O. W. STILES.

AUTOMOBILE DOOR LOCK.

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1,283,350. Patented Oct. 29, 1918.

Fig. 1.

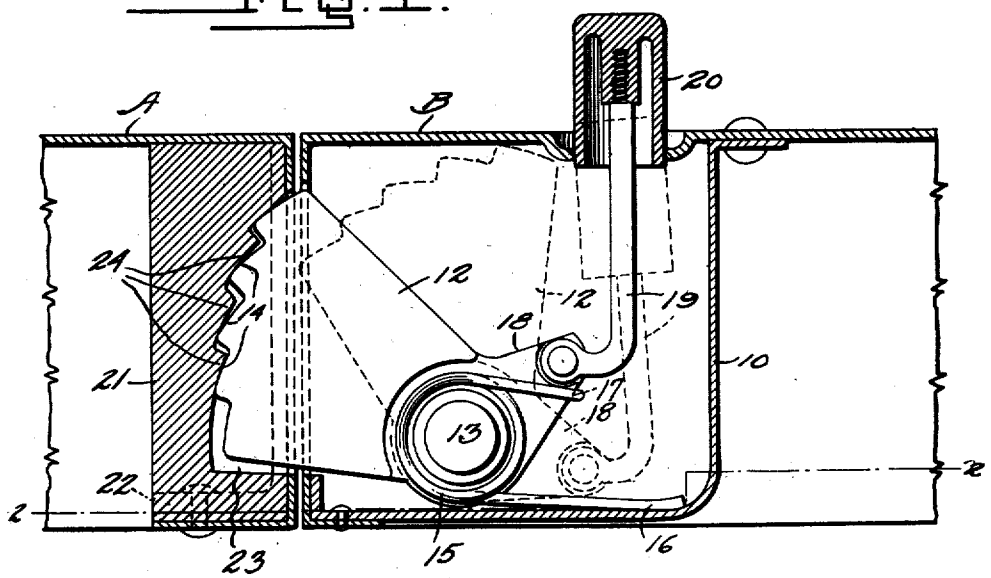
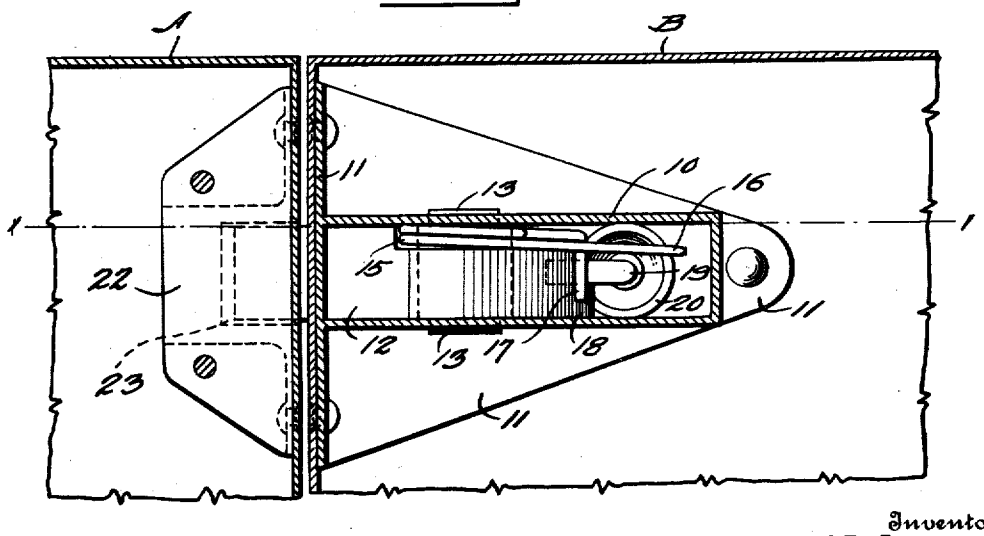


Fig. 2.



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UNITED STATES PATENT OFFICE.

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AUTOMOBILE-DOOR LOCK.

1,283,350. Specification of Letters Patent. Patented Oct. 29, 1918.

Application filed December 20, 1917. Serial No. 208,123.

To all whom it may concern:

Be it known that I, OTHO W. STILES, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented a new and useful Automobile-Door Lock, of which the following is a specification.

The present invention relates to door latches, and more particularly to an improved construction adapted for use in holding closed the doors of automobiles, and the like.

Latches as applied to motor vehicle doors are subjected to hard usage, and heretofore all latches have been found unsatisfactory in not retaining the doors closed, being hard to catch even by repeated slamming of the doors, and being too easily released by slight pressure or by jarring of the vehicle to admit the swinging open of the doors and resulting frequently in accidents where persons lean against the door and are precipitated from the vehicle. Then too, doors and frames of motor vehicle bodies sag and become distorted and prevent the unsatisfactory operation of the latches now in use.

The object of this invention is to provide a door latch in which all of the above objections are overcome, which securely holds the door closed even though the latch is not operated to its full closing extent, which requires no slamming of the doors; which admits of the easy and silent closing of the door; and a latch which is bound hard in securing position by pressure against the inner side of the door, and prevents the door from opening even though the latch is not fully closed.

The invention also embraces various other important objects and advantages which will be in part described, and in part understood, from the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawing, wherein:

Figure 1 is a horizontal section through the upper part of a door and frame of an automobile, showing a latch constructed according to this invention applied thereto, the section being taken in the line 1—1 of Fig. 2.

Fig. 2 is a vertical section through the same, taken on the planes indicated by the line 2—2 of Fig. 1.

Referring to this drawing, A designates the frame or body part of a motor vehicle in which is mounted in the usual manner the hinged door B.

The latch has a casing 10 which may wholly, or in part, inclose the parts of the device, and which is reinforced by flanges 11 and secured thereby to the interior of the door B. The casing 10 is disposed horizontally in the upper part of the door B and near the free edge thereof.

A latch segment 12, in the form of a casting or the like, is pivoted at its axial center on pin 13 of any adaptable construction. The pin 13 is preferably headed at opposite ends against the outer faces of the sides of the casing 10, and is arranged near the inner edge of the casing. The segment 12 is adapted to project through the outer edge of the casing and has its peripheral edge stepped or notched to form a plurality of shoulders or teeth 14 the contact faces of which are struck on arcs of radii successively decreasing in length from the inner to the outer end of the segment.

Seated in the upper face of the segment 12, and surrounding the pin 13, is a helical spring 15, one end 16 of which bears against the inner edge of the casing 10 and the other end 17 of which is bent downward and bears against a bell crank extension or lug 18 on the segment. The spring 15 normally urges the segment 12 outward through the free edge of the door B.

A link 19 is pivoted at one end eccentrically to the segment 12, as to the lug 18 in the present instance, and is connected at its other end to a button or handle 20 movably mounted on the door B. The member 20 is threaded on the link 19 in the present structure and is slidably arranged through the outer wall of the door. The link 19 is offset from the lug 18 remote from the pin 13, and the button 20 is free to cant or tilt in the wall of the door.

The frame A is provided with a keeper 21 in the form of a casting having attaching flanges 22 adapted to be riveted to the walls of the frame. The outer side of the keeper has an opening or recess 23 in its outer edge within which the segment 12 is adapted to swing, and the inner wall of the opening is stepped from end to end of the keeper to form a row of shoulders or teeth 24 consecutively receding, and arranged in an arcuate line struck from the pin 13 of the segment as a center, when the casing registers with

the keeper. The shoulders 24 are complemental to the shoulders 11, and when the segment 12 is fully closed the teeth intermesh and the arcuate faces of the teeth abut and bind the segment between its pivot pin 13 and the keeper 21.

Should the segment 12 be swung only part-way into the keeper opening 23, and the door B be not fully closed, the teeth 14 of the segment which do project into the keeper engage the adjacent teeth and bind them to prevent the opening of the door B until the handle 20 is operated and the segment 12 is retracted into its casing 10. Whether the door B is fully, or only partly closed, any pressure on the door to swing it into an open position only binds the segment and insures the more certain retention of the door in its closed position.

To release the door B, it is only necessary to press the button 20 and force the link 19 inward to turn the segment 12 against the tension of the spring 15 for retracting the latch.

When the door B is closed the outer edge of the latch or segment 12 strikes the frame A and the segment is sprung into the casing 10 sufficiently to pass over the end of the keeper 21 and to enter the keeper opening 23.

It is within the spirit of this invention to make various modifications and changes which are restricted only by the scope of the following claims.

What is claimed is:

1. In an automobile door latch, the combination with a door and a frame therefor, of a keeper in the frame having an abutting shoulder, and a latch pivoted in the door near the inner side thereof and provided with stepped abutting faces struck on arcs of different length radii from the pivoted axis of the latch, the abutting faces of said latch being adapted one at a time to engage the shoulder of the door and maintain the door from opening when closed to a more or less extent by direct radial thrust on the latch.

2. In an automobile door latch, the combination with a door and a frame therefor, of a keeper in the frame having a plurality of independent shoulders facing the door, and a latch member pivoted in the door near the inner side thereof and adapted to swing at its free end through the free edge of the door into the keeper and consecutively engage against said shoulders to retain the door in various closed positions by longitudinal thrust of the latch member.

3. In an automobile door latch, the combination of a door and a frame therefor, of a keeper in the frame having a plurality of independent shoulders facing the door, a latch pivoted in the door near the inner side thereof and adapted to swing at its free end through the free edge of the door into the keeper and consecutively engage against said shoulders to retain the door in various closed positions by longitudinal thrust of the latch member, a spring in the door engages the latch to normally urge the latter outward through the door, and a handle on the door connected to the latch for retracting the same for releasing the door.

4. In an automobile door latch, the combination with a door and a frame therefor, of a keeper in the frame having a plurality of shoulders facing toward the inner side of the frame and arranged at consecutively increasing depths in the keeper, and a latch member pivoted in the door near the inner side thereof and adapted to swing at its free end through the free edge of the door into the keeper and consecutively against said shoulders to retain the door in various closed positions by longitudinal thrust on the latch member.

5. In a latch, the combination with a door and a frame, of a segment pivoted in the door near the inner side thereof, a spring connected to the segment to normally urge the free end thereof out through the free edge of the door, a keeper mounted in the frame opposite the segment and having an opening to receive the free end of the segment, said segment and said keeper having complemental abutting faces arranged substantially on arcs struck from the pivotal axis of the segment of radii of consecutively decreasing length from the inner to the outer edge of the segment, the abutting faces being adapted to overlap to various extents to hold the door in various closed positions by longitudinal thrust of the keeper against the segment, and a handle connected to the segment for retracting the same and releasing the door.

OTHO W. STILES.