Feb. 23, 1943. E. F. REYNOLDS 2,311,965

HOOD LATCH

Filed June 27, 1941 2 Sheets-Sheet 1

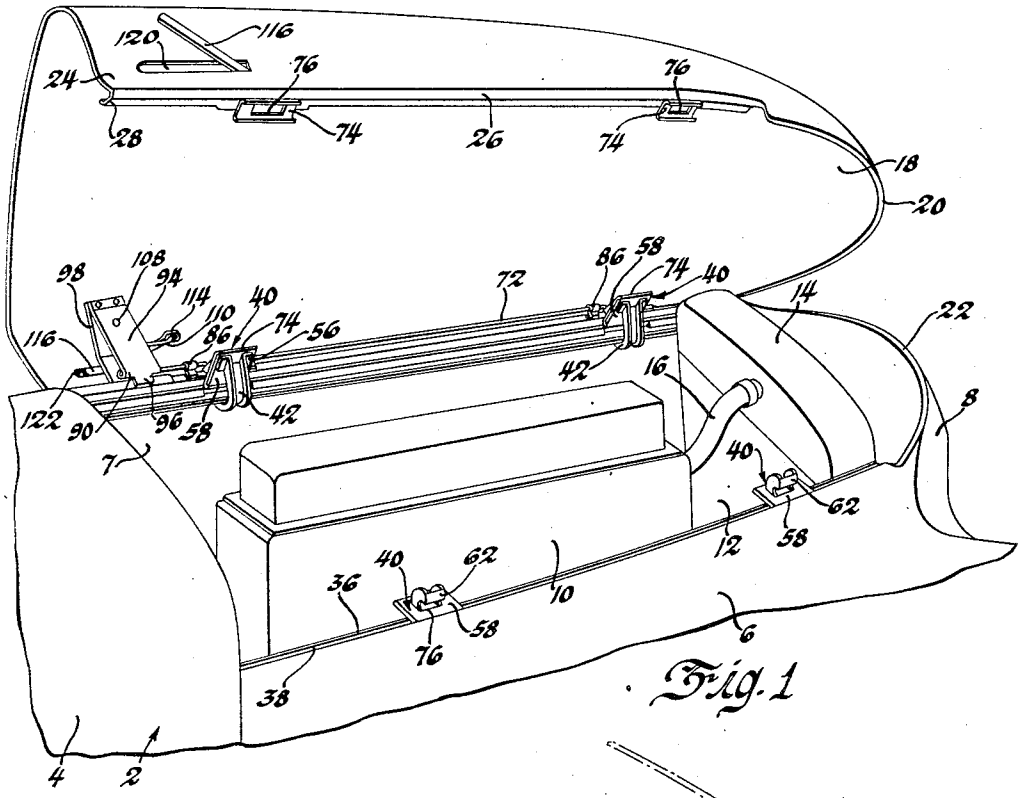


Fig. 1

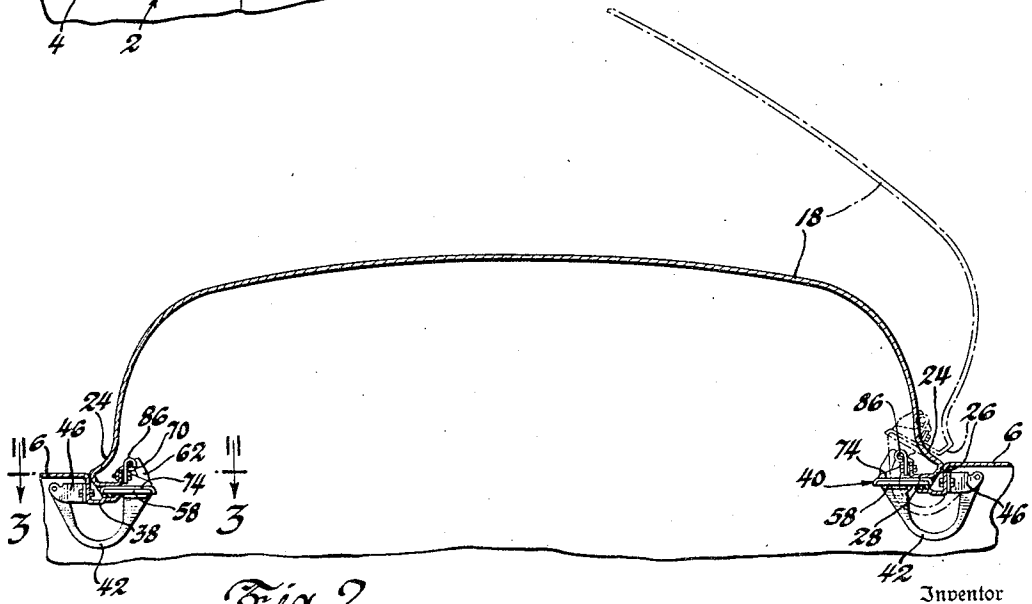


Fig. 2

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Filed June 27, 1941 2 Sheets-Sheet 2

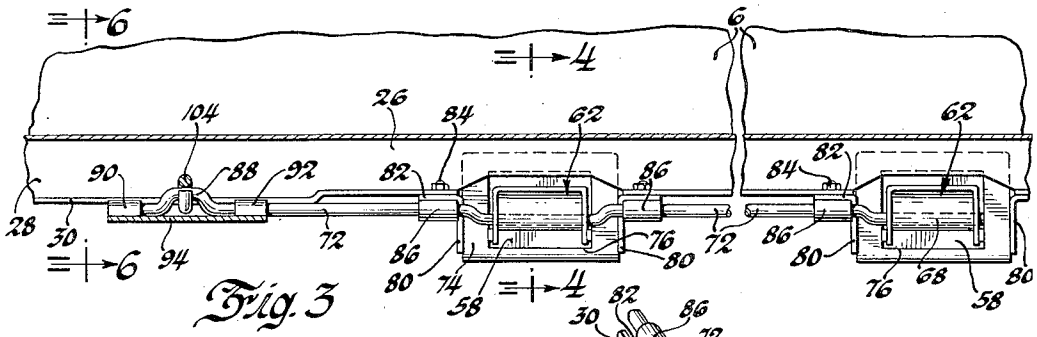


Fig. 3

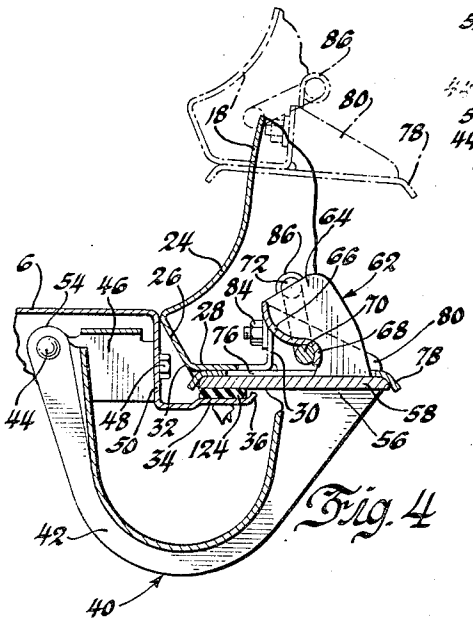


Fig. 4

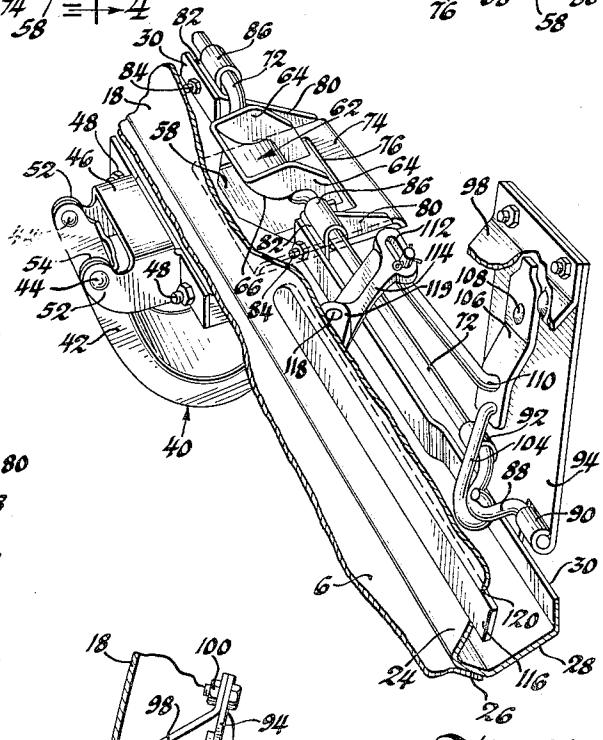


Fig. 7

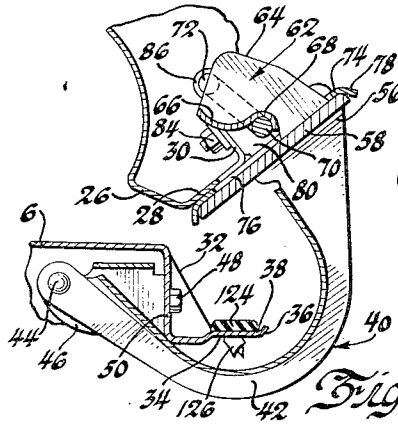


Fig. 5

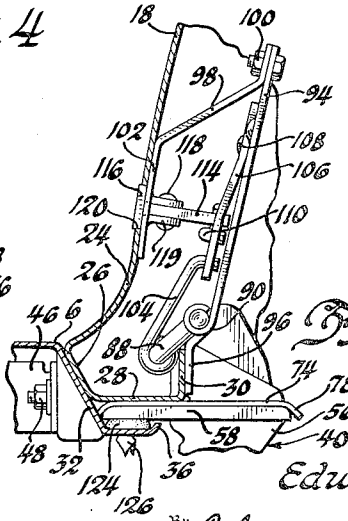


Fig. 6

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UNITED STATES PATENT OFFICE

2,311,965

HOOD LATCH

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Application June 27, 1941, Serial No. 399,993

6 Claims. (Cl. 16—128.1)

This invention relates to latches for securing the hood door of an automobile hood.

The latch relates to hood doors which may be swung on one latch at one side when the latch at the opposite side of the hood is released.

The novelty of the invention relates to specific details of construction as disclosed in the specification and the claims.

On the drawings

Figure 1 is a more or less perspective view of the front end of an automobile showing the hood in raised position better to disclose the latching mechanism.

Figure 2 is a transverse sectional view through the hood and hood door of Figure 1 showing the latching mechanisms at the two sides and with the hood in raised position in dotted outline.

Figure 3 is a sectional plan view on the line 3—3 of Figure 2.

Figures 4 and 6 are sections on the corresponding lines of Figure 3, the hood door being shown in raised position in dotted outline in Figure 4.

Figure 5 is a view corresponding to Figure 4 but with the hood door in raised position.

Figure 7 is a perspective view of one of the latches and the operating mechanism with the hood door and fender broken away better to illustrate the construction.

Referring to the drawings, the numeral 2 indicates a vehicle as a whole. The vehicle has the usual cowl 4, the hood side or fender 6, the shields or shrouds 7 between the engine compartment and the outside, the grille 8, engine block 10, radiator 12, upper tank 14 and hose connection 16 between the upper tank and the engine block. The hood door is indicated at 18 and comprises a single piece of metal more or less semi-dish shaped and semi-oval in outline. The front end 20 of the hood is rounded to fit on the rounded front end 22 of the grille top.

At the bottom edges of the hood door the metal is slightly outwardly turned at 24 and then angled or flanged inwardly at 26. The horizontal part or flange 28 then forms a continuation of the inclined part or flange 26 and at the extreme inner edge of the hood there is an upturned flange 30.

The fender or hood sides 6 have an inclined part or flange 32 at the edge to mate with the inclined part or flange 26 of the hood. The edge is then inturned at 34 to form a horizontal part which is under the horizontal part 28 of the hood door 18. The edge of the fender or hood side is then upwardly turned as at 36 as is best shown in Figures 4, 5, and 6 to form a trough 38 along the edge of the hood sides. In the downward or latched position of the hood door 18 the inclined parts 32 and 26 abut rather closely to make a tight joint and prevent any rattling of the hood door and to prevent rain from entering.

Each side of the hood has two individual latching mechanisms 40 which are identical and the description of one will suffice for all four. Each mechanism comprises the U-shaped or gooseneck hinge member 42 pivoted at one end by means of two pins 44 in the bracket 46 secured by the bolts 48 to a depressed part 50 of the fender side. Each depressed part 50 is formed by pressing in the metal of the inclined side 32. The shape of the bracket 46 and the hinge member 42 is best shown in Figure 7. The bracket has the ears 52 which cooperate with the ears 54 on the end of the hinge member 42 to form the hinge connection.

The opposite or free end 56 of the hinge member 42 extends beyond the line of junction between the hood 18 and the fender side 6 into the interior of the hood and has secured thereto a plate 58 overlapping parts 28 on the hood and 36 on the fender edge and having an opening through which there projects the hook end 62 of the hinge member. The plate 58 prevents the hinge member 42 from falling lower than the position shown in Figures 2 and 4. The hook end 62 has the lateral wings 64 for strengthening purposes and the rounded part 66 formed with a recess 68 to receive the U-shaped part 70 of a locking rod 72.

The horizontal part 28 of the hood door edge has secured thereto a plate 74. This plate has an opening 76 to enable the hook 62 to pass therethrough and has the downturned edges 78 to cause the plate 74 accurately to fit on the plate 58 secured to the hinge member 42. The plate 74 has the lateral wings 80 which in turn have extensions 82 which are parallel with and abut the upwardly directed edge 30 of the hood door side. The flanges 82 are secured to part 30 by means of the bolts and nuts 84.

The rod 72 is pivotally mounted in small brackets 86 secured to the upturned flange 30 at the edge of the hood and at each point where one of the hood mechanisms 40 and the hook 62 is positioned the rod is provided with the downturned or U-shaped parts 70.

The rod 72 is also provided with the crank 88 adjacent one end, preferably the rear end. This crank is journaled in the bearings 90 and 92 formed at the end of a plate 94 secured at its lower end 96 as by welding to the flange 30 and secured at its upper end by means of a plate 98 to the inside of hood 18 as is best shown in Figure 6. A plate 98 is secured at its top by

means of the bolts and nuts 100 to the top of the plate 94 and is welded at its lower end by means of the flange 102 to the hood side.

The crank 88 has one end of a link 104 secured thereto while the other end is secured in an opening in a lever 106 pivoted at 108 to the plate 94. A second opening is provided in the lever 106 and a second link 110 is secured in the opening in the lever 106 and has its other end bent and secured in a slot 112 formed in the end of one arm 114 of a bell crank lever 116 pivoted at 118 to ears 119 projecting inwardly from the side of the hood, or if desired, formed from the flange 102 of the connecting plate 98. The outer arm of the bell crank lever 116 is relatively long and flat and fits into a correspondingly shaped opening 120 formed in the hood side so that when the latching mechanism is in latched position the handle or exterior member of the bell crank 116 will be flush with the side of the hood.

The opening 120 is extended as shown at 122 (Figure 1) to enable an operator to insert a finger therein to grasp the lever 116 from the opposite side to operate the hood latch mechanism.

Referring to Figures 3 and 7, the hood latch mechanism is shown in its latched position. If the operator desires to unlatch the hood at one side he will insert his finger in the extension 122 of the opening 120 to place his finger at the rear end of the outer arm of the bell crank lever 116. By now pulling outward on the bell crank the inner arm 114 will cause the link 110 to move to swing the lever 106, which in turn will pull upwardly on the link 104 to cause the crank 88 and the rod 72 to rotate and to move the U-shaped part 70 of the rod from the full line position shown in Figure 4 to the dotted line position. In the dotted line position the latching mechanism will be released to enable the hood on the released side to be raised. The latching mechanism at the opposite side being still in latched position will act as a hinge for the door.

Referring to Figures 4, 5, and 7, a rubber pad 124 is mounted at each latch and serves as an impact member for the end of the plate 58 when the hood is moved from the raised to the down position. This pad 124 is secured in place by suitable clips 126. In the closed position shown in Figure 2, the inclined sides 26 and 32 fit relatively close against each other to prevent rain running into the crack between the hood side and the fender. Any water which should pass through the crack will be caught in the trough 38 and caused to flow to the rear end of the trough where the water will be allowed to fall to the ground outside the shield or shroud 7.

I claim:

1. In a latching mechanism for the hood door of an automotive vehicle, means at each side of the hood door to act as a hinge upon which to swing the door upon the release of the latching means at the opposite side, said means comprising a plurality of spaced mechanisms, each including a member hinged at one end to a rigid part of the vehicle, a latching element secured to the unhinged end, flanges on each side of the hood door, means mounted on each side of the hood door at the inside and over the flanges thereof to engage all the latching elements at one side to hold the hood door in latched position, and means on the hood door operable simultaneously to disengage all of the engaging means on one side of the hood door to enable the door to be raised from that side.

2. In a hinge structure for the hood door of the hood of an automotive vehicle, a U-shaped member hinged to a fixed part of the vehicle, said member extending across the joint between the hood door and the fixed part of the vehicle, a plate secured to the free end of the member, a hook extending through the plate, a piloting plate secured to the hood door and adapted to be received over the plate of the hinge member properly to seat the door in its lowered position, and means in the door engageable by the hook to hold the door in latched position, said means being operable to become disengaged from the hook to enable the hood door to be raised.

3. In a latching mechanism for the hood door of an automotive vehicle, said mechanism being duplicated at both sides of the vehicle, the mechanism on one side acting as a hinge to enable the door to be raised when the mechanism at the other side is released, latching members hinged to a rigid part of the vehicle and extending across the line of junction between the door and the rigid part, a flange on each side of the hood door and means mounted over the flanges on the inside of the hood door and engaging the free end of the members to hold the door in latched position, said means being operable from outside the vehicle to release the means from the free end to enable the door to be raised.

4. In a latching mechanism for the hood door of an automotive vehicle, an inwardly directed flange on each side of the hood door, a plurality of plates secured to the flanges in spaced relation, each plate having an opening, hinge members pivotally mounted on the vehicle adjacent the plates, a catch on the free end of each hinge member, said catches adapted to extend through the openings and above the flanges, plates secured to the hinge members and adapted to abut against the plates on the hood door when the door is in closed position, flanges on the vehicle adjacent the hood door sides, said door flanges and said vehicle flanges abutting each other in tight relation when the door is in closed position, said plates on the hinge members adapted to rest on the vehicle flanges to maintain the hinge members in operative position, and means inside the hood and secured to the hood door and operable from outside the vehicle to engage or to disengage all of the catches on one side to retain the hood door in latched or in released position respectively, the release of the said means from the catches on one side of the hood enabling the door to be raised from that side.

5. In a latching mechanism for the hood door of an automotive vehicle, an inwardly directed flange on each side of the hood door, a plurality of plates secured to the flanges in spaced relation, each plate having an opening, hinge members pivotally mounted on the vehicle adjacent the plates, a catch on the free end of each hinge member, said catches adapted to extend through the openings and above the flanges, plates secured to the hinge members and adapted to abut against the plates on the hood door when the door is in closed position, flanges on the vehicle adjacent the hood door sides, said door flanges and said vehicle flanges abutting each other in tight relation when the door is in closed position, said plates on the hinge members adapted to rest on the vehicle flanges to maintain the hinge members in operative position, and a rod inside the hood on each side thereof and journaled to the side of the hood door and having shaped parts adapted to be engaged with or disengaged from

the catches upon movement of the rod to retain the hood door in latched or released position respectively, the release of the said shaped parts from the catches on one side of the hood enabling the door to be raised from that side.

6. In a latching mechanism for the hood door of an automotive vehicle having inclined flanges on both side edges of the hood door and mating inclined flanges on the edges of the vehicle fender adapted to engage the flanges on the hood door, members hinged to the fender of the vehicle at each side of the hood door at the inclined flanges, retaining means movably mounted on the inside of the hood door adjacent each side thereof, the ends of said members being shaped to receive and be held by the retaining means, and means on said hood door operable to cause said retaining means to engage the ends of said members to hold the door in latched position and to be released therefrom to enable the door to be raised.

EDWARD F. REYNOLDS.