Dec. 23, 1952 D. P. HYNES 2,622,907

AUTOMOBILE HOOD LATCH AND REMOTE CONTROL

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Fig. 1

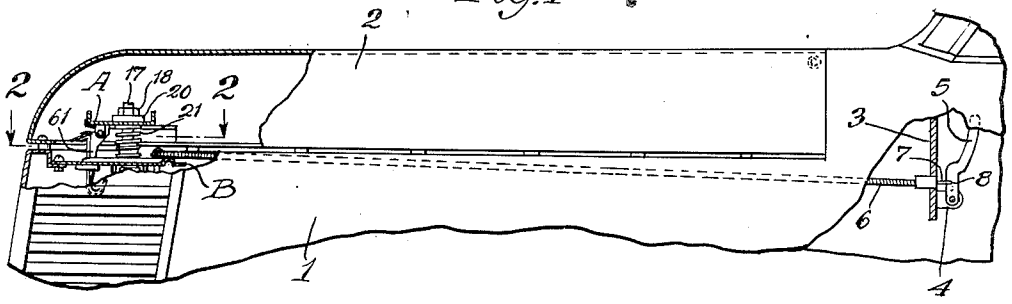
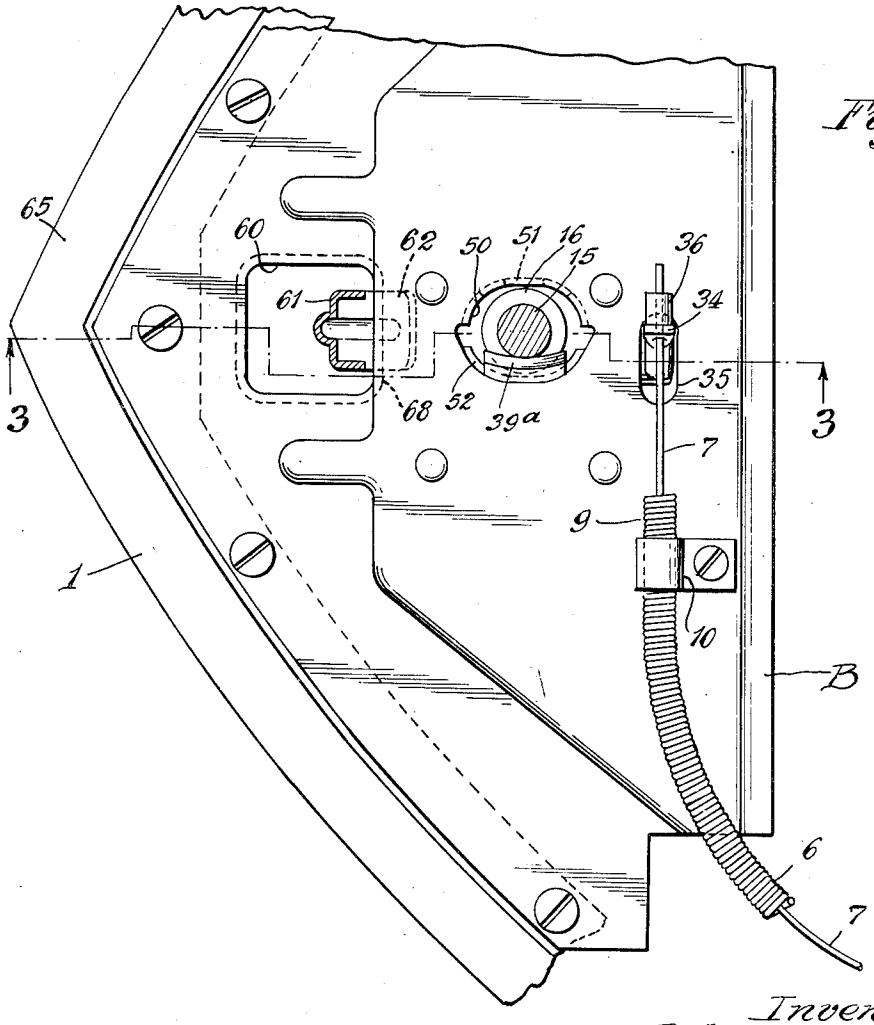


Fig. 2



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Fig. 3

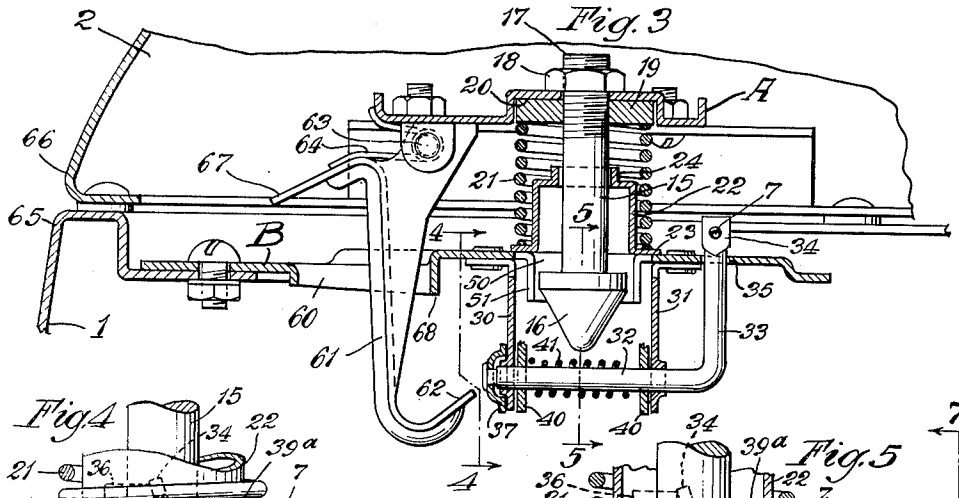


Fig. 4

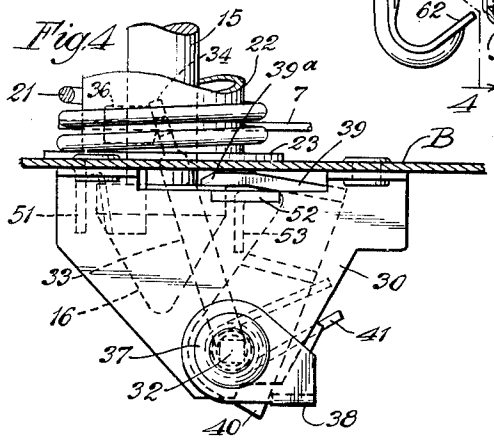


Fig. 5

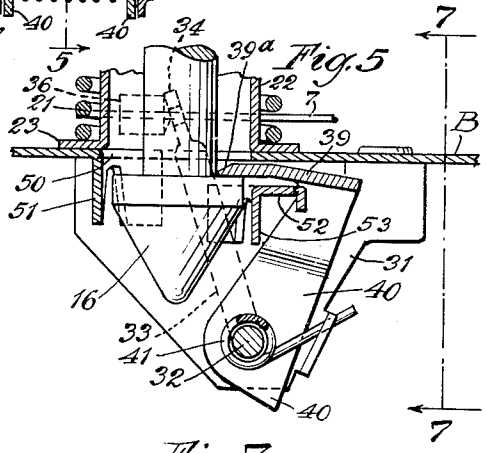


Fig. 6

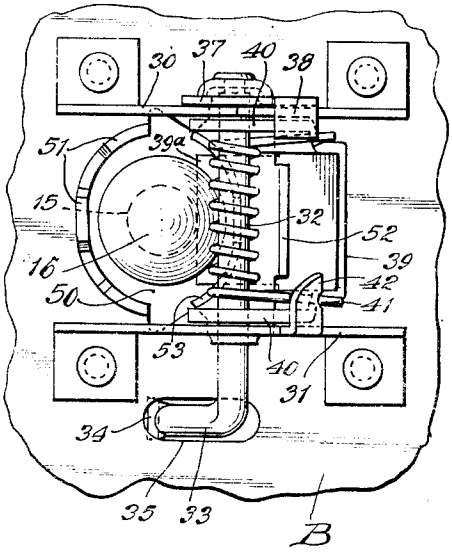
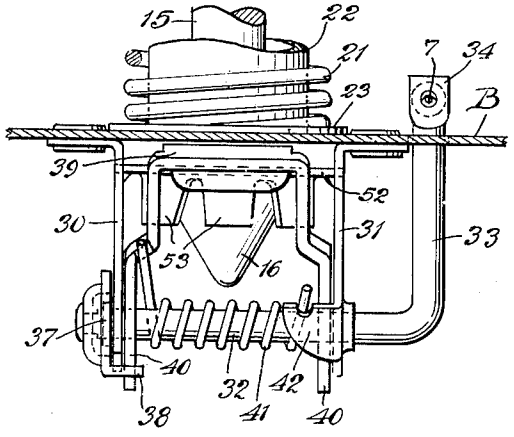


Fig. 7



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Fig 8

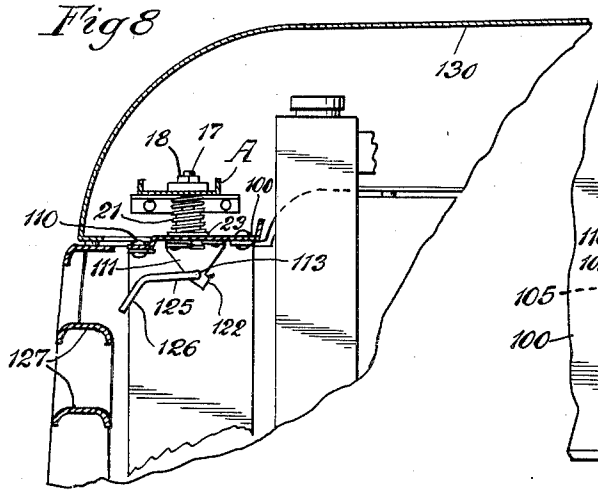


Fig. 10

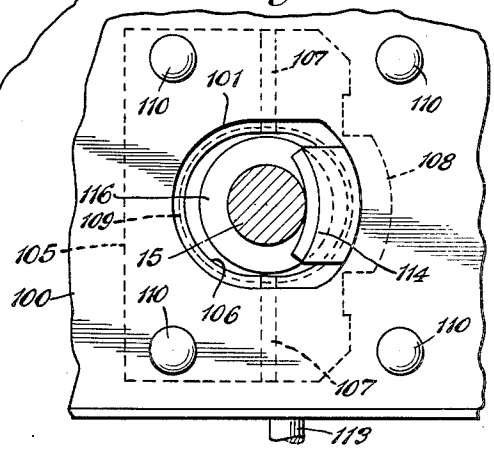


Fig. 9

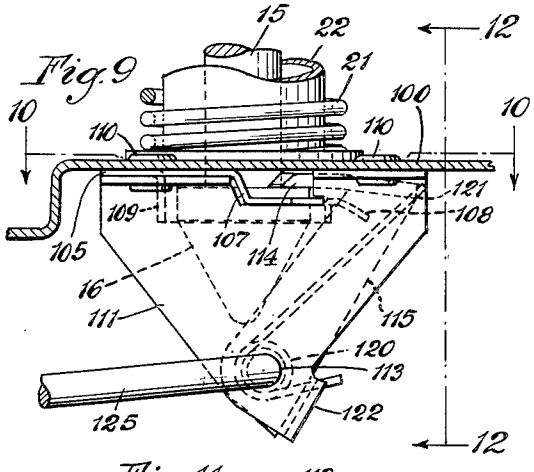


Fig. 13

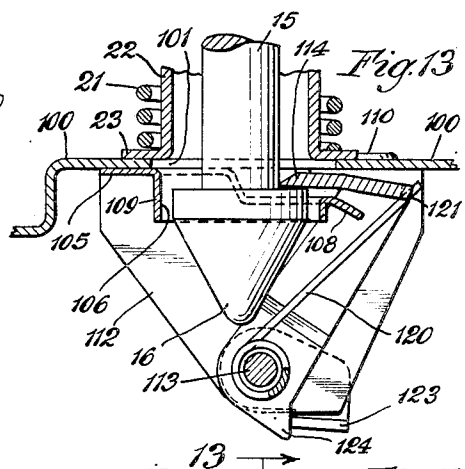


Fig. 11

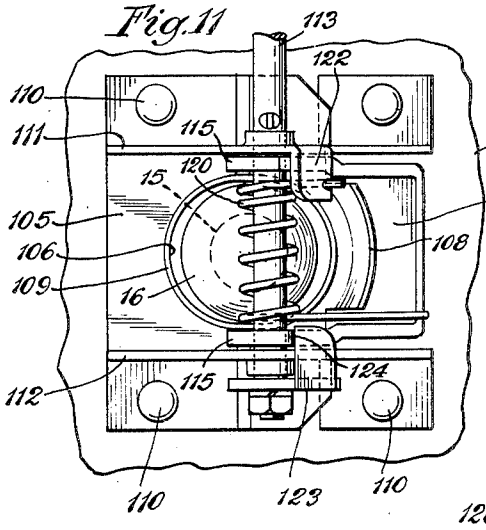
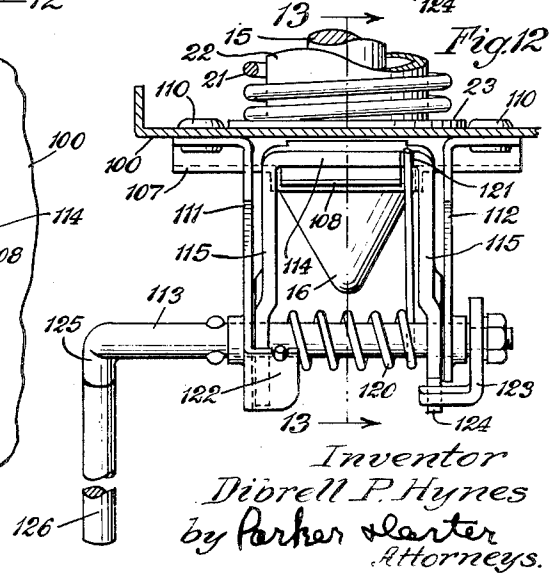


Fig. 12



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Patented Dec. 23, 1952

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UNITED STATES PATENT OFFICE

2,622,907

AUTOMOBILE HOOD LATCH AND REMOTE CONTROL

Dibrell P. Hynes, Evanston, Ill., assignor to Chicago Forging and Manufacturing Company, Chicago, Ill., a corporation of Illinois

Application April 23, 1949, Serial No. 89,342

3 Claims. (Cl. 292—221)

1

My invention relates to an improvement in hood latches, and has for one purpose to provide an improved hood latch structure for automobiles.

Another purpose is to provide a hood latch structure which may be applied to the alligator type hood at various angles, and in various relationships to the hood structure.

Another purpose is to provide a hood latch which may be mounted to operate along a direction transverse to the length of the car, whereas the actuating structure handled by the user may extend along the axis of the car.

Other purposes 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 a vertical longitudinal section;

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

Figure 3 is a section on the line 3—3 of Figure 2;

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

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

Figure 6 is a bottom plan view of the structure of Figure 4;

Figure 7 is a section on the line 7—7 of Figure 5.

Figure 8 is a partial vertical section illustrating a variant form of the device;

Figure 9 is a partial vertical section on an enlarged scale;

Figure 10 is a section on the line 10—10 of Figure 9;

Figure 11 is a bottom plan view;

Figure 12 is a section on the line 12—12 of Figure 9; and

Figure 13 is a section on the line 13—13 of Figure 12.

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

Referring to the drawings, 1 generally indicates the hood of an automobile and 2 a suitable hood closure therefor, which is pivoted or movably supported at its rear end by a structure, the details of which do not form part of the present invention and are not herein shown. 3 is any suitable dash structure which may form part of or be positioned to the rear of the instrument panel. It is shown as carrying a bracket or pivot 4 to which is pivoted a lever 5 located conveniently for the hand of a user sitting to the rear of the instrument panel.

Extending forwardly from the instrument panel or from the dash 3 is any suitable thrust transmitting structure, such as the flexible Bowden wire 6, the inner wire 7 of which may be secured to the lever 5, as at 8. The opposite or forward end of the wire 7 extends from the forward end of the Bowden wire or outer coil structure 6, which is shown as bent to extend transversely of the long axis of the car, as at 9. The end may be supported by any suitable bracket or clip or securing member 10, leaving the wire 7 free to move in its flexible outer housing in response to movement of the control lever 5.

2

The hood latch structure includes an upper component mounted on any suitable plate A on the closure 2, and a lower component mounted on any suitable plate B on the hood itself. Carried by the plate A is a keeper plunger 15 having a conic enlarged head 16 and any suitable securing means, such as the screw-threaded upper end 17 and the lock nut 18, the main nut 19 being in a recess 20 in the plate A.

Surrounding the stem or plunger 15 is the compressed coil spring 21, the upper end of which may butt against the nut 19, and the lower end of which may be compressed by a follower or guide 22 having a bottom flange 23 and an upper sleeve 24 readily slidable along the plunger 15. It will be understood that when the parts are in the free position the spring 21 is effective to thrust the follower 22 downwardly about the head 16 until the sleeve portion 24 engages the upper surface of the head 16. It will be understood that in the use of the latch, when the keeper plunger 15, 16 is released, the spring 21 will tend to raise the hood closure 2 upwardly a slight distance.

Mounted on the lower plate B is a keeper structure which will now be described. I illustrate, for example, a pair of flanges or brackets 30, 31 which carry journaled in them a pin 32 having an upwardly extending lever portion 33, the upper end 34 of which extends through a slot 35 in the plate B and is secured in any suitable way to the free end of the wire 7. I find it advantageous to employ a terminal keeper 36 on the wire, which limits the relative movement of the wire and the lever in one direction, while permitting free relative movement in the other.

Held against movement on the pin 32 is an actuating piece 37 having an offset portion 38 which engages a leg 40 of the latch 39. It will be understood that the keeper is generally U-shaped, as shown for example in Figure 7. A spring 31 is coiled about the pin 32 and abuts at one end against an abutment 42 which may form part of the bracket 31. At its opposite end it engages one arm 40 of the latch 39. Thus it tends nor-

mally to rotate the latch 39 into the full-line or locking position of Figure 5, with the forward edge 39a of the latch extending between the lower surface of the plate B and the upper surface of the head 16.

It will be noted that the lower plate B is apertured as at 50, the aperture being bounded in part by downwardly bent prongs or ears 51. These prongs extend generally half way around the aperture 50, as will be clear from Figure 6. Surrounding the other half is an associated similarly shaped piece 52 with its downwardly extending prongs or ears 53. The piece 52 is shown as secured at its ends to the bracket pieces 30 and 31, as is clear from Figure 7. The piece 52, as will be clear from Figure 5, serves as a stop for limiting the forward movement of the latch 39 into latching or securing position.

The aperture 50 is somewhat broader in one direction than in the other, as shown in Figure 6. This is a matter of convenience, and it will be understood that what is important is that the diameter of the aperture 50 is such as to permit the entry downwardly therein of the head 16 throughout a reasonable range of adjustment of the parts.

The lower plate B has an additional aperture 60 through which passes any suitable safety latch lever 61, with its latching end 62. It is pivoted to the upper plate A, as at 63, and is provided with a spring 64 which normally urges it into the effective position in which it is shown in Figure 3. It will be understood that when the main latch 39 is released, the spring 21 is effective slightly to elevate the hood closure 2. This opens a space between the opposed front portions 65 of the hood and 66 of the closure, so that the user can insert his fingers and raise the actuating lever portion 67, thereby, at the same time, moving the hook portion 62 out of alignment with the flange 63, and permitting the manual lifting of the hood, about its pivot or rear support, by the user.

Referring to the form of Figure 8 and following, I illustrate a structure which is operable through the front of an automobile, for example, through the grille. 100 indicates a plate suitably mounted on the hood or forward structure of an automobile. It is apertured as at 101, the aperture being preferably somewhat oval or elongated. 15 illustrates the stem or plunger, with its head 16, the plunger supporting a follower guide 22 having a bottom flange 23, all as shown in connection with the form of Figures 1 to 7.

Secured to the bottom of the plate 100 is a lower plate or member 105, formed to provide an oval aperture 106 which corresponds substantially to the aperture 101 in the plate 100. It is bent downwardly, as at 107, and terminates in a lip 108. The aperture 106 is surrounded by a down-turned flange 109. The plate 105 is held, for example, by two of the rivets 110, which are also effective to hold the legs or ears 111, 112, in which is rotatably mounted the actuating stem or rod 113.

Rotatable with and on the rod 113 is the yoke or stirrup 114, having side members 115. It will be noted that the stirrup 114 constitutes a latch which is movable through the space between the lip 108 and the plate 100, with its forward edge extending into alignment with the apertures 101 and 106 in position to engage the head 16 of the plunger 15. The stirrup or yoke 114 is normally spring-thrust toward locking position, for example, by the coil spring 120, one end of which engages the latch, as at 121, and the other end of which engages the lug 122 on the member 111.

Movable with the rod 113, and held against movement relative to it, is the actuating member 123, which engages a lug 124 on one of the stirrup or latch side members 114. 125 is an actuating handle for the rod 113, which has a forward end 126, which may be reached through the grille 127 at the forward end of an automobile. It will be understood that the plate 100 is supported in any suitable manner on the automobile chassis. 130 is the hood closure, which is pivoted at the rear in any suitable way, and which supports the plunger 15.

It will be realized that, whereas I have described and illustrated a practical and operative device, 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, rather than as limiting me to my precise showing.

For example, the lever 5 may be dispensed with, or any suitable member may be used in its place. However, it makes the operation easier and provides a straight pull on the wire. It will be understood that the safety catch may be used or omitted with all forms of the latch shown herein. It will further be understood that the safety hook may be mounted on the lower plate instead of the upper plate without altering the mode of operation of the device.

The use and operation of the invention are as follows:

The structure herein described is simple and easy to operate, and is durable and efficient in use. Assume that the parts are in the closed position in which they are shown in Figure 1. The spring 41 is effective to urge the latch 39 into the locking position of Figure 5. The spring 21 is compressed in the position in which it is shown, for example, in Figure 3. The closure 2 is firmly held in the closed position and no access can be had to the release handle 67 of the lever 61. If the user then wishes to open the hood, or to permit it to be opened by a station attendant, he properly actuates the lever 5, the result being to move the wire 7 within its flexible sheath 6. The abutment 36 on the wire 7 is then effective to move the upper end of the lever 34, which rotates the pin 32 against the thrust of the spring 41, the latch 39 being moved from the position in which it is shown in Figures 4 and 5 sufficiently to permit its forward edge 39a to clear the opposed top surface of the spearhead abutment 16 of the stem 15. As soon as the edge 39a clears the spearhead abutment, spring 21 is released to exert a separating thrust against the lower surface of the upper plate A and the upper surface of the lower plate B. The closure 2 is then slightly elevated, but cannot be lifted a greater distance than would be permitted by the engagement of the lever hook 62 with the opposed flange 63 at the rear of the aperture 60 of the lower plate B.

It is additionally necessary for the user, or for the attendant, to insert his fingers into the gap between the portions 65 and 66 at the front of the hood, and then to rotate the lever 61 into the inoperative position by manual engagement of its handle portion 67. The parts can then be raised in such fashion as to elevate the closure 2. At the end of the elevating movement the spring 21 is expanded only as far as the engagement

of the spearhead 16 and the follower 22 will permit. And the spring 41 is effective to return the latch 39 to the position in which it is shown in Figures 4 and 5. When the user or attendant again closes the closure 2, the spearhead 16 rides over the latch 39 and the downward thrust on the closure 2 compresses the spring 21 to readiness for its next releasing movement when the operator again actuates the lever 5.

In the form of Figure 8 and following it will be understood that the spearhead abutment 16 of the stem 15 operates precisely as in the previously described forms. However, in place of the Bowden wire 6, 7, I prefer to provide a direct control from the front of the car, the stem or lever 126 being accessible through the grille 127. It will be noted that the supporting plate for the latch 114 has associated with it an additional plate 105 having a flange portion surrounding the spearhead 16 of the plunger 15 and having a clearance to permit and guide the entry of the latch.

I claim:

1. In a latch assembly for automobiles and the like, a suporting plate having a keeper receiving aperture adapted to receive a keeper penetrating the aperture in a path generally perpendicular to the plate, a support depending from said supporting plate and extending generally perpendicular thereto, a latch mounting pin journalled on said support about an axis lying in a plane generally parallel with the general plane of the plate and spaced therefrom, a latch element rotatably mounted on said pin and having an upper portion adapted to engage the keeper, a keeper guide surrounding said aperture having a depending keeper guiding portion on one side of the aperture and another keeper guiding portion on the other side of the aperture, said other keeper guiding portion being spaced from the supporting plate, the upper portion of the latch element adapted when moved to keeper engaging position to move through the space between said supporting plate and other keeper guiding portion, resilient means for normally urging said latch element to keeper engaging position, and means for rotating said latch element away from keeper engaging position.

2. The structure of claim 1, characterized by and including a latch element formed of an upstanding portion, and a generally horizontal blade portion movable beneath said supporting plate and above said other keeper guiding portion.

3. The structure of claim 1, characterized by and including a stirrup shaped latch having a generally horizontally extending keeper engaging blade, said keeper engaging blade being movable through the space between the plate and the other keeper guiding portion into keeper engaging position.

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