Oct. 4, 1938. E. B. G. LEFEVRE 2,132,266

GOOSENECK CONCEALED HINGE

Filed Aug. 5, 1936

Fig. 1

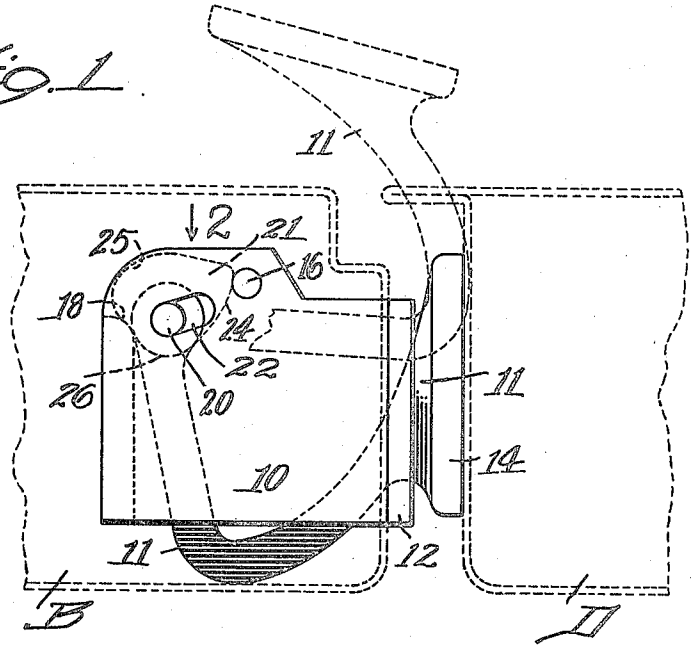


Fig. 2.

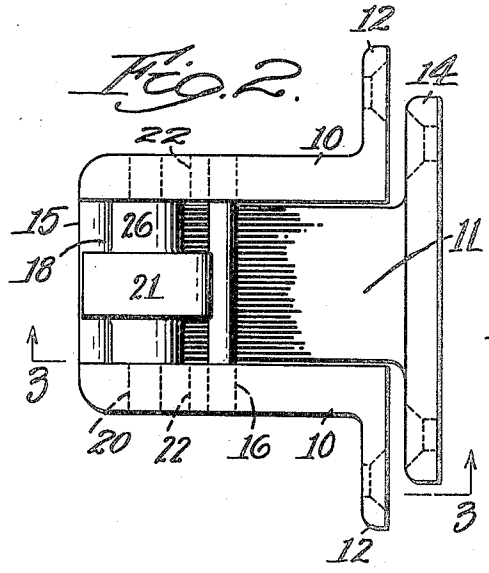


Fig. 4

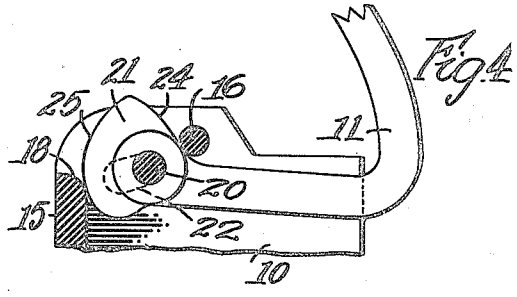
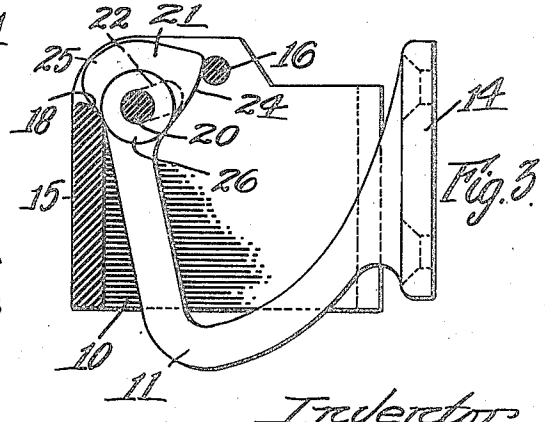


Fig. 3



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GOOSENECK CONCEALED HINGE

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2 Claims. (Cl. 16—135)

This invention relates to hinges of the gooseneck type particularly designed for use on automobile doors or in other places where an abrupt "throw-out" action is necessary in order to clear an outwardly curved surface or other obstruction. The usual gooseneck hinge has been found lacking in clearance sufficient for such purposes.

It is the general object of my invention to provide a simple and reliable construction by which a gooseneck hinge may be provided with a shiftable pivot which substantially increases the throw-out action.

A further object is to provide a gooseneck hinge involving a single moving part only but in which a substantial increase in throw-out action is attained.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawing, in which

Fig. 1 is a plan view of my improved gooseneck hinge;

Fig. 2 is a rear elevation thereof, looking in the direction of the arrow 2 in Fig. 1; and

Figs. 3 and 4 are sectional views taken along the line 3—3 in Fig. 2 and illustrating the operation of my improved hinge.

Referring to the drawing, my invention as shown therein comprises a fixed hinge member 10 and a movable hinge member 11.

The fixed member 10 is provided with flanges 12 by which it may be secured by screws or bolts to the edge portion of an automobile body B or other supporting structure. The movable hinge member 11 is similarly provided with a flanged portion 14 which may be secured by screws or bolts to the edge of a door D or other swinging member.

The fixed member 10 is substantially U-shaped in cross section, as shown in Fig. 2, and is provided with connecting portion 15 and a cross-pin 16. The connecting portion 15 has a cam surface 18 at one edge thereof for a purpose to be described.

The cross-pin 16 is preferably of hardened steel or other wear-resisting material, and the cam surface 18 may be case-hardened if desired. Both the cross-pin and cam surface are preferably smoothly polished. The cross pin 16 may be allowed to rotate by making it a little shorter, with a loose fit in its bearings, and spinning over the stock of the member 10 to prevent the pin from falling out.

The movable or gooseneck member 11 is provided with a pivot-pin 20 and with a cam portion 21. The pivot-pin extends through slots 22 in the upper and lower portions of the fixed hinge member 10, and the cam portion 21 has inner and outer cam surfaces 24 and 25 which coact with the cross-pin 16 and with the fixed cam surface 18 respectively.

The cam surfaces of the portion 21 should also be carefully polished and may be case-hardened or otherwise made increasingly wear-resisting as desired.

The pivot-pin 20 is preferably a drive fit in the hub 26 of the movable or gooseneck member 11 and is forced into position after the hinge members 10 and 11 are assembled. If it is desired to separate the hinge members, the pivot-pin 20 is similarly forced out of the hub 26.

The operation of the hinge is clearly shown in Figs. 3 and 4, Fig. 3 indicating the initial position of the parts when the hinge is closed. As the hinge is opened, the first movement of the door will be substantially a simple swinging movement about the axis of the pivot-pin 20 in the position shown in Fig. 3.

After a few degrees of opening movement, sufficient to clear the door casing at the opposite edge of the door, the cam surface 25 comes into action and coacts with the cam surface 18 to force the entire gooseneck member 11 and door D to the right in Figs. 3 and 4, with the pivot pin 20 moving along the slots 22 from the position shown in Fig. 3 to the position shown in Fig. 4.

During this shifting movement, the inner cam surface 24 coacts with the cross-pin 16 to prevent loose or uncontrolled reverse movement of the gooseneck member and the door or other structure attached thereto.

When the door is being closed, the surface 24 coacts with the cross-pin 16 to move the pivot-pin 20 in the opposite direction along the slots 22, and the cam surface 25 prevents uncontrolled movement.

By varying the dimensions of the cam portion 21, and by also varying the angle or length of the slots 22, both the extent and the angular direction of the shifting movement of the pivot 20 of the movable hinge member may be determined and varied as desired.

The cam 21 should maintain continuous contact with the parts 16 and 18 to prevent loose motion.

By the simple construction above described, involving the use of a single movable part only, I am able to adapt a gooseneck type hinge to pur-

poses for which the usual gooseneck with a fixed pivot is not adapted by reason of its limited clearance. My improved construction is particularly desirable for the reason that no springs or other loose or additional parts are required.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:—

1. A gooseneck hinge comprising a fixed member having attaching portions and a movable gooseneck member pivoted thereon, said movable member having a pivot stud with a cam formed thereon and said fixed member having guide slots for said stud and having fixed abutting elements slidably engaged by said cam to effect positive movement of said movable member toward said attaching portions as the hinge is opened and positive movement in the opposite direction as the hinge is closed.

2. In a gooseneck hinge comprising fixed and movable members and adapted to connect fixed and movable elements which when in closed relation lie in the same plane and have substantially abutting edge portions, that improvement which consists in providing the movable gooseneck member with a pivot portion having spaced cam surfaces formed integral therewith, and in providing said fixed member with spaced fixed portions which slidably coact with said cam surfaces to shift the pivotal axis of said movable gooseneck member outward relative to said fixed member and toward the abutting edge portion thereof as the hinge is opened, and in the reverse direction as the hinge is closed, said cam surfaces and fixed portions cooperating in pairs to prevent uncontrolled loose motion between said fixed and movable elements.

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