

Dec. 19, 1939.

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2,184,086

LATCHING MECHANISM

Filed Oct. 21, 1938

2 Sheets-Sheet 1

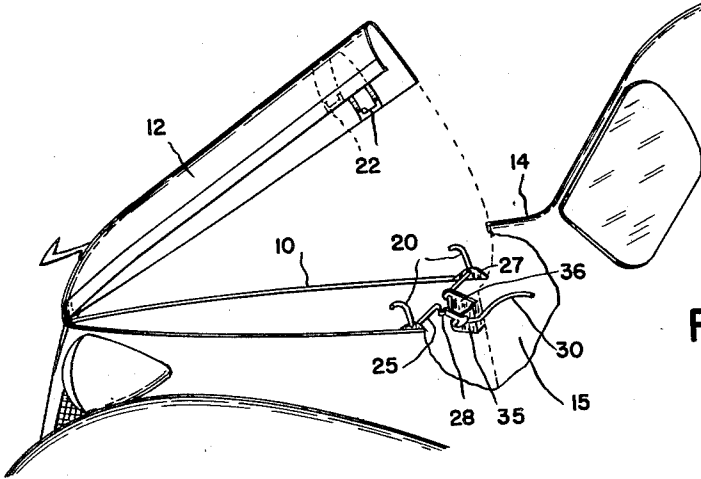


FIG. 1.

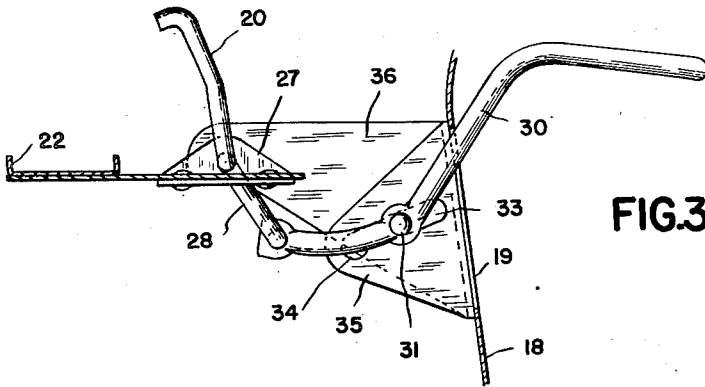


FIG. 3..

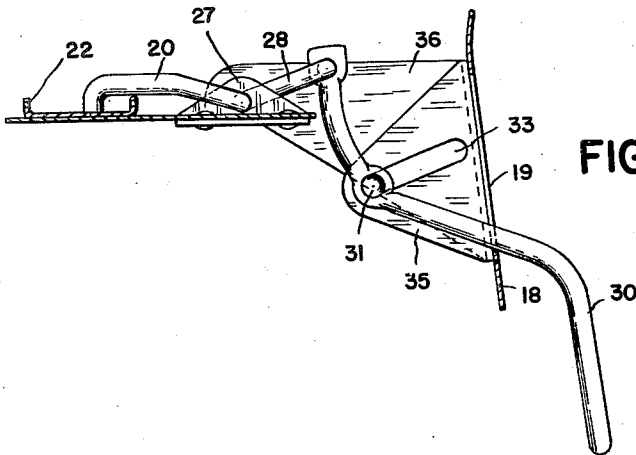


FIG. 5..

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2 Sheets-Sheet 2

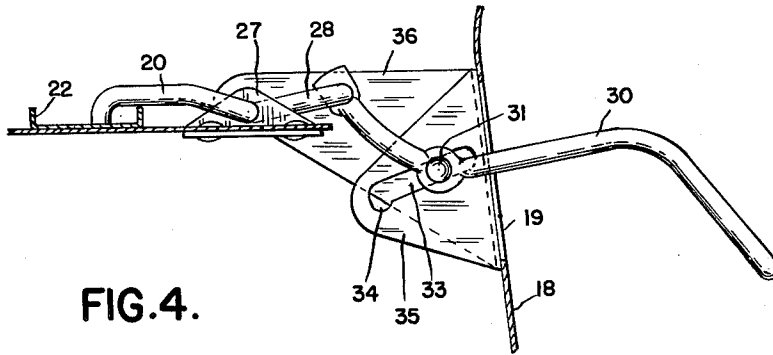


FIG. 4.

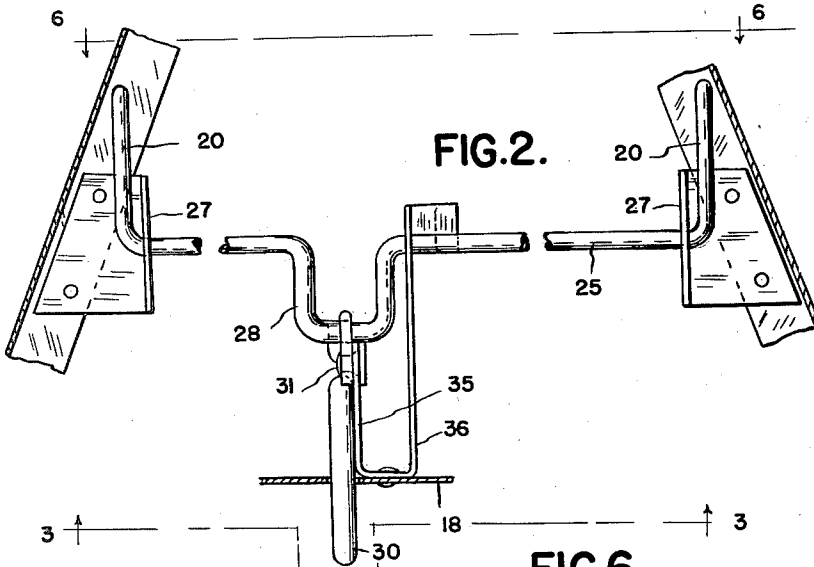


FIG. 2.

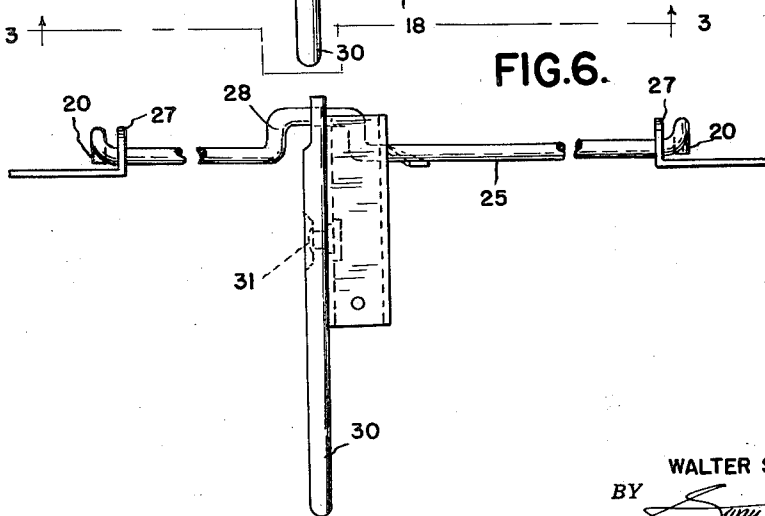


FIG. 6.

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# UNITED STATES PATENT OFFICE

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## LATCHING MECHANISM

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Application October 21, 1938, Serial No. 236,263

1 Claim. (Cl. 292—217)

This invention relates to latching mechanisms, having as its primary object the provision of improved holding means which, although adapted to be quickly fastened and released, secures the closure or other held portion very firmly, under tension, in a manner preventing rattling and unwanted looseness, and rendering the mechanism especially desirable for vehicular installations, although it is of course not limited thereto.

Another important object of the invention is to provide such latching means which is remotely controllable, yet which is so simple and inexpensive as to be commercially practicable for such uses as fastening the hoods of motor cars, and other uses in connection with articles produced in quantities and sold at a low margin of profit, and which accordingly permit the allocation of only very small sums of money to the purchase or manufacture of such devices.

Another object is to eliminate the use of special tensioning and anti-rattle springs, and to impose tension upon the mechanism and upon the closure, or other held part, by the flexing of an integral part of the latch mechanism when the latter is fastened.

Still another object is to provide such a latching mechanism provided with two or more holding portions spaced from each other and operable from a single control handle, such spaced holding means being operable through and carried by an operating rod which acts in torsion as a tensioning spring.

Other objects and advantages will be apparent from the following description, wherein reference is made to the accompanying drawings illustrating a preferred embodiment of my invention and wherein similar reference numerals designate similar parts throughout the several views.

In the drawings:

Figure 1 is a somewhat diagrammatic perspective view, partly broken away, of the hood and adjacent portions of a motor vehicle equipped with hood latching means constructed in accordance with the principles of this invention.

Figure 2 is a plan view of the latch mechanism, partly broken away, corresponding to a horizontal section through the adjacent portions of the hood and dash panel.

Figure 3 is a view of the latching mechanism in side elevation, corresponding to a vertical section taken as indicated by the line and arrows 3—3 of Figure 2, showing the latch released.

Figure 4 is a view similar to Figure 3 showing the latch closed but not tightly fastened.

Figure 5 is a similar view showing the latch tightly closed and locked, and;

Figure 6 is a front elevational view of the mechanism with adjacent portions of the vehicle removed, taken as indicated by the line and arrows 6—6 of Figure 2.

Referring now to the drawings:

Reference character 10 indicates hood walls defining the engine compartment of a motor vehicle. A lid section 12 hinged at the front normally closes but is adapted to be raised to afford access to the engine compartment. The arrangement of these parts will be seen to be more or less conventional, as also is the separation of the engine compartment from the passenger compartment 15 by means of a substantially vertical sheet metal dash panel 18. The lid when closed aligns with the cowl portion 14, and is adapted to be held by engagement of locking arms 20 with substantially horizontal keeper portions 22 carried by and one at either side of the lid section.

The locking arms project substantially at right angles from the end of a transverse rock shaft 25, with which they are shown as integral. The shaft is journaled in bearing brackets 27 attached to the side walls of the hood portion 10. A midportion of the shaft 25 is provided with an integral offset crank portion 28 to which is articulated the end of an operating lever 30 supported for rocking and sliding movement in a slot 33 in bracket 35 attached to the dash panel and projecting into the engine compartment. The other end of the operating handle projects into the passenger compartment through a slot 19 in the dash panel. A portion 36 of the bracket also acts as a central bearing for the shaft.

The relative proportions of the slot, crank, and operating lever are such that when the handle portion is raised to the release position shown in Figure 2, the latching arms 20 are lifted to free the lid, while when the handle is thrown down to the limit of its movement, as indicated in Figure 4, the latching arms are forced downwardly into and held in firm engagement with the keeper portions 22 to hold the lid closed.

The lower, forward end of the slot 33 is provided with a depression or notch 34 into which the shoulder rivet 31, which forms the pivotal support for the operating lever, is forced when the latter is moved all the way down, to the position indicated in Figure 4. In order to reach

this position, from the position shown in Figure 3, the lever must be moved with sufficient force to twist the rock shaft and force the crank 28 upwardly through a short arc while the latching arms are restrained by engagement with the keeper portions. The shaft is thus torsionally stressed, and when the parts are in latched position it acts as a spring, both to urge the lid more tightly into closed position, and to force the pin 31 downwardly into the notch 34, which prevents upward return movement of the handle toward released position until it is positively lifted to free the pin from the notch.

What I claim is:

15 Latching means comprising in combination with a portion to be releasably held, a bolt member movable into and out of holding engagement therewith, and operating means for so moving the bolt member, including a rotatable and tor-

5 sionally flexible shaft operatively connected thereto, means for turning the shaft to project the bolt member into and to retract the same from the holding position, means for maintain- 5 ing the shaft torsionally flexed when turned to the holding position, whereby its torsional flexibility yieldably urges the bolt member more tightly toward holding position, including a crank portion, an arm pivoted thereto, means support- 10 ing the arm for pivotal and sliding movement, the sliding movement of the arm allowing movement thereof into and out of a holding position in which said shaft is so torsionally flexed, and an abutment portion preventing return move- 15 ment of said arm from said abutment portion, the resiliency of the shaft when so flexed yieldably maintaining said arm in said holding position in engagement with said abutment portion.

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