Nov. 30, 1926. 1,609,164

C. B. GILMORE

CLOSURE FASTENER

Filed August 25, 1924 2 Sheets-Sheet 1

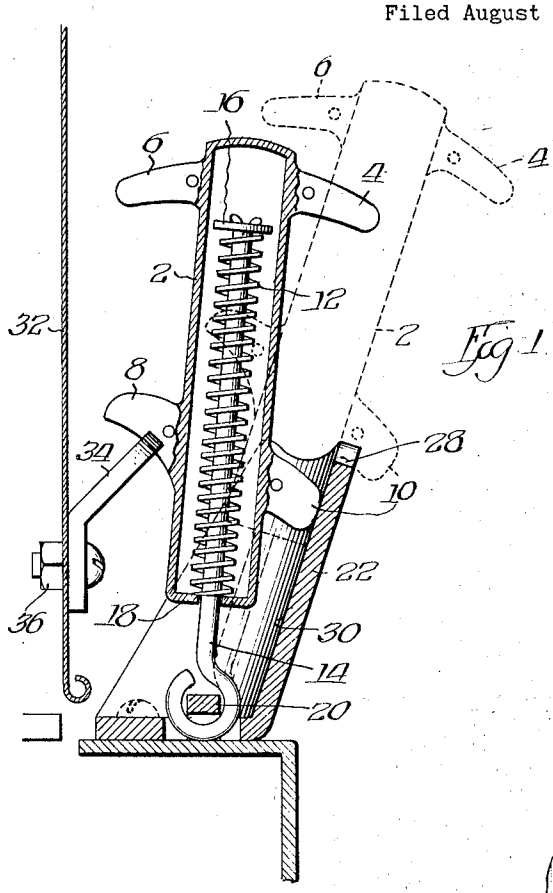


Fig. 1

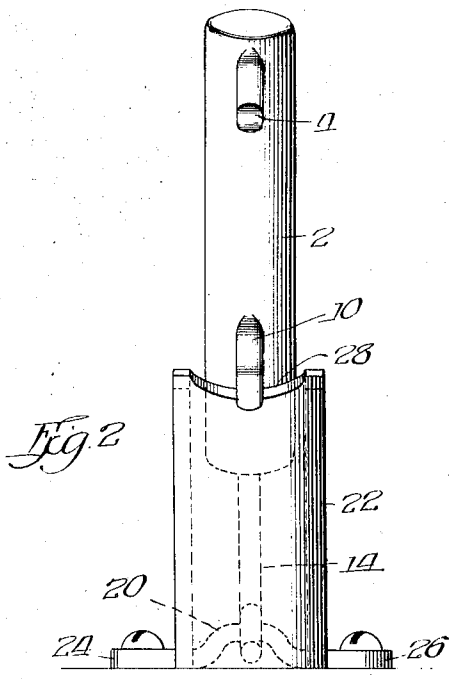


Fig. 2

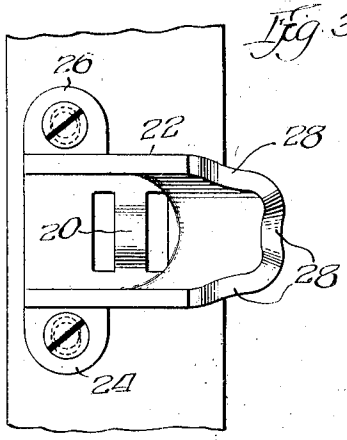


Fig. 3

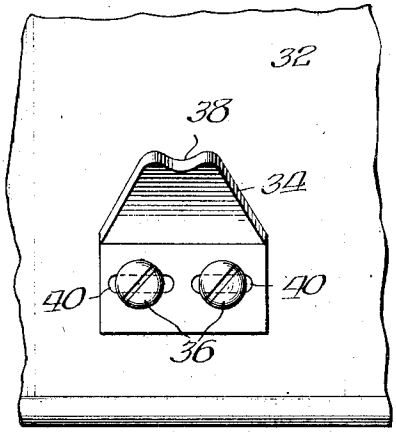


Fig. 4

Witness

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Fig. 5

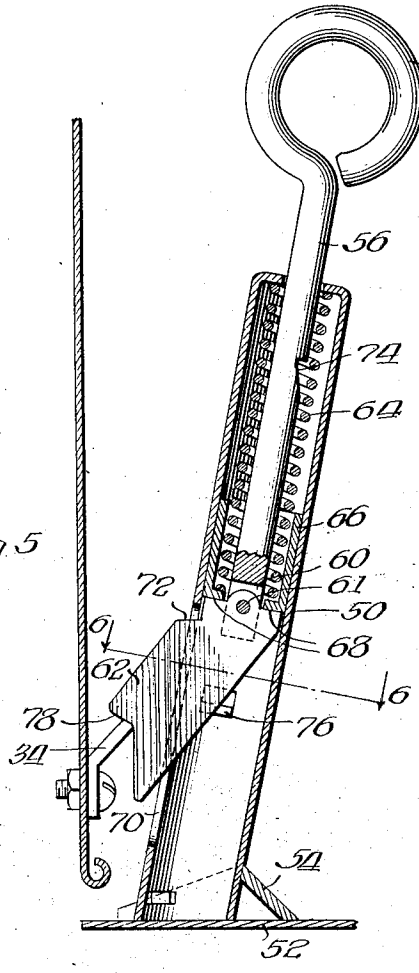
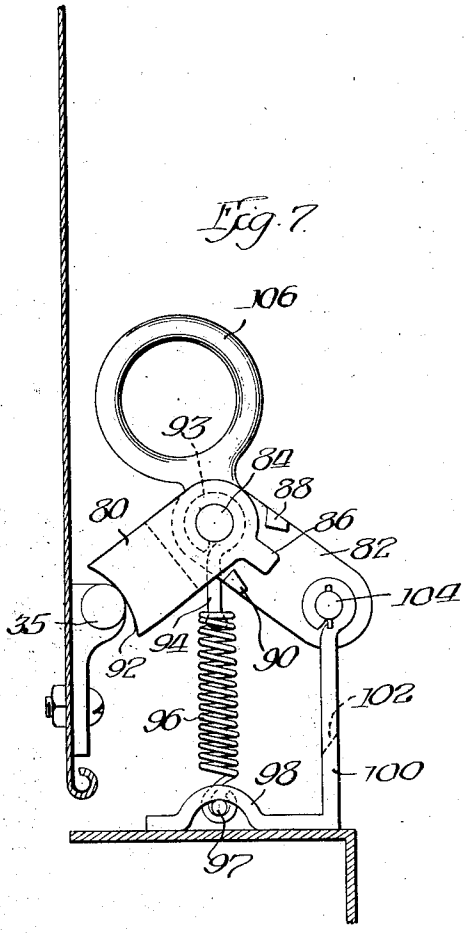


Fig. 7



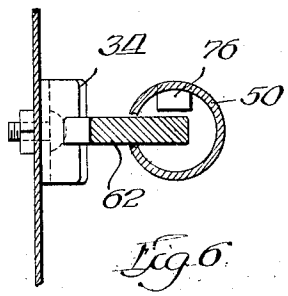


Fig. 6

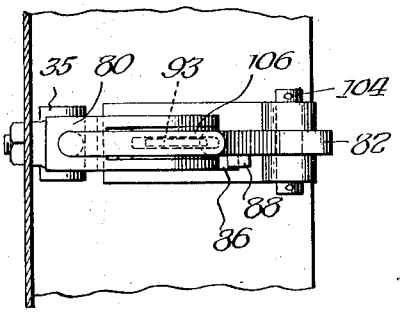


Fig. 8

Witness:

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Patented Nov. 30, 1926. 1,609,164

UNITED STATES PATENT OFFICE.

CHARLES B. GILMORE, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHICAGO FORGING & MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CLOSURE FASTENER.

Application filed August 25, 1924. Serial No. 733,882.

This invention pertains to closure fasteners and is more particularly directed to means for firmly and releasably securing the hood or cover of an automobile engine to the automobile frame or similar structure when the hood is in a closed position.

Automobile engine hoods are often secured by a spring latch of one character or another, usually consisting of a spring secured rod provided with a finger hold and a projection or a hook adapted to cooperatively engage an opening eye, projection, or the like, in or on the hood, but none of them provide means to guide the latch into engagement with the hood nor means to support the latch in its disengaged position. Common forms of these hood latches are to be seen on the more popular and cheaper makes of cars and serve their purposes, perhaps, in full value. However, the more expensive and durable makes of automobiles demand a more convenient, more secure type of hood latch, and one which will have a pleasing appearance to the eye. Well appointed and distingué features on automobiles, lend color and style to them.

It is one of the primary objects of my invention to provide a strong, positively operating latch which may be made in various styles and designs with but relatively small cost of manufacture. Another object is to devise a latch that will positively engage the hood and will prevent the hood from pulling or being jarred loose and from rattling.

A further object is to provide means to guide the latch into locking position with the hood and means to securely position the latch against displacement when unlocked.

Further objects will become apparent from the description and claims and from the drawing in which:

Fig. 1 is a side elevation showing one form of my latch in section in locked position, and in dotted lines in unlocked position,

Fig. 2 is a view looking at the latch of Figure 1 from the right,

Fig. 3 is a top plan view of the form of latch guide shown in Figure 1,

Fig. 4 is one form of hood projection latch cooperating means,

Fig. 5 is a side sectional view of a modified form of latch,

Fig. 6 is a sectional view of Figure 5 taken along the line 6—6 thereof,

Fig. 7 is a side elevational view of a still further modification, and,

Fig. 8 is a top plan view of the latch of Figure 7.

Referring to Figures 1 to 4, inclusive, I have shown a cylindrical barreled latch 2 having hand or finger holds 4 and 6, although any suitable number may be supplied, a projection or tongue 8 and a fulcrum projection 10, all of which may be formed integrally or in any suitable manner or from any desired material. Within the barrel 2, a spring 12 is engaged about a rod 14, passing longitudinally within the barrel and abuts between the washer 16 and the inwardly flanged end 18 of the barrel to urge the barrel longitudinally of the rod 14 and into engagement with the hood or with a latch guide to be hereinafter described. The rod 14 is secured in any suitable manner such as is shown at 20, in Figures 1 and 2, to any rigid portion of the car or car frame. In these figures the rod 14 is shown as engaging a bridge portion 20 formed in the latch guide 22. This guide 22, which may be of substantially U-shaped cross section, is provided with offset portions 24, 26 through which bolts, screws, rivets, or other fastening means may be projected to secure the guide to the frame or other portion of the machine, one or more depressions 28 to receive the fulcrum projection 10 when the latch is disengaged from the hood and a rear wall 30 which slopes upwardly and outwardly for a purpose to be hereinafter described. To the hood or engine cover 32, a latch engaging member or bracket 34 is adjustably or otherwise secured by means of bolts, screws, rivets, and the like, 36, and this latch engaging member may be provided with a depressed portion 38 to receive the latch finger 8, as will be readily understood. Slots 40 may be provided in the member 34, or in the hood, if desired, for the purpose of adjusting the member 34 with respect to the latch to compensate for manufacturing errors.

From the foregoing, it will be seen that the latch may be lifted upwardly and outwardly against the action of the spring 12 to disengage the projection 8 from the latch engaging member 34, and to engage the fulcrum member 10 over and behind one of the serrations or depressions 28 of the latch

guide. This will positively secure the latch out of the way and out of engagement with the hood, so that the hood may be raised or manipulated as desired. When the hood is replaced or dropped down to within a reasonable distance from the frame of the car, the projection 10 of the latch is disengaged from behind the serrations 28 of the guide, and the fulcrum projection 10 riding down the inclined face 30 of the guide under the action of the spring 12, forces the latch inwardly toward the hood, where the projecting finger 8 will engage with the latch engaging means 34 on the hood to carry the hood down and securely lock it against displacement. If the hand holds 4 and 6, interfere with any structure such as the fender of the machine when the latch is lifted out of engagement with the hood in one plane, it may be necessary or desirable to turn the latch 90° in either direction to engage the projection 10 with one of the side depressions 28, and when the latch is secured against its cooperating means on the hood, the combined action of the spring and inclined surface serve to press the latch finger 8 firmly into engagement with the member 34 to prevent the hood from loosening or rattling.

In the views of Figures 5 and 6, a cylindrical or other form of barrel 50 is arranged to be soldered, riveted, or fastened in any suitable manner to the automobile frame 52, and a collar 54 may be disposed thereabout to aid in rigidly connecting the same. Interiorly of the barrel is a spring pressed plunger 56 having at its outer end a finger grip 58 and its inner end bifurcated as at 60 to pivotally receive at 61 a tongue or other latch member 62 formed for engagement with the hood latch cooperating member 34. The spring 64 abuts between the inturned upper ends of the barrel 50 and a cap guide and washer 66 adapted to ride up and down within the barrel and to engage with the surfaces 68 of the tongue members 62 to force said tongue member through a slot 70 formed in the side of the barrel and into engagement with the member 34.

The tongue 62 is of substantially the same width as the interior of the barrel 50 so that when it is desired to release the latch from the hood, a pull on the handle 50 will cause a shoulder 72 on the tongue to engage with the end of the slot 70 and turn said tongue about its pivot 61 thus throwing the right hand shoulder 68 against the cap guide 66 to initially slightly compress the spring, whereupon further movement of the rod 56 upwardly will draw the tongue up within the barrel further compressing the spring until a notch 74 in the rod 56 engages with the inturned upper end of the barrel. This will lock the latch in released position. As an alternative, I have provided a projection 76 on the interior of the barrel for cooperative engagement with the shoulder 78 on the tongue when said tongue is rotated 90° within the barrel handle 58.

In the views of Figures 7 and 8, the latch comprises two link members 80 and 82, pivoted together at 84, the link 80 being provided with a projection or finger 86 for cooperative limiting engagement with lugs 88 and 90 oppositely disposed on the link 82. The link 80 is bifurcated to receive the end of the link 82 to which it is pivoted and may be provided with an arcuate face 92 for cooperative engagement with a suitable member 35 on the hood. The link 82 is formed in two portions to straddle the eye of a rod 94 secured to or forming part of spring 96, in turn secured at 97 to a bracket 98 which is provided with an upright portion 100 bifurcated at 102. The link 82 is pivoted to the bracket portion 100 at 104 and may be provided with a finger grip 106.

When it is desired to unfasten the latch, a finger is inserted in the grip 106 and the latch pulled upwardly and outwardly against the action of spring 96. When the links are outward to a point where the pivot 84 is beyond the line of pivots 97 and 104, the spring 96 will draw the pivot 84 downwardly and secure the latch in its unlatched position.

While I have shown and described but three modes in which my invention may be utilized, it will be obvious that it is susceptible of numerous modifications and for that reason I desire to be limited only by the spirit and scope of the claims appended.

I claim:

1. In combination, a closure member having latch-engaging means, latch supporting means adjacent said closure and independent thereof and a latch resiliently mounted between said supporting means and said closure, said latch being shaped to force said closure downwardly and inwardly.

2. In combination, a closure member having latch engaging means, a latch, a fixed latch support, means connected with said latch to normally urge said latch toward its support and means cooperative with said last mentioned means to urge said latch into engagement with said engaging means, said latch being provided with a cam member adapted by its shape and by its angular relation with said closure to direct and maintain pressure both downwardly and inwardly against the closure, in response to downward movement of the latch.

3. In combination, a closure member having latch engaging means, a spring latch

for engagement therewith and means independent of said closure to guide said latch into said engagement, said latch being provided with a cam member adapted by its shape and by its angular relation with said closure to direct and maintain pressure both downwardly and inwardly against the closure, in response to downward movement of the latch.

4. In combination, a closure member having latch engaging means, a spring pressed latch, and means cooperative with a portion of said latch and independent of said closure to force said latch into engagement with said engagement means, said latch being provided with a cam member adapted by its shape and by its angular relation with said closure to direct and maintain pressure both downwardly and inwardly against the closure, in response to downward movement of the latch.

5. In combination, a closure member having latch engaging means, a spring pressed latch secured in cooperative relation to said engaging means and a latch guide independent of said closure adapted to positively secure engagement of said latch with said engaging means over a relatively wide range of closure position.

6. A latch for a closure member comprising a fixed member, means to secure said latch relatively to said fixed member and means to resiliently urge said latch into engagement with said closure, said latch being provided with a cam member adapted by its shape and by its angular relation with said closure to direct and maintain pressure both downwardly and inwardly against the closure, in response to downward movement of the latch.

7. A latch for a closure member having latch engaging means comprising, a fixed member, means to resiliently secure said latch relatively to said fixed member and means adapted to urge said latch member into engagement with said latch engaging means, said latch being provided with a cam member adapted by its shape and by its angular relation with said closure to direct and maintain pressure both downwardly and inwardly against the closure, in response to downward movement of the latch.

8. In an automobile hood latch mechanism, means constructed and arranged to force the latch toward the hood and means to guide said latch into engagement with said hood.

9. In an automobile hood latch mechanism, means on said hood to be engaged by a latch, a latch and means to guide said latch into engagement with the first said means over a wide range of hood position, said latch being provided with a cam member adapted by its shape and by its angular relation with said closure to direct and maintain pressure both downwardly and inwardly against the closure, in response to downward movement of the latch.

10. In a latch for an automobile engine hood having latch cooperative means, a yieldingly secured latch member and means independent of said hood to normally urge said latch into engagement with said cooperative means and to hold said latch out of engagement with said cooperative means in an unlatched position.

11. In a latch for an automobile engine hood having latch cooperative means, a latch member yieldingly secured adjacent thereto and independently thereof and means independent of said hood to normally urge said latch into engagement with said cooperative means and to hold said latch out of engagement with said cooperative means in an unlatched position.

12. In an automobile hood latch mechanism, means independent of said hood to support a latch in unlocked and disengaged relation to said hood, comprising a fixed walled support extending upwardly about said latch.

13. In combination, a closure member having a dependent flap, a substantially rigid structure against part of which said flap abuts, a latch, a support for said latch rigidly connected to said structure, and cam acting means on said latch cooperative with said flap to move said flap inwardly and downwardly into contact with said structure.

14. A latch for closure members comprising, a rigid member, a bolt cooperatively connected with said member means normally urging said bolt toward said member, and a cam surface connected to said bolt for contact with a closure member and so shaped as to force the same downwardly and inwardly.

15. A latch for closure members comprising, a rigid member, a bolt cooperatively arranged with and movable toward and from said member, means to urge said bolt toward said member, and cam means cooperatively connected to said bolt for engagement with the closure member and so shaped as to force the same downwardly and inwardly.

16. In a latch mechanism for a closure, a bolt independent of said closure, a spring normally urging said bolt into cooperative engagement with said closure, and a cam surface on said bolt adapted to slidingly engage a portion of said closure and so shaped as to force the same downwardly and inwardly.

17. In an automobile hood latch, a bolt, and a cam surface cooperatively movable by said bolt into sliding engagement with the hood.

18. In an automobile hood latch, the combination with a closure of a latch adapted to exert downward and inward pressure

against the lower edge thereof, means for yieldingly moving the latch downwardly in relation to the closure, opposed cam members on latch and closure, and additional means for preventing lateral movement of the latch from the closure during the exertion of such pressure.

19. In an automobile hood latch, the combination with a closure of a latch adapted to exert downward and inward pressure against the lower edge of said closure, said latch being provided with a cam member adapted by its shape and by its angular relation with said closure to direct and maintain pressure both downwardly and inwardly against the closure, in response to downward movement of the latch, and supporting means, independent of said closure, adapted to limit lateral movement of said latch away from said closure.

20. In an automobile hood latch, the combination with a closure of a latch adapted to exert downward and inward pressure against the lower edge of said closure and supporting means, independent of said closure, adapted to limit lateral movement of said latch away from said closure, comprising an upwardly and outwardly inclined stop wall extending about said latch.

21. In combination with an automobile hood, a latch member mounted adjacent said hood, means for constraining said latch member to a path opposite the outer face of the side of the hood, and for preventing said latch from moving laterally away from the face of said hood during its engagement therewith, and opposed members on latch and hood in sliding contact, adapted, in response to downward movement of the latch, to direct and maintain pressure both downwardly and inwardly against said hood, and yielding means for moving the latch downwardly along its path.

22. In combination with an automobile hood, a latch member mounted adjacent said hood, means for constraining said latch member to a path opposite the outer face of the side of the hood, and for preventing said latch from moving laterally away from the face of said hood during its engagement therewith, and opposed members on latch and hood in sliding contact, adapted, in response to downward movement of the latch, to direct and maintain pressure both downwardly and inwardly against said hood, a guide member upon which said latch is mounted, said member being mounted upon the automobile, and yielding means for moving the latch downwardly along said member.

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