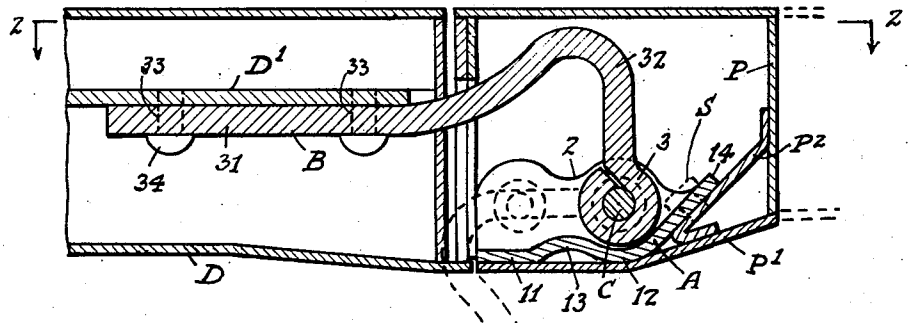
March 23, 1943. O. C. GESSLER 2,314,337

CONCEALED HINGE

Filed July 22, 1940

Fig. 1.



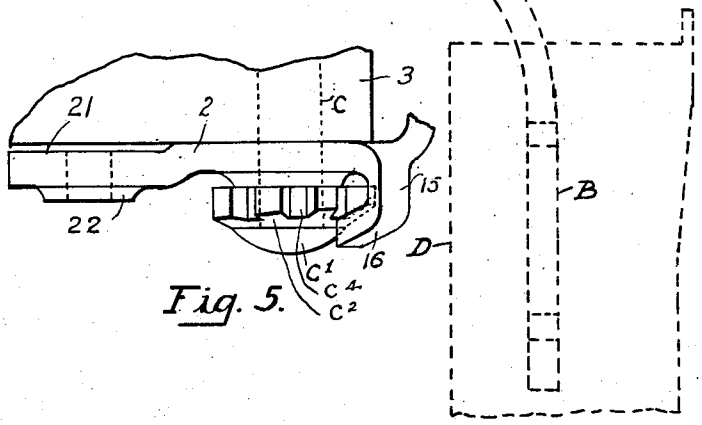


Fig. 5.

Fig. 2.

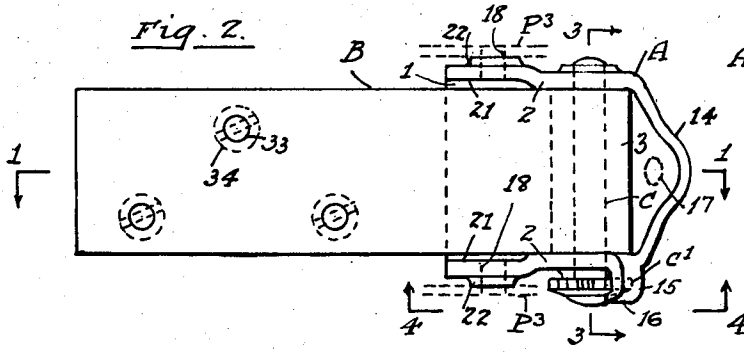


Fig. 3.

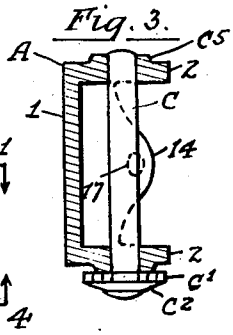
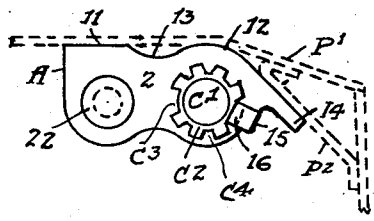


Fig. 4.



Inventor—

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Patented Mar. 23, 1943 2,314,337

UNITED STATES PATENT OFFICE

2,314,337

CONCEALED HINGE

Otto C. Gessler, Detroit, Mich.

Application July 22, 1940, Serial No. 346,875

3 Claims. (Cl. 16—135)

My invention relates to door hinges, and its principal object is to provide a hinge suitable for application more particularly to automobile doors. The chief difficulty in this application results from the under-turn or inward curvature of the door due to the fact that the body is narrower at the sill than at the upper portion, so that while the upper hinge, when of ordinary construction, might be flush with the body, the lower hinge would necessarily project to a considerable distance outwardly of the same when the door is in the closed position.

According to my invention I have provided a special construction in which the upper hinge and also the lower hinge may be flush with the body when the door is in the closed position.

A further object of my said invention is to provide a hinge of the character described which is simple in construction, economical to manufacture and so designed as to be easily and quickly installed in automobile bodies of diverse conconstructions so that it may be standardized in such manner as to permit of its manufacture in large quantities by modern production methods.

Another object of my invention is to provide an improved construction of hinge pin or pivot which, together with a simple modification of the hinge bracket, retains the said pin in its operative position without any danger of accidental displacement.

With these and other objects in view, I will now describe a preferred embodiment of my invention with reference to the accompanying drawing, in which—

Figure 1 is a horizontal section of the hinge taken on line 1—1 of Figure 2 together with fragmentary details of the adjacent portions of the body illustrating one method of installing the hinge in place.

Figure 2 is an elevational view taken on line 2—2 of Figure 1 showing the hinge detached from the body.

Figure 3 is a transverse section taken on line 3—3 of Figure 2 upon the center line of the hinge pin.

Figure 4 is an elevation of the hinge assembly taken on line 4—4 of Figure 2 showing my improved method of securing the hinge pin in place, and

Figure 5 is an enlarged fragmentary side elevation showing the pintle locking device in detail.

Like characters designate corresponding parts throughout the several views.

In the drawing, A is the stationary member or bracket of the hinge which is attached to the pillar P, and B is the moving member of the same which is attached to the door D. The member A consists in general of a back portion 1, and a pair of opposed side portions 2 arranged in vertical spaced relation and adapted to receive the eye 3 of the member B which is secured in position by means of the hinge pin C. The back portion 1 is of undulatory shape in cross section and comprises a flattened portion 11 and an arcuate portion 12 having therebetween a hollow arcuate portion 13, and beyond the portion 12 is an angularly disposed ear or lug 14, the arrangement being such that the portion 11 is adapted to be welded to the inner surface of the member P' of the pillar, while the ear 14 may be welded to a bracket P2 forming a portion of the pillar. The side portions 2 proximate to the portion 11 of the back are flared outwardly, as shown at 21 in Figure 2, so as to provide clearance between them and the member B, and upon the outside of these portions are bosses 22 adapted to be connected by welding to horizontal members P3 of the pillar. Thus the bracket A is held in an absolutely secure manner to the pillar so as to be capable of withstanding shocks of whatever nature.

The member B has an elongated flat portion 31 which is connected by an arcuate portion 32 to the eye 3, the whole being preferably made from a solid forging, and the portion 31 is provided with openings 33 adapted to receive screws 34 by which it is secured to a member D' of the door D or, alternatively, the parts may be secured together by welding.

In order to secure the hinge pin C firmly in position in the bracket A, I have provided upon the upper end of the said pin a disc-like head C' having notches therein, as shown in Figures 2, 3 and 4, and having above these notches a frustoconical portion C2. In cooperative relation with the head just described is a lug 15 upon the bracket A, the upper end 16 of which is bent inwardly so as to overlie the portion C2, and has an inner surface arranged at the same angle. The portion C2 of the head varies somewhat in height around its periphery, thereby forming a substantially circular wedge and the disc C' has a notch C3 which is large enough to pass over the projecting portion 16 of the lug 15. Thus, by bringing the notch C3 opposite the said portion, the pin may be inserted in the bracket. Then, by rotating the head of the pin, a wedge-like action is produced which tends to press the head downwards against the bracket, this rotation being effected by any well known form of

tool engaging the supplementary notches C4. The holes in the bracket which receive the pin C are reinforced by external bosses C5.

It will be observed from the foregoing description and by reference to the drawing that I have provided a hinge which is simple in construction and which is capable of being applied to automobile bodies of widely varying design, and which allows the door to swing clear of the body when in the open position as shown in broken lines in Figure 1 of the drawing. It is contemplated that this hinge will be standardized and manufactured in large quantities, and that small variations in detail of the body parts can be made to receive it. Also, while the bracket I has been hitherto described as being welded to the pillar members, it may obviously be secured by screws, such as designated S in Figure 1, or bolts instead of welding, the bolts passing through holes 17, 18 as indicated in broken lines in the drawing. It will be noted, further, that the one piece bracket, preferably a steel forging, possesses great strength in all directions having regard to its light construction.

While I have herein shown and described a preferred embodiment of my said invention, it will be obvious to those skilled in the art to which the same pertains that various modifications may be made in detail to suit any particular or peculiar requirements without departing from the spirit of my invention as defined in the appended claims.

Having thus described my said invention, what I claim and desire to secure by Letters Patent of the United States is:

1. In a hinge of the character described, the combination, with a hinge strap member to be secured to a door and having an eye; of a bracket to be secured to a stationary member and comprising a back member and a pair of integral side members; and a hinge pin supported in openings in said side members and adapted to pass through the eye of said first-mentioned member and swingably support the same, said pin having a wedge-like head varying in height around the periphery and said bracket having a lug arranged in overhanging relation to said head and cooperating with the same to effect a clamping movement thereupon as said pin is rotated.

2. In a hinge of the character described, the combination, with a hinge strap member to be secured to a door and having an eye; of a bracket to be secured to a stationary member and comprising a back member and a pair of integral side members; and a hinge pin supported in openings in said side members and adapted to pass through the eye of said first-mentioned member and swingably support the same, said pin having a wedge-like head varying in height around the periphery and said bracket having a lug arranged in overhanging relation to said head and cooperating with the same to effect a clamping movement thereupon as said pin is rotated, said head being notched to pass over said lug when in its initial or unclamped position.

3. In a hinge of the character described, the combination, with a hinge strap member to be secured to a door and having an eye; of a bracket to be secured to a stationary member and comprising a back member and a pair of integral side members; and a hinge pin supported in openings in said side members and adapted to pass through the eye of said first-mentioned member and swingably support the same, said pin having a wedge-like head varying in height around the periphery and said bracket having a lug arranged in overhanging relation to said head and cooperating with the same to effect a clamping movement thereupon as said pin is rotated, said head being notched to pass over said lug when in its initial or unclamped position and having auxiliary notches for receiving wrench means.

OTTO C. GESSLER.