 11 is represented as being hinged to a door post 12 by a hinge

comprising a mortise casing 13, a pin carrying plate 14, hinge pin 15 and hinge arm 16. The hinge arm 16 is L shaped in plan view and is provided at one end with an opening 17 to receive the pin 15 and at the other end and perpendicular thereto is a supporting plate 18 which is adapted to be set into and secured to the edge of the door 11 by screws 19 or other suitable means.

Pivoted to the free end of the hinge arm 16 by the pin 15 is the pin carrying plate 14 constructed of sheet metal, bent U shaped, the free ends of the U being bent outwardly to form the attaching ears 20. Two projections or ears 21, one of each of which is formed on each side of the U adjacent but perpendicular to the ears 20 are bent across the open end of the U into overlapping engagement and secured together by welding or other suitable means to provide a stop surface for the hinge arm 16 to limit the outward swing thereof. Openings 22 are also provided in the sides of the U near the bottom thereof and adjacent the same edge as the ears 21 to receive the pin 15.

The pin carrying plate 14 is received in the mortise casing member 13 which is set into the edge of the door post 12 so that its outer surface is flush with the edge thereof. The mortise casing member 13 is box shaped and is provided with two outwardly extending flanges 23 at its open end. Two recesses 24 leading into the interior of the mortise casing member 13 are provided in the flanges 23 to closely receive the ears 20 of the pin carrying plate 14, and a pocket 25 is provided in the bottom of the mortise casing member 13 for closely receiving the bottom of the pin carrying plate 14. Openings 26 in the ears 20 of the pin carrying plate receive screws 27 which pass there-through and thread into the openings 28 in the flanges 23 to secure the pin carrying plate 14 in operative position in the mortise casing member 13, that is to say, with the ears 20 in the recesses 24 and the bottom of the pin carrying plate 14 in the pocket 25. The pin carrying plate 14 is thus securely anchored top and bottom in the mortise casing member 13 and the screws 27 act only to hold the former in proper position relative to the latter and not to transmit any of the forces acting on the hinge from the pin carrying plate 14 to the mortise casing

member 13. To further strengthen the construction, especially against those forces set up when the door is swung open and the hinge arm 16 presses against the stop surface ears 20, and abutting surface 29, leading from the recesses 24 to the pocket 25 is provided for the side of pin carrying plate 14, which is adapted to lie thereagainst, on the side opposite the stop surface ears 20.

10 Recesses 30 are provided on the interior of the mortise casing member 13 to provide clearance for the projecting ends of the pin 15 when the pin carrying plate 14 and hinge arm 16 are introduced therein.

15 In practice, the mortise casing member is set into and secured in the edge of the door post 12 by the screws 31 entirely independent of the hinge arm 16 and pin carrying plate 14 which are secured as a unit to the edge of the door 11. The door 11 is then moved to such position as to allow the pin carrying plate 14 and hinge arm 16 to enter the mortise casing member 13, the door 11 is swung open and the screws 27 are passed through the openings 26 and threaded home in the openings 28, securely hinging the door 11 to the door post 12. Removal of the door is likewise accomplished simply by removal of the screws 27 and

20 lifting the door off.

25 It will be evident from the foregoing description that the present invention provides a simple, strong and durable hinge and one that is relatively economical to manufacture.

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Formal changes may be made in the specific embodiment of the invention described without departing from the spirit or substance of the broad invention, the scope of

which is commensurate with the appended claims.

What I claim is:—

1. In a hinge structure, a mortise casing comprising a boxlike portion provided with attaching flanges, a U shaped sheet metal pin carrying plate having free ends bent outwardly to form attaching flanges and further provided with projecting portions adjacent the free ends of the U bent into overlapping relation adjacent the open end of the U and secured together, and an L shaped hinge arm member adapted to be received within and pivoted to said pin carrying plate, said mortise casing being provided with recesses in its face to receive the outwardly bent free ends of said pin carrying plate and a pocket in the bottom thereof for receiving the bottom of said pin carrying plate.

2. In a hinge structure, a mortise casing comprising a box like portion having side, end and bottom walls, a pin carrying member supported therein comprising a base terminating in perpendicularly extending side walls having their free ends bent outwardly into a plane parallel with said base, and integrally extending portions projecting from the edges of said side walls bent into overlapping relation and secured together in a plane perpendicular to said side walls and said base, and a hinge arm member pivoted to said pin carrying member, said extending portions on the side wall of said pin carrying member forming a stop for said hinge arm member when the same is moved into open position.

Signed by me at Detroit, Michigan, U. S. A., this 8th day of July, 1924.

JOSEPH H. BOURGON.