

Oct. 27, 1931.

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1,829,447

HOOD LATCH

Filed Sept. 8, 1930

2 Sheets-Sheet 1

Fig. 1.

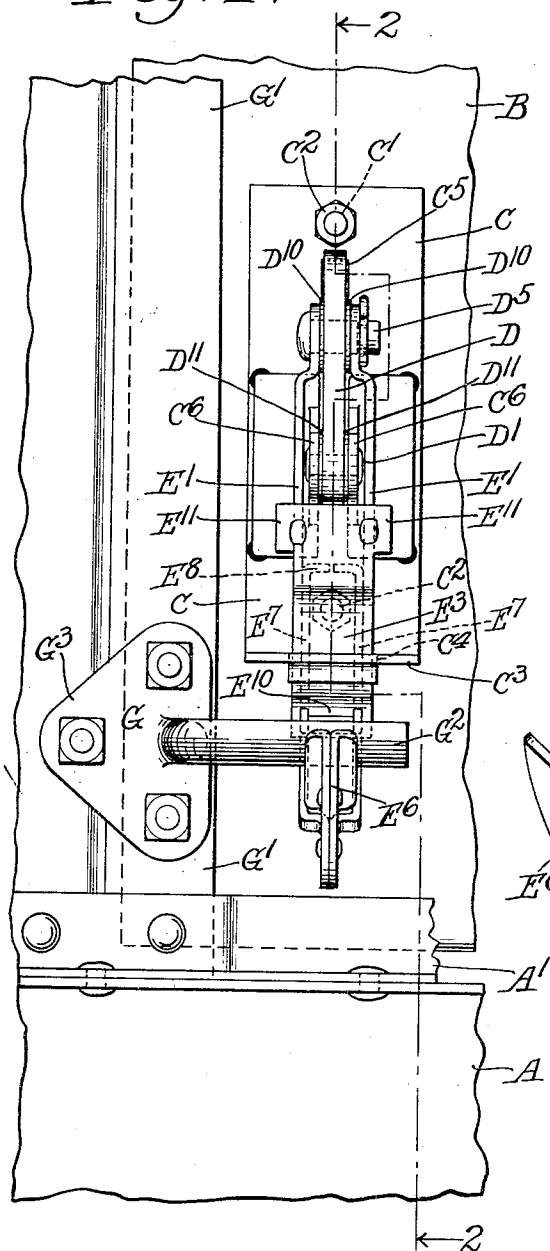
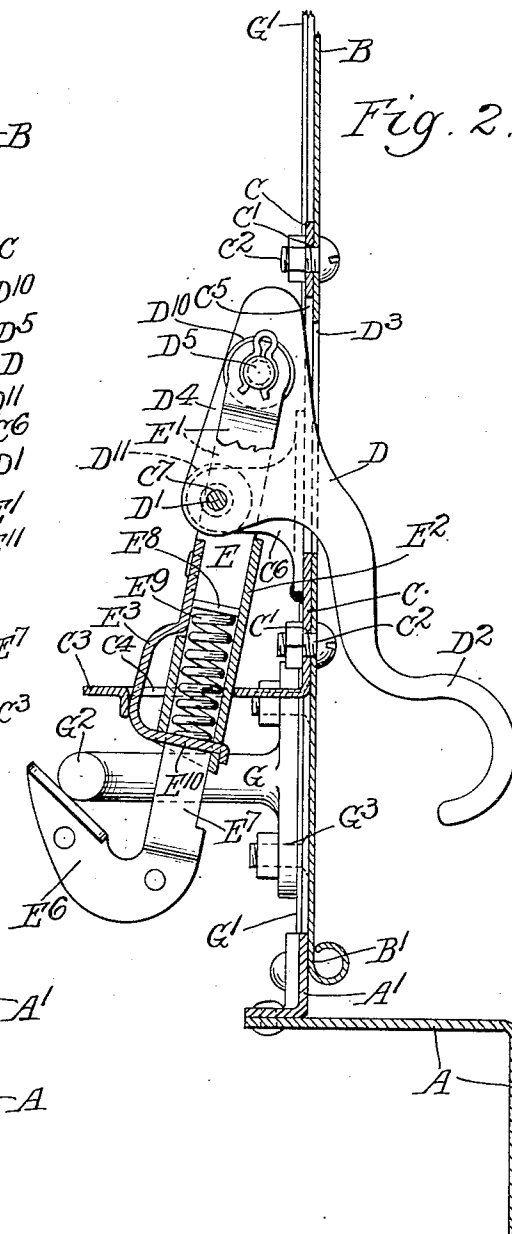


Fig. 2.



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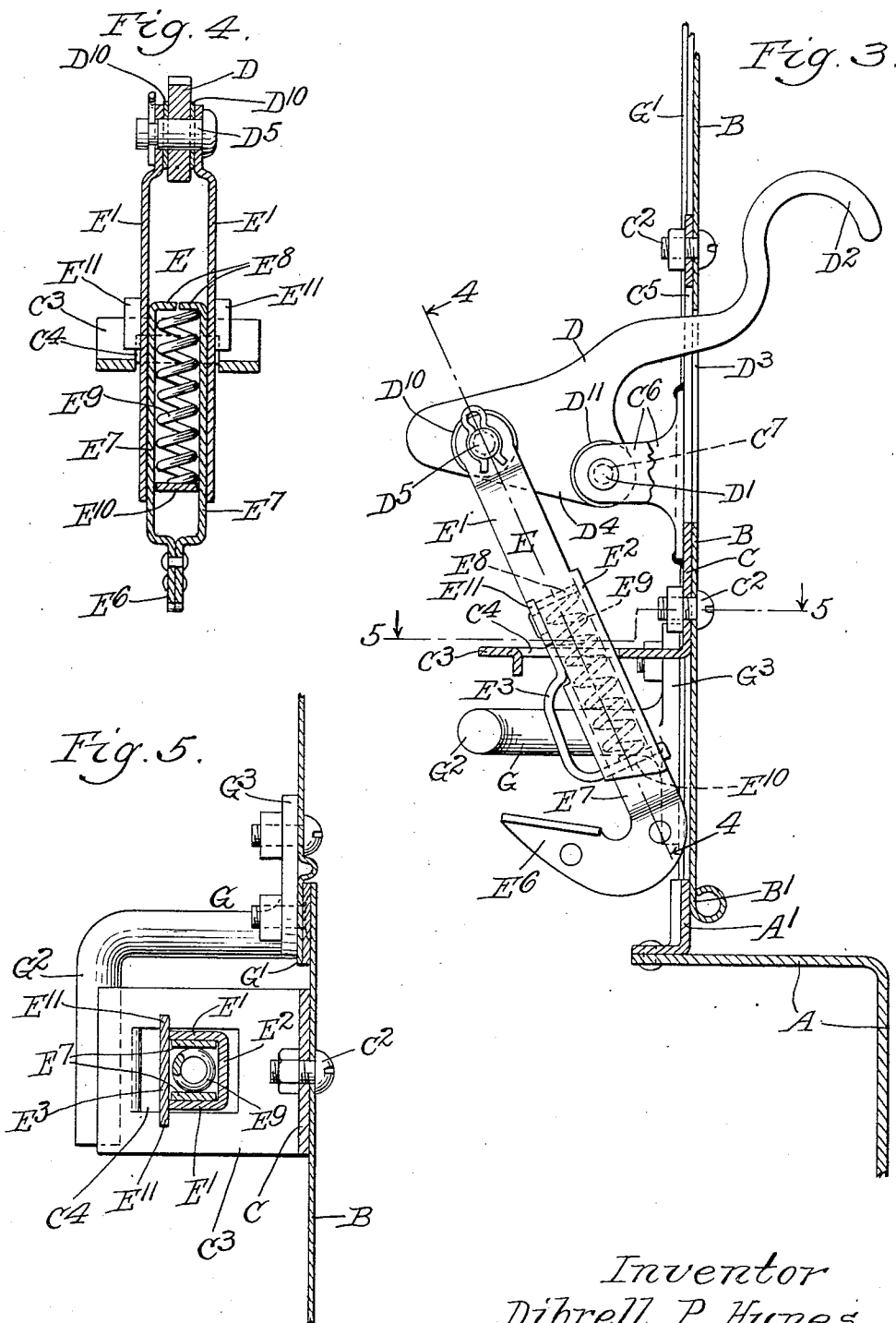
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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HOOD LATCH

Application filed September 8, 1930. Serial No. 480,356.

My invention relates to a latch or closing means. One application thereof is as a hood latch for an automobile hood closure. One object is the provision of such a latch or closure which shall be efficient and positive in its action and which shall be easily actuated. Another object is the provision of a latch or locking device which shall yieldingly draw a lower edge of a hood closure downwardly and inwardly toward a limiting abutment. Another object is the provision of a closure which includes an interior locking device and an exterior control member adapted also to lift the closure to which the locking device is applied. Other objects will appear from time to time in the course of the specification and claims.

I illustrate my invention more or less diagrammatically in the accompanying drawings, wherein

Figure 1 is an inside view illustrating the device in locking position;

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is a similar section showing the parts in unlocked position;

Figure 4 is a section on the line 4—4 of Figure 3; and

Figure 5 is a section on the line 5—5 of Figure 3.

Like parts are indicated by like symbols throughout the specification and drawings.

Referring to the drawings, A generally indicates a frame of an automobile which is provided with an upwardly extending abutment A¹. B indicates a side of an automobile hood closure, the lower edge B¹ of which is adapted to be opposed exteriorly to the abutment A¹. Mounted on the inner face of the hood closure B is the lock assembly plate or support generally indicated as C. It may have the apertures C¹ whereby it may be riveted, or bolted as at C², to the inner face of the hood. It includes also, at its lower end, an inwardly projecting flange C³ provided with an aperture C⁴. Its upper portion is apertured, as at C⁵, and adjacent said aperture are the flanges C⁶ apertured in alignment, as at C⁷.

Rotatably mounted upon the flanges C⁶ is

the lever generally indicated as D. It may be mounted upon a pivot pin D¹ passing through the apertures C⁷. It includes an exteriorly extending lever arm or handle portion D² which passes outwardly through the aperture C⁵ and through a corresponding or aligning aperture D³ in the hood itself. D⁴ indicates an inner lever arm, the two arms forming in effect a bell crank lever. Pivoted to the outer end of the lever D⁴, as upon the pin or pins D⁵, is the latch assembly generally indicated as E. It may include the two side pieces E¹ connected at their edge, as at E². E³ indicates a guide member fixed, as herein shown, as in relation to the side pieces E¹. A hook E⁵ is slidably mounted within the side pieces E¹, which form a guide therefor. The hook member includes the hook portion proper E⁶ and a spring housing member formed of the side elements E⁷ which are connected at their upper ends as at E⁸. A spring E⁹ is compressed between the member E⁸ and the bottom E¹⁰ of the guide E³. It will be noted, as in Figure 2, that the hook or latch assembly so described passes through the aperture C⁴. The aperture is preferably of about the same width as the latch assembly but of somewhat greater length. When the device is in locking position the guide E³ engages one end of the aperture and the latch the other, but when the hook is in unlocked position the guide E³ lies at a level below that of the flange C³ and the latch assembly may move along the length of the aperture stopped in its downward movement by the lugs E¹¹ E¹¹.

G generally indicates a locking abutment positioned within the hood, and for example secured to the radiator flange or ledge or to the dash or cowl flange indicated as G¹, upwardly projecting above the member A. I have herein shown as a locking abutment a pin G² mounted upon any suitable base G³.

It will be realized that whereas I have described and shown a practical and operative device, that nevertheless many changes may be made in the size, shape, number and disposition of parts without departing from the spirit of my invention. I therefore wish

my description and drawings to be taken as in a broad sense illustrative or diagrammatic.

The use and operation of my invention are as follows:

5 In locking automobile hoods, I find it desirable to provide a hood latch which is positive in its action and which tends to draw a lower edge of the hood closure downwardly and inwardly. I find it also desirable to
10 associate with a concealed or inside hood latch an exterior handle or control member which serves to lift the hood after the latch has been released.

15 It will be seen from a consideration of Figures 2 and 3 that when the hook E^6 is in locking position, the handle D^2 is at the lower extremity of its rotation. The spring E^9 draws the hook E^6 upwardly against the bar or pin G^2 . The inclination of the axis
20 or line along which this thrust is directed and the inclination of the hook E^6 , tends to draw the lower edge of the hood inwardly against the abutment A^1 , as well as downwardly toward the frame A .

25 When the operator wishes to release the latch and to lift the hood, he merely rotates the lever D^2 into the position in which it is shown in Figure 3. He thereby moves the upper end of the assembly E outwardly
30 and moves its lower end inwardly.

When the lever D^2 is in the position in which it is shown in Figure 3, the hook E^6 is also out of vertical alignment with the member G^2 . The operator may then merely
35 continue his lifting movement, and the hood may easily be lifted.

In reference to Figures 2 and 3 and the aperture C^4 I prefer to employ frictional washers D^{10} D^{11} in association with the pivots D^5 and D^1 respectively. Taking the
40 parts in the position in which they are shown in Figure 3, a downward movement of the handle D^2 not only lifts the inner arm D^4 of the lever but also thrusts the latch assembly forwardly toward the inner end of the aperture C^4 . This positively thrusts the
45 hook E^6 beneath the locking abutment G^2 , as shown in Figure 2, and further downward movement of the handle D^2 draws the hook upwardly into its locking engagement with
50 the hook. On the other hand, in unlatching the device, when the handle D^2 is raised the frictional washers D^{10} will cause the latch assembly to move toward the opposite end
55 of the apertures C^4 , before permitting relative rotation of the latch and lever. Thereby the latch member is positioned substantially out of vertical alignment with the abutment or keeper G^2 and a direct upward movement
60 of the hood may be made without interference between latch and abutment. The frictional members D^{11} serve to reduce the probability of unintended movement of the handle D^2 . The friction is sufficient to prevent
65 unintended movement but insufficient to

hamper intended manual movement of the handle.

Referring to Figure 2, when the handle D^2 is moved as far inwardly as it can go, a line drawn from the bearing point between
70 the hook E^6 and the keeper G^2 to the center of the bearing or pivot D^5 is past the center of the main pivot or bearing D^1 , thus making the hook hold itself in locked position.

Referring to the action of the lower por-
75 tion of the latch assembly, the length of the aperture C^4 provides extra space for the latch assembly. When the hook E^6 is moved from the position in which it is shown in Figure 3 to the position in which it is shown in
80 Figure 2, the hook E^6 is moved under the keeper G^2 before there is any substantial upward movement of the latch assembly. The frictional washers D^{10} have this effect, since
85 a downward movement of the handle D^2 will throw the hook E^6 forwardly to the left, referring to the parts in the position in which they are shown in Figure 3. A continued
90 rotation of the handle D^2 of course draws the hook upwardly against the keeper G^2 . In unlocking the latch, the load on the spring E^9 is released and the latch is lowered from
95 the contact with the keeper D^2 before any substantial lateral movement of the hook E^6 to the rear of the aperture C^4 takes place. In other words the aperture C^4 is propor-
100 tioned to permit lateral movement of the hook E^6 toward the keeper G^2 . The member E^3 serves to guide the upward movement of the latch member as a whole through the
105 aperture C^4 .

I claim:

1. In a hood fastener or the like the combination with a hinged door member to be
110 latched, of a keeper mounted within the hood, a latch carried by the hood door and mounted therewithin for longitudinal and lateral
115 movement in relation to the keeper, guiding means positioned interiorly of the door adapted to guide the movement of the latch, said
120 guiding means being provided with an aperture of a length substantially greater than the thickness of the latch extending transversely of the latch, the latch being freely
125 movable laterally within the limits of said aperture, and a unitary door handle and latch operating member positioned upon said door and extending on each side thereof, and a
130 frictional connection between said member and the latch, said frictional connection functioning to cooperatively move the latch by the handle within the limits defined by said
135 aperture of the guide.

2. In a hood fastener or the like the combination with a hinged door member to be
140 latched, of a keeper mounted within the hood, a latch carried by the hood door and mounted therewithin for longitudinal and lateral movement in relation to the keeper, 130

guiding means positioned interiorly of the door adapted to guide the movement of the latch, said guiding means being provided with an aperture of a length substantially greater than the thickness of the latch extending transversely of the latch, the latch being freely movable laterally within the limits of said aperture, and a unitary door handle and latch operating member positioned upon said door and extending on each side thereof, said latch being pivoted to said member, and a friction creating means interposed between said member and latch.

3. In a hood fastener, the combination with a hinged door member to be latched, of a keeper within the hood, a latch carried by the hood door and mounted within said door for longitudinal and lateral swinging movement in relation to the keeper, actuating means for the latch, including a unitary door handle and latch lever positioned upon said door and extending on each side thereof and pivoted for rotation in relation to said door about an axis generally horizontal, and positioned inwardly of the door and substantially above the keeper, said latch being pivoted to said door handle, within the door, a guide for said latch mounted on said door and positioned above said keeper and below the axis of the door handle, said guide being apertured, the latch passing through said aperture and being adapted to swing freely toward and away from the inner face of the door within the limits of said aperture, and additional guiding means, movable with the latch, adapted during movement of said latch to control the position of said latch in relation to the first-mentioned guiding means.

4. In a hood fastener, the combination with a hinged door member to be latched, of a keeper within the hood, a latch carried by the hood door and mounted within said door for longitudinal and lateral swinging movement in relation to the keeper, actuating means for the latch, including a unitary door handle and latch lever positioned upon said door and extending on each side thereof and pivoted for rotation in relation to said door about an axis generally horizontal, and positioned inwardly of the door and substantially above the keeper, said latch being pivoted to said door handle, within the door, a guide for said latch mounted on said door and positioned above said keeper and below the axis of the door handle, said guide being apertured, the latch passing through said aperture and being adapted to swing freely toward and away from the inner face of the door within the limits of said aperture, and additional guiding means movable with the latch, adapted during movement of said latch to control the position of said latch in relation to the first-mentioned guiding means, said additional means being adapted to effect a camming function in cooperation

with an opposed portion of the first-mentioned guide.

Signed at Chicago, county of Cook and State of Illinois, this 6th day of August, 1930.

DIBRELL P. HYNES.

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