Oct. 11, 1927. 1,645,492

L. C. VANDERLIP

AUTOMOBILE HOOD CLAMP

Filed April 20, 1927

Fig. 1.

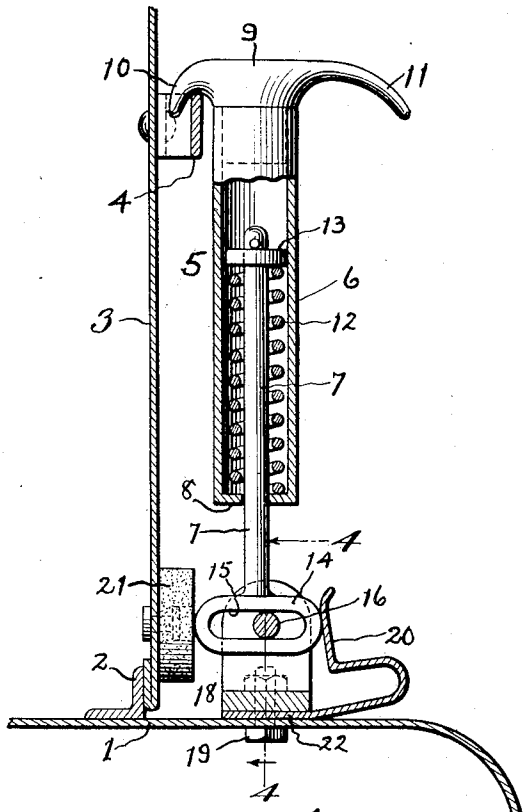


Fig. 2.

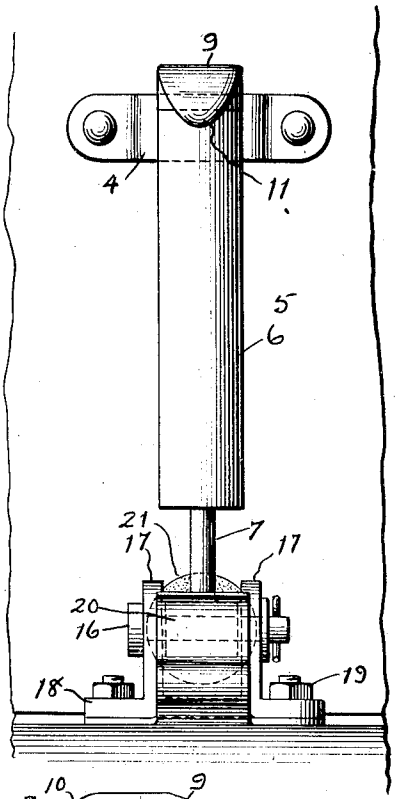


Fig. 3.

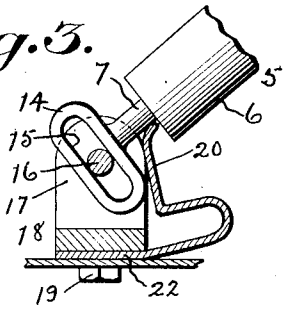


Fig. 4.

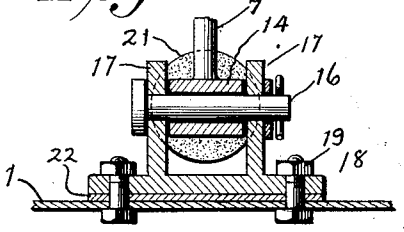
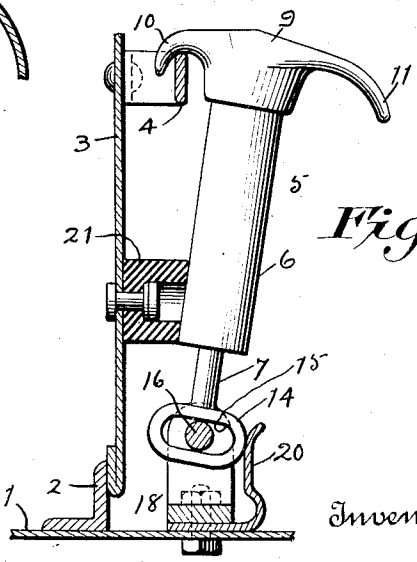


Fig. 5.



Inventor

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UNITED STATES PATENT OFFICE.

LOUIS C. VANDERLIP, OF ELKHART, INDIANA.

AUTOMOBILE HOOD CLAMP.

Application filed April 20, 1927. Serial No. 185,122.

The invention relates to motor car engine hoods, and especially to the hold-down clamp therefor.

The principal object of the invention is to provide an automobile hood clamp which combines both a hold-down element and means for effecting a positive side thrust on the hood to prevent rattling of the latter.

Another object of the invention is to provide an improved and effective hood clamping device comprising a hold-down clamp and resilient actuating means for projecting the clamp unit toward the hood to effect a side thrust thereon.

A third and more specific object of the invention is to provide an improved clamping device for a motor car hood and comprising a resilient hold-down clamp, and cam means for laterally actuating the clamp unit into contact with the hood. Other and more specific objects of the invention are mentioned and described herein.

The preferred embodiment of my invention is illustrated in the accompanying drawing, wherein Figure 1 represents a side elevation illustrating the invention in operative position in relation to a motor car hood; Fig. 2 is a front elevation thereof; Fig. 3 is a fragmental view illustrating the position of the parts when the clamp is disconnected from the hood and depressed; Fig. 4 is a section taken on line 4—4 of Fig. 1; and Fig. 5 illustrates a modification.

Similar numerals of reference indicate like parts throughout the several views on the drawing.

Referring to the details of Figures 1 to 4 in the drawing the numeral 1 indicates the usual automobile frame element on which the usual hood abutment element 2 is rigidly mounted to limit the inward movement of the engine hood element 3. The numeral 4 indicates the usual strap keeper rigidly secured to the exterior of the hood 3 above the frame 1, as is well known in the art, which keeper may be in any suitable form, and which is adapted to be engaged by the hook of the hold-down clamp, as hereinafter described.

In devices of this character it is of great importance that the hood clamp effect two functions, viz: the resilient pull-down on the hood keeper 4 and an inward lateral pressure or thrust on the hood 3 to project and maintain the latter in contact with the abutment 2 in order to effectually eliminate rattling of the hood. To accomplish an effective side thrust on the hood positive means are employed in this invention, whereby the clamp unit is positively actuated against the hood and held in that position so long as the pull-down element is connected with the hood keeper, as hereinafter described.

The numeral 5 indicates generally the clamp unit which may comprise the usual spring barrel 6, into which the spring rod longitudinally extends through the lower end 8 thereof; the head 9 rigidly secured in the open top end of said barrel, said head including the usual hook 10, for connection with the keeper 4, and the handle 11; and the usual coil spring 12 encompassing the rod 7 within the barrel 6 and seated on rod head 13 and barrel end wall 8. The lower end of the spring rod 7 may be provided with the bearing head 14 which may be provided with an elongated slot 15 which may extend at right angles to the axis of the rod 7. A bearing pin 16 extends through and transversely of the head slot 15 and may have its opposite ends carried in the opposed and spaced prongs 17, 17 of the bearing bracket 18, the latter of which may be secured to the frame 1 by bolts 19. Preferably the head 14 of rod 7 has a snug slidable engagement between the two prongs 17, whereby torsional movement of the rod and said rod head is effectually prevented, said prongs serving as guides for the head 14 when the latter is projected slidably toward the hood 3, as herein set forth.

Obviously, when the spring 12 is compressed within the barrel 6 by upward draft on handle 11 and hook 10 is connected with the keeper 4, the clamp unit 5 functions as a resilient hold-down clamp for the hood 3, the urge thereof being substantially in a vertical plane.

The numeral 20 represents a cam element, which may be made of flat spring steel, and which may have its base portion 22 disposed beneath the bracket 18 and secured therewith to frame 1 by the bolts 19. The spring cam 20 is adapted to resiliently bear against the outer end of the rod head 14 when the clamp unit 5 is raised to the upright operative position for connection with the keeper 4, whereby the head 14, and thereby the lower end of the clamp unit 5, is slidably and inwardly projected on pin 16 toward the hood 3, and the opposite, or inner, end of said head may contact with a rubber, or

yieldable, buffer 21 secured to the exterior of said hood in the path of movement of said rod head.

When the clamp unit 5 is disengaged from the keeper 4 and lowered, or depressed, Fig. 3, the rod head 14 will slide downward somewhat on pin 16 and the cam spring 20 may then bear against the bracket prongs 17. When the operator grasps the clamp handle 11 and begins to swing the clamp unit to an upright position, preparatory to engaging hook 10 with the keeper 4, the cam action of element 20 begins to assert itself on the outer end of the rod head 14, and continues during the upward swing of said clamp unit, reaching its maximum urge or pressure on said head 14 as the hook 10 is connected with said keeper.

In the modification illustrated in Fig. 5 of the drawing the yieldable buffer 21 is elevated somewhat and shaped to accord with the contour of the barrel 6 by which it is engaged as the clamp unit is swung inwardly by the cam action described.

It will be understood that the invention is not limited to a slot and pin bearing at the lower end of rod 7, but that other suitable means, affording pivotal and slidable action thereof, may be used in combination with cam means.

I claim:—

1. In an automobile hood clamp, the combination with a hood provided with a keeper, of a spring actuated hold-down clamp unit adapted for connection with said keeper, said clamp unit including a spring pressed element which is pivotally mounted in a base element, said spring pressed element being also mounted to slide toward the hood, and cam means operative upon and by oscillation of said clamp unit for slidably moving the lower end of said clamp unit toward the hood, and thereby causing said spring pressed element to engage the hood.

2. In an automobile hood clamp, the combination of a spring actuated hold-down clamp including a casing, a spring therein, and a rod within the casing, pressed by said spring and projecting therefrom, a bearing element, means for pivotally and slidably mounting said clamp rod in said bearing element, whereby it is slidably movable toward the hood, and cam means engageable by the base of said rod as the clamp unit is swung from a depressed to an upright position for moving said clamp unit base toward the hood.

3. In an automobile hood clamp, the combination of a spring actuated hold-down clamp including a casing, a spring therein, and a rod pressed by said spring, said rod projecting to the exterior of said casing and having its lower end provided with a slot which extends transversely of the rod axis, means engaging said rod slot for pivotally and slidably mounting the rod, and cam means for actuating the rod, and thereby the clamp unit, toward the hood.

4. A combined hold-down and side engaging clamp for an engine hood comprising a hook, a spring casing, a spring therein, a rod within the casing pressed by said spring and projecting through the lower end thereof, a bearing bracket, and power means disjoined from said spring and operative independently thereof for actuating said spring rod, and thereby the clamp unit base, toward and against the engine hood.

5. A combined hold-down and side engaging clamp for an engine hood comprising a hook, a spring casing, a spring therein, a rod in said casing, pressed by said spring and projecting through the lower end thereof, a bearing bracket, and power means disjoined from said spring for actuating said spring rod, and thereby the clamp unit base, toward and against the engine hood side, said means including a slot and pin connection between the rod and said bracket, and a cam.

6. A combined hold-down and side engaging clamp for an engine hood including a spring to yieldingly maintain the upper end of the clamp with the hood, and a cam and sliding connection for the clamp base to actuate the clamp base against the hood, the action of said cam being independent of the action of said spring.

7. In an automobile hood clamp, the combination with a hood provided with a keeper, of a spring actuated hold-down clamp adapted to engage said hood keeper, said clamp including a casing, a spring within the casing, a rod pressed by said spring and projecting through the base of the casing, said rod being provided with base portion having an elongated slot extending transversely of the rod axis, a rod bearing, a pin in said bearing engaging said slot and upon which the rod base is slidable toward the hood, a cam for actuating the rod base toward the hood when the clamp unit is elevated, and a buffer interposed between the clamp unit and the hood.

8. In an automobile hood clamp, the combination with a hood provided with a keeper, of a spring actuated hold-down clamp adapted to engage said hood keeper, said clamp including a casing, a spring within the casing, a rod pressed by said spring and projecting through the base of the casing, said rod being provided with an enlarged base portion, an elongated slot formed in said rod base, said slot extending transversely of the rod axis, a bearing bracket, a pin in said bracket and engaging the slot in the rod base and upon which the rod base is slidable toward the hood, a cam for actuating the rod base toward the hood when the clamp unit is raised from a de-

pressed to an elevated position, means for guiding the rod base in a rectilinear path toward the hood, and a buffer interposed between the hood and clamp unit.

9. In an automobile hood clamp, the combination with a hood provided with a keeper, of a spring actuated hold-down clamp adapted to engage said hood keeper, said hold-down clamp including a casing, a spring within the casing, a rod pressed by said spring and projecting through the base of the casing, said rod being provided with an enlarged base portion which is provided with a slot extending transversely of the rod axis, a bearing bracket, a pin in said bracket and engaging the slot in said rod base and upon which the rod base is pivotally and slidably mounted, a cam element adaped to engage said rod base for actuating the latter toward the hood when the clamp unit is raised from a depressed to an elevated position, means forming a part of said bearing bracket for guiding said rod base in a rectilinear path toward the hood, and a buffer interposed between the clamp casing and the hood.

In witness whereof I have hereunto affixed my signature this 16th day of April, 1927.

LOUIS C. VANDERLIP.