LATCH FOR AUTOMOBILE FENDER SHROUDS OR THE LIKE

Filed July 14, 1934
UNITED STATES PATENT OFFICE

2,062,597

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Application July 14, 1934, Serial No. 735,124

1 Claim. (Cl. 292—II0)

The present invention relates to an improved latch for an automobile fender shroud, and has for an object to provide a latch which will securely hold the shroud against vibration and looseness, and which may be actuated with facility to both secure and release the shroud. A further object is to provide a latch which will exert both a lifting pressure to hold the shroud up against the fender and a lateral drawing pressure to pull the fender toward the edge of the shroud, thus not only tightly holding the shroud in place, but providing a substantial reinforcing structure for the fender. Another object is to provide a latch in which resilient means provided between the edge of the shroud and the edge of the fender will be employed to yieldably retain the latch in latched position, so that in the latch mechanism there will be no necessity for springs. Another object is to provide a latch which may be permanently secured to the shroud, and which will be entirely enclosed and free from projecting parts and narrow corners, to the end that the mechanism will be effectually protected against the entrance of mud and dirt, and any mud or dirt that may collect upon the outside of the casing may be readily removed.

With the above and other objects in view, an embodiment of the invention is shown in the accompanying drawing, and this embodiment will be hereinafter more fully described with reference thereto, and the invention will be finally pointed out in the claim.

In the drawing:

Fig. 1 is a side elevation of the contiguous portions of the fender and shroud, provided with the latch according to my invention.

Fig. 2 is a side elevation, reduced, showing the entire fender and shroud.

Fig. 3 is a side elevation of the latch separated from the shroud, and with a portion of the mounting plate broken away, the full lines showing the latching or projected position, and the dot-and-dash lines showing the released or retracted position.

Fig. 4 is a horizontal sectional view, taken along the line 4—4 of Fig. 1.

Fig. 5 is a vertical sectional view, taken along the line 5—5 of Fig. 1.

Fig. 6 is a vertical sectional view, taken along the line 6—6 of Fig. 1.

Fig. 7 is a front end view of the latch.

Similar reference characters indicate corresponding parts throughout the several figures of the drawing.

Referring to the drawing, the latch, according to the exemplary illustrated embodiment of my invention, comprises a casing consisting of a mounting plate 10 and a cover plate 11 having a right angularly bent forward wall 12 and inclined side walls 13 having outwardly bent base flanges 14, the wall 12 being secured by lugs 15 formed thereon and bent into slotted recesses 16 formed in the plate 10, and the base flanges 14 being secured by lugs 17 on the plate 10 bent over upon the flanges 14 in notches 18 formed in said flanges. An upwardly projecting pocket portion 19 is provided in the casing for receiving the bolt in the retracted position, and the mounting plate 10 is provided with three ears 20 for securing the casing to the shroud 21, these being preferably spot-welded to the inner surface of the shroud.

A hub comprising a relatively large diameter portion 22, having a square hole 23 therein, and a relatively smaller diameter portion 24, having a circular hole 25 therein, is rotatably mounted in the casing, the portion 22 being journaled in a bearing aperture 26 provided in an elongated indented portion 27 of the plate 10, and the portion 24 being journaled on a circular flange 28 punched inwardly from the plate 11 and engaged in the hole 25. The portion 22 has flats 29—29 formed on its inner end upon which is mounted a cam 30, the cam having a correspondingly shaped opening 31 engaged upon the hub and being rigidly secured therewith by swaging over the edges of the flatted portions. The periphery of the cam has a concentric high portion 32, a concentric low portion 33 diametrically opposite to the portion 32, and a gradually rising portion 34 between the portions 32 and 33.

A curved arm 35 has one end pivotally connected at 36 to the cam 30 adjacent the end of the cam portion 32, this arm in the operative position extending downwardly about and beneath the hub portion 24. Its other end is pivotally connected at 37 to the inner end of the latch bolt 38. The bolt is of angular form, its inner portion, in the operative position, being downwardly inclined, and its outer portion, which has a slight offset bend 39, being horizontally disposed and movable through an elongated slot 40 in the flange 12 of the casing. A hook portion 41 is provided at the end.

Upon the lower edge of the downwardly inclined inner end portion of the bolt there is formed a transversely extending portion 42 having an upwardly bent ear 43 disposed in spaced parallel relation to the bolt and in alignment with the cam 30 and with its edge engaged by the 55
periphery of the cam, this ear and the bolt having transversely aligned circular holes 44 and 45 in which a slidable pivot bearing pin 46 is engaged. The end portions of this pin are flattened, as at 47 and 48 and these end portions are respectively engaged in slots 49 and 50 respectively provided in the indented portion 27 of the plate 18 and in the plate 11. The slot 50 is covered by an outwardly embossed cover plate 51, spot welded to the plate 11.

The shroud 21 is provided at its edge with an inwardly bent curled flange 52 having a facing 53 of rubber secured therein, and is adapted to engage the inwardly curled edge flange 66 of the fender. Slots 55 and 56 are respectively provided in the shroud flange 52 and in the rubber facing through which the bolt moves, and a slot 57 is provided in the flange 54 of the fender, the fender flange being preferably reinforced at its inner side by a slotted metal plate 58.

As shown in Fig. 2 the shroud is provided at the opposite side from the latch with a fixed hook 59 which in mounting the shroud is first engaged in a slot 60, in the edge of the fender, whereupon the other end of the shroud is lifted up about the hook 59 as a fulcrum to bring the latch into relation with the fender slot 57. A hole 61 is provided in the shroud in line with the square hole 23 for insertion of a suitable operating tool.

The dot-and-dash lines, Fig. 3, indicate the inactive or retracted position of the latch bolt, the high portion 32 of the cam engaging the ear 43 and holding the pivot bearing pin 46 forwardly in the slots 49 and 60 and the end of the bolt being swung upwardly in the slot 41. In order to bring the latch to operative position the cam is turned in counter-clockwise direction from the dot-and-dash line position. As long as the high concentric cam portion 32 remains in contact with the ear 43 of the pivot pin remains fixed and the bolt is swung downwardly about the pin to horizontal position through the pulling action of the arm 35. During this movement the bolt hook 41 enters the fender slot 57 and presses the shroud upwardly as the bolt engages the end of the slot and continues its swinging movement. As the rising portion 34 of the cam engages the ear, the bolt is drawn inwardly, the hooked end 41 tightly drawing the fender toward the shroud and compressing the rubber facing 53. The line between the pivot 37 and the pivot 36 now being above the axis of the cam hub, the pressure of the compressed rubber facing 53 locks the parts in place, the pull of the pivot 36 upon the cam being in 10 counter-clockwise direction. To disengage the catch the cam is turned in clockwise direction, the pressure being released as the pivot 36 passes over dead center. The bolt first moves outwardly and then swings upwardly clear of the fender 15 slot.

I have illustrated and described a preferred and satisfactory embodiment of the invention, but it will be obvious that changes may be made therein, within the spirit and scope thereof, as 20 defined in the appended claim.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

In a latch of the character described, a latch bolt, a pivotal mounting for said bolt about which it is adapted to swing, means slidable supporting said pivotal mounting whereby said bolt has longitudinal movement, a rotatable actuating member, a link pivotally connected between said actuating member and said bolt for imparting swinging movement to said bolt through rotation of said actuating member, and cam surfaces on said actuating member directly engaging said bolt adapted to impart sliding movement to said pivotal mounting and including a low concentric 35 portion, a high concentric portion, and a gradually rising portion between said low and high concentric portions, said bolt adapted to have swinging movement only during relation of said concentric cam portions therewith and longitudinal 40 movement during relation of said rising portion therewith.

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