

May 7, 1940.

W. S. SAUNDERS
AUTOMOBILE HOOD LATCH

2,199,467

Filed April 29, 1937

3 Sheets-Sheet 1

FIG.2.

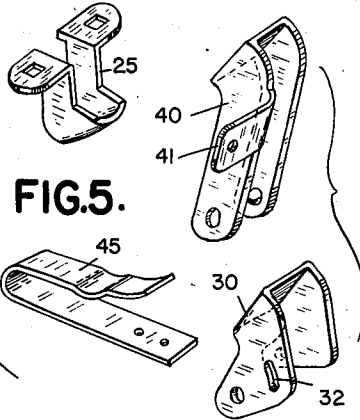
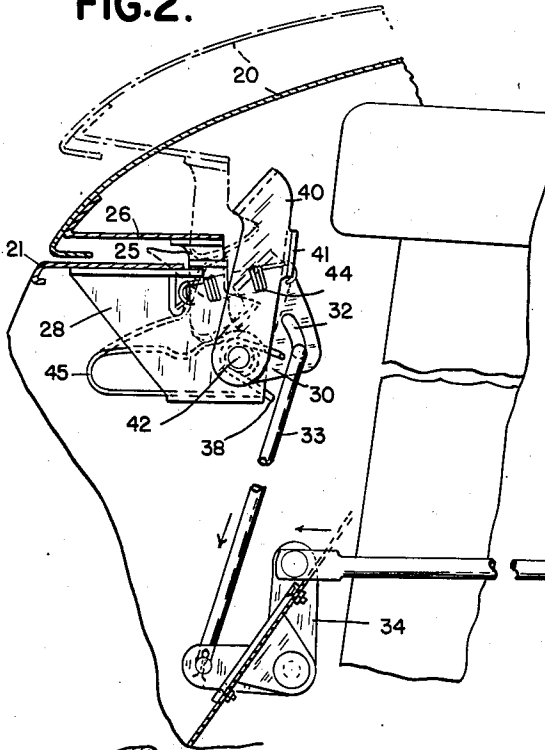


FIG.5.

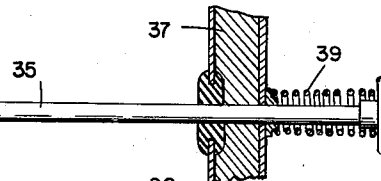


FIG.1.

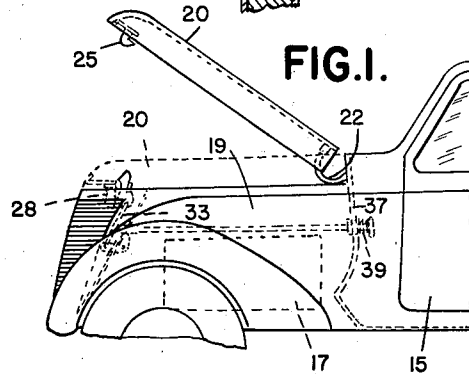


FIG.3.

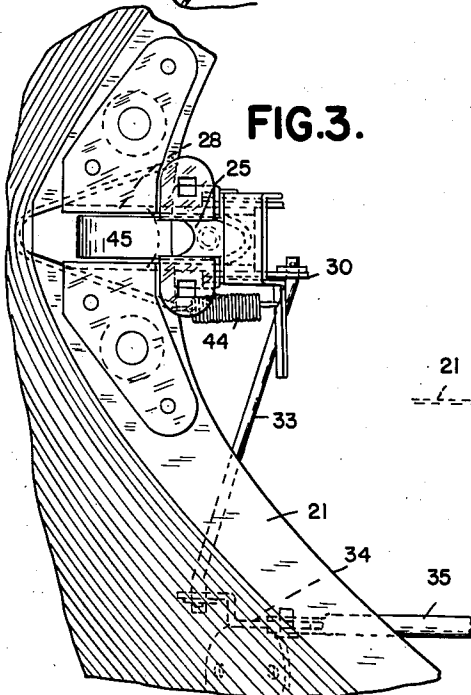
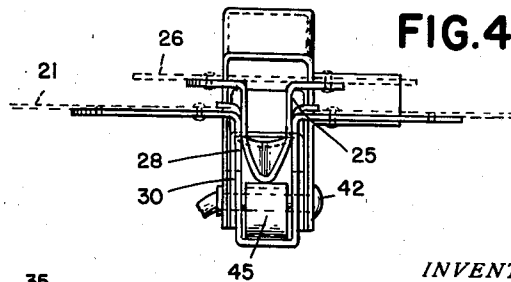


FIG.4.



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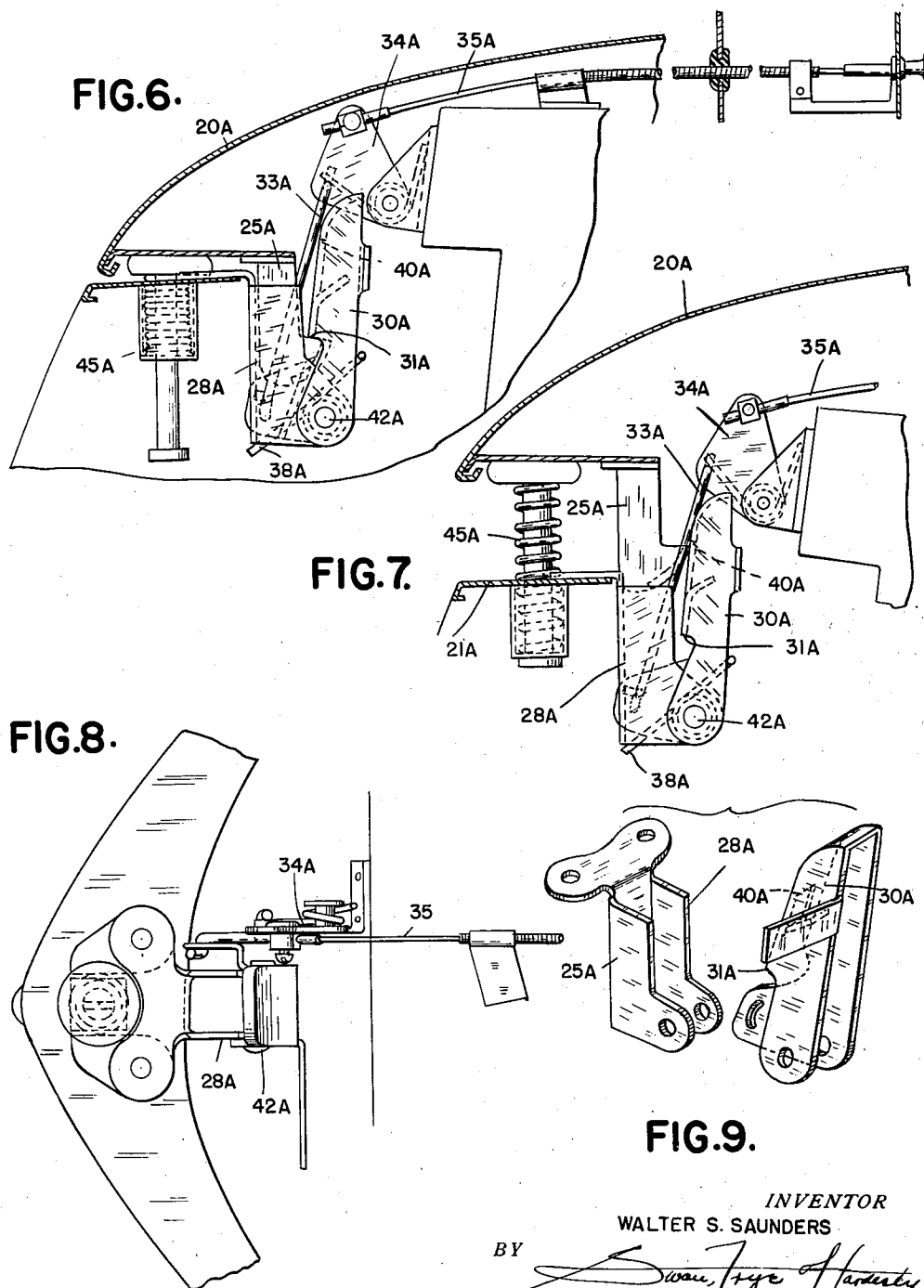
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AUTOMOBILE HOOD LATCH

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AUTOMOBILE HOOD LATCH

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FIG. 10.

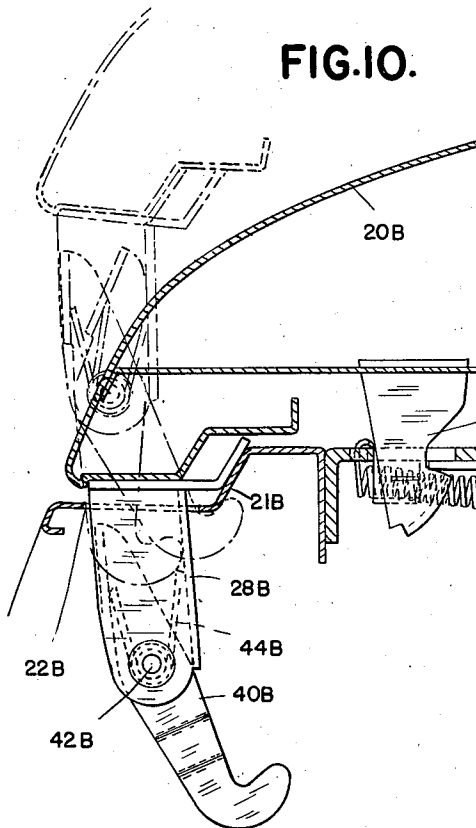


FIG. 12.

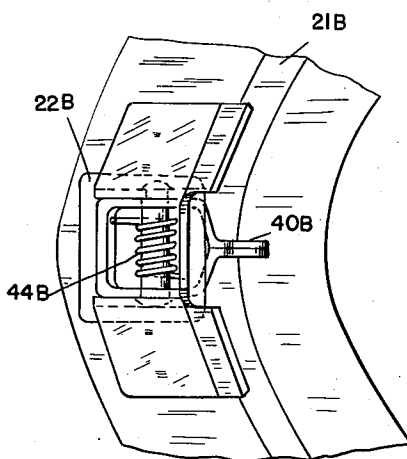
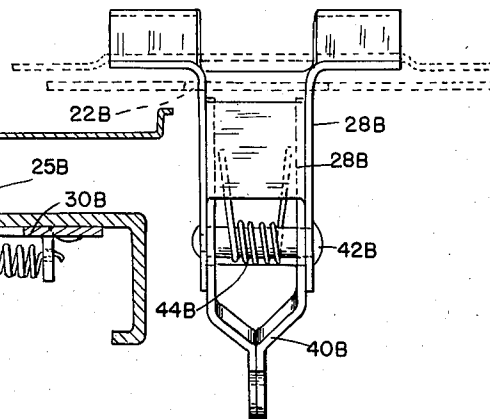


FIG. 11.

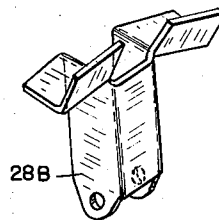
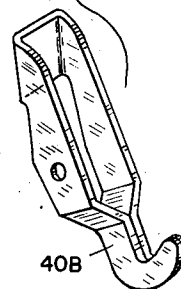


FIG. 13.



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UNITED STATES PATENT OFFICE

2,199,467

AUTOMOBILE HOOD LATCH

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Pontiac, Mich., a corporation of Michigan

Application April 29, 1937, Serial No. 139,778

11 Claims. (Cl. 292—44)

This invention relates to remotely actuable latching means, and particularly to the construction of such latching means adapted especially for the hood portions of motor vehicles. An important object of the present invention is to provide hood latching means of the character indicated, releasable from within the passenger compartment of the vehicle and so constructed that although the initial unlocking may be effected only by means of the remote controlled operating means, as, for example, from within the passenger compartment, complete freeing of the hood can be effected only by direct manual actuation of a safety catch located at the latch itself, such safety catch being operable only after initial unlocking by the remote operating means. By virtue of this construction, no accidental operation of the remote controlled unlocking mechanism while the vehicle is in motion can cause complete freeing of the hood, which would entail the danger that the latter might be caught by the wind, with the possibility of considerable resultant damage.

Another object is to provide such securing means for an engine hood or the like, incorporating a double latch so constructed that initial release thereof may be effected only from a remote point, while complete release may be effected only from another point and after initial release.

A further object is to provide such a construction which is of very simple and inexpensive nature, which provides secure holding in such manner as to prevent the possibility of noise or rattling of the parts when latched.

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

In the drawings:

Figure 1 is a fragmentary side elevational view of the front portion of a motor vehicle having a hood equipped with latching means constructed in accordance with the principles of this invention.

Figure 2 is an enlarged and somewhat diagrammatic longitudinal sectional view of the portions of the vehicle supporting the latching mechanism, the latching mechanism and its operating means being shown in side elevation.

Figure 3 is a plan view of the latching mechanism in closed position, with the hood lid removed.

Figure 4 is a rear elevational view of the latching mechanism.

Figure 5 is a composite perspective view of the principal operating elements of the latching mechanism, separated from each other but substantially in their operative relation.

Figure 6 is a view similar to Figure 2, showing a somewhat modified construction, with the lid portion of the hood in tightly closed and locked position.

Figure 7 is a similar view showing the lid unlocked but not fully released.

Figure 8 is a plan view of such modified construction, similar to Figure 3.

Figure 9 is a perspective view of the principal parts of the latching mechanism.

Figure 10 is a view similar to Figure 2 of another somewhat modified construction.

Figure 11 is a plan view of the safety catch mechanism, with the hood removed, similar to Figure 2.

Figure 12 is a rear elevational view thereof, similar to Figure 4, and

Figure 13 is a perspective view of the latching and keeper elements.

Referring now to the drawings, reference character 15 designates generally the body of a motor vehicle, which is shown provided with a front mounted engine 17 enclosed in a hood defined by side panels 19, while the front portion of the supporting framework is designated 21. The lid portion 20 is hinged at its rear end to the cowl portion of the vehicle, as by hinge bars 22, my improved latching means being carried partly by the front end of the lid, projecting downwardly from the inside thereof, and partly upon the front frame member 21.

Carried by the inside of the lid is a keeper element 25 secured to a bracket 26, the keeper element being in the form of a double bent sheet metal strip constituting a downwardly and rearwardly projecting hook, to and from overengaging relation with which a holding or bolt member formed of a strip of sheet metal bent to the shape of an inverted U is swingable. The legs of the U-shaped bolt member are pivotally attached to a combined latch casing and bracket member 28, secured to the frame portion 21. Such swingable bolt portion is designated 30, and as best shown in Figure 2, is operable by means of linkage mechanism having lost motion connection therewith, the lost motion being provided by a slot 32 in which a drag link 33 formed of heavy wire or the like engages. At its other end the link is articulated to a bell crank 34

operable by a reach rod 35 which projects into the passenger compartment, indicated as separated from the hood-defined engine compartment by a dash panel 37. A torsion spring 38 wrapped about the pivot pin upon which the U-shaped bolt member is supported urges such bolt toward the latched position, while a spring 39 also tends to return the operating linkage to the latched position.

Another bolt member 40, also in the form of an inverted U-shaped sheet metal strip, is independently pivoted upon the same pivot pin 42 which supports the bolt member 30, such bolt member 40, having longer legs, forming a safety catch which limits upward movement of the keeper, and so of the lid, when the bolt 30 is retracted. A tension spring 44 tends to hold the safety catch member 40 in such blocking position in which it restrains upward movement of the lid beyond the position shown in dotted lines in Figure 2, such spring being fastened at one end to the bracket 28, and at the other end hooked in an ear, 41, projecting laterally from one of the legs of the safety bolt and serving also as a finger piece by which the bolt member may be manually actuated by a person who, desiring to free the lid in order that it may be fully raised (after bolt 30 has been released to allow the lid to rise to the position shown in dotted lines in Figure 2), reaches into the opening then present between the lid and fixed portions of the hood, and pushes back upon the bolt 40.

Initial upward movement of the lid to the position in which it is caught by bolt 40 is effected by a leaf spring 45 also carried by bracket 28 and which is stressed by the keeper 25 when the lid is closed.

In the modified construction shown in Figures 6 to 9 inclusive, in which parts equivalent to those previously disclosed have been given like reference characters, distinguished by the addition of the letter A to each, the lid portion 20A also carries a keeper 25A in the form of a rearwardly projecting hood engageable with a swinging latch bolt 30A carried upon a bracket 28A secured to the frame portion 21A. The bolt member is also formed of sheet metal, generally in the form of a channel, having downwardly extending legs pivoted to a pin 42A carried by bracket 28A. The top of the bolt and bottom of the keeper are curved or inclined in opposite directions, so that the keeper in descending forces the bolt to the rear, whereafter the bolt may move forward to overengage the hooked end of the keeper and so hold it and the lid in place, as in the previous embodiment. The bolt member is provided with two stop portions, the lowermost of which, designated 31A, is that normally engaged by the hooked keeper when the lid is tightly closed, while the upper catch portion, designated 40A, constitutes a safety catch with which the keeper engages after the lower holding portion 31A frees it. The spring 45A tends to raise the lid immediately upon retraction of the bolt member, and another spring, designated 38A, yieldably holds the bolt in the latched position. The bolt is shown as operable by means of a link 33A having lost motion connection therewith and operable by means of a Bowden wire 35A extending to a convenient position in the passenger compartment, a swinging plate 34A providing connection between the link and wire.

The modification shown in Figures 10 to 13 inclusive comprises a separate safety catch member, designated 40B, mounted entirely independ-

ently of the main latch member. The bolt and keeper portions of the main latch member (remotely operable), are designated 30B—25B respectively, and the details of construction of such portions are subject to variation, as will readily be apparent, although, the preferred embodiment shown conforms to the disclosure of my copending application Serial No. 139,779, filed April 29, 1937, the lever 30B being operable from a remote point, as within the passenger compartment, to free the hook 25B. When bolt portion 30B is retracted, complete release of the lid 20B is prevented by safety catch mechanism which only allows it to rise to the dotted line position shown in Figure 10, in which a hook-shaped safety catch member 40B engages beneath the frame portion 21B to limit the upward movement of the lid. The safety catch member is pivotally supported upon a bracket 28B which, together with the hook, is adapted to project through an opening 22B in the frame 21B. An upwardly projecting continuation of the hooked safety catch member extends above its pivot pin 42B and constitutes a finger piece by which the hook may be released to completely free the lid, torsion spring 44B yieldably holding the catch member in operative position.

What I claim is:

1. In combination with an enclosure having a closure member movable to open and close the same, and holding means for releasably holding said closure in a closed position, supplementary holding means within the space enclosed by the enclosure and closure member when the latter is closed, limiting to a predetermined extent the opening movement of said closure member when said first mentioned holding means is released, said supplementary holding means having an element accessible for operation only when said closure member is opened to the limited extent permitted by said supplementary holding means and movable to release such holding means and allow wider opening of the closure member.

2. In combination with an enclosure defining a compartment, a closure movable to open and close said compartment, and latching means for holding the closure in closed position, additional holding means for limiting opening movement of the closure to a predetermined extent upon release of said first mentioned latching means, including a portion within the compartment releasable only by reaching thereto through the partially opened closure to free the latter for further opening movement.

3. In combination with an enclosure defining a compartment, a closure movable to open and close said compartment, and latching means for holding the closure in closed position, additional holding means for limiting to a predetermined degree the opening movement of the closure upon release of said first mentioned latching means, operating means accessible from outside the compartment for releasing said latching means, said additional holding means comprising a portion releasable from outside the compartment only when said latching means is released and after such partial opening of the closure member.

4. Means as set forth in claim 1 in which said first mentioned and supplementary holding means comprise a common keeper element and a pair of independently operable bolt elements having keeper-engaging portions arranged at different points in the path of movement of the closure, whereby when said first mentioned bolt element is released the bolt element of the supplementary

holding means is engageable with the keeper element and is releasable therefrom only by separate actuation.

5 5. Means as set forth in claim 1 in which said first mentioned and supplementary holding means
comprise a common keeper element carried by
the closure member and movable therewith to-
ward and from the compartment, and a pair of
separately operable bolt elements carried by the
10 enclosure and having keeper-engaging portions
spaced from each other in the path of movement
of the keeper during movement of the closure,
the bolt element of the first mentioned holding
means being engageable with said keeper when
15 the closure is fully closed, and the bolt element
of said supplementary holding means being en-
gageable with the keeper to restrain further open-
ing movement of the closure when the latter is
released by the first mentioned holding means
20 and is partly opened.

6. Means as set forth in claim 3, said latching
means and additional holding means comprising
a pair of keeper portions carried by the closure
and movable therewith toward and from the com-
partment, said keeper portions being spaced from
25 each other longitudinally of the path of movement
of the closure toward and from the compartment,
and separately operable means for releasing said
keeper portions.

30 7. In a safety catch for automobile hoods, a
latch lever rotatably mounted on and within the
hood, spring means adapted to rotate said lever
into securing position, said lever being adapted,
when in securing position, to permit a predeter-
35 mined limited upward movement of the hood, and
a manual handle, unitary with said lever, located
adjacent but within the edge of the hood, and in-
accessible to the operator when the hood is closed,
but accessible when the hood is partly open.

40 8. In a safety catch for automobile hoods, a
latch lever rotatably mounted on and within the
hood, spring means adapted to rotate said lever
into securing position, and a manual handle,
unitary with said lever, located adjacent but
45 within the edge of the hood, and inaccessible to
the operator when the hood is closed, but ac-
cessible when the hood is partly open.

9. In a hood latching arrangement wherein an
encasing portion of the hood is adapted to be

normally latched in closed position by a primary
latch mechanism and means may be provided for
normally urging the hood to partially open con-
dition in opposition to said primary latch mech-
anism, a safety catch comprising a movable ele-
5 ment normally unengaged when the hood is com-
pletely closed and latched by the primary latch
mechanism and normally inaccessible from the
exterior and adapted to become operative to hold
the hood in partially open condition when the
10 primary latch mechanism is released and the
hood urged to open condition, said catch includ-
ing an operating portion which becomes exposed
for manipulation from the exterior when the hood
is in its partially open condition.

15 10. In association with a pivoted hood section
adapted to be secured in closed position by a
primary latch mechanism, a secondary safety
catch comprising an interiorly mounted element
normally inaccessible from the exterior when the
20 hood is closed and adapted to become operative to
retain the hood in partially open position upon
release of the primary latch mechanism, and
including a catch portion and a manipulating part
which, when exposed, may be operated from the
25 exterior through the partial opening created upon
release of the primary latch mechanism and the
effective latching of the secondary catch.

11. In a hood latching arrangement wherein an
encasing portion of the hood is adapted to be
30 normally latched in closed position by a primary
latch mechanism and means may be provided for
normally urging the hood to partially open con-
dition in opposition to said primary latch mech-
anism, a safety catch comprising a movable hook
35 normally unengaged when the hood is completely
closed and latched by the primary latch mech-
anism and normally inaccessible from the exterior
and adapted to become operative to hold the hood
in partially open condition when the primary
40 latch mechanism is released and the hood urged
to open condition, said catch including an op-
erating handle which becomes exposed for ma-
nipulation from the exterior when the hood is in
its partially open condition, said handle being
located closely adjacent the forward edge of the
hood.

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