

T. J. KEHOE & C. F. GREEN.
DOOR LATCH.
APPLICATION FILED JAN. 8, 1913.

1,066,501.

Patented July 8, 1913.

Fig. 1.

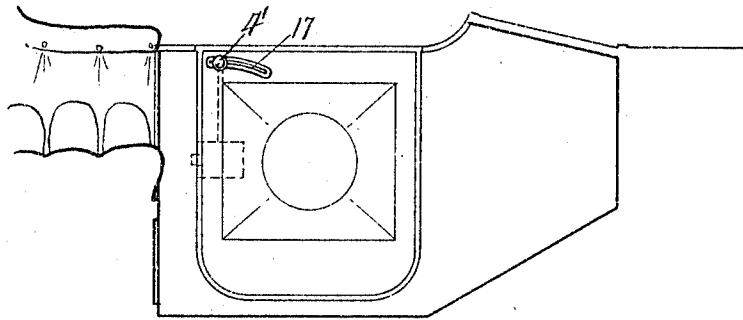


Fig. 2.

Fig. 3.

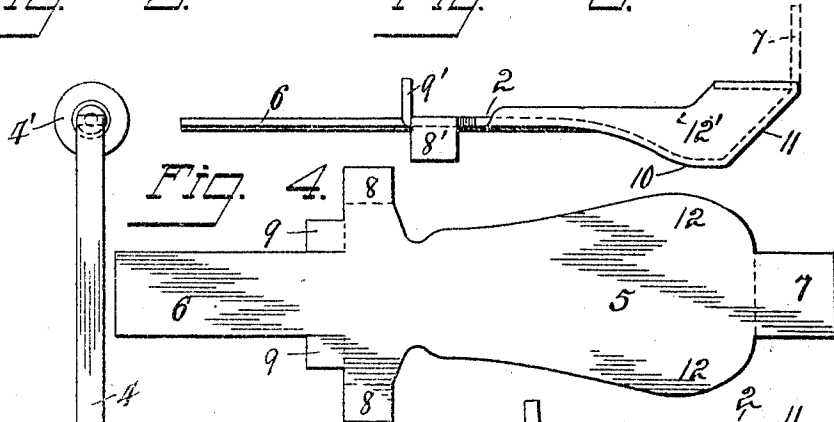
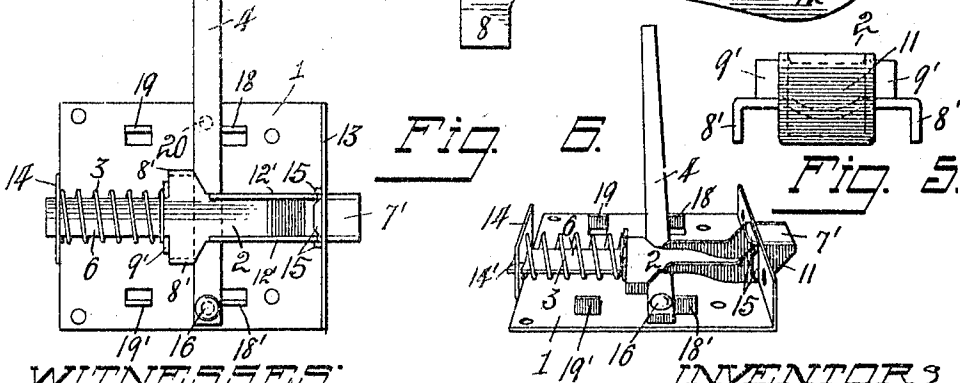


Fig. 4.

Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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DOOR-LATCH.

1,066,501.

Specification of Letters Patent.

Patented July 8, 1913.

Application filed January 6, 1913. Serial No. 740,454.

To all whom it may concern:

Be it known that we, THOMAS J. KEHOE and CHARLES F. GREEN, citizens of the United States, and residents of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Door-Latch; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to door latches of the reciprocatory bolt type, and is intended more particularly for use in connection with the doors of automobiles, but is not restricted to such use as it may be used in any other connection for which it may be adapted or appropriate.

The primary object of our invention is the provision of a latch of this character, which is simple, strong and light in its construction, rapid and inexpensive to manufacture, and easy and efficient in its operation, thus enhancing the practicability and commercial value thereof.

A further object of the invention is the provision of an improved latch of this character which has the parts thereof of minimum number, easy to assemble, and all stamped from sheet metal.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is an inner side elevation of an automobile door and associated parts equipped with a latch embodying the invention. Fig. 2 is an enlarged side elevation of the latch. Fig. 3 is an enlarged side elevation of the bolt member of the latch with one of the forming positions of the nose tongue thereof shown in dotted lines. Fig. 4 is a plan of the blank from which the bolt member is formed. Fig. 5 is an outer end elevation of the formed bolt member, and Fig. 6 is a perspective view of the latch.

Referring to the drawings, 1 designates the body plate or bolt carrying member of the latch, 2 the bolt member, 3 a coiled com-

pression spring which encircles the tail-piece of the bolt member and acts against the bolt member and a part of the body plate, as hereinafter described, to normally retain the bolt in its projected or locking position relative to the body plate, and 4 designates the operating lever of the lock.

The bolt member 2, which is of single piece construction, is stamped from sheet metal and when in its blank form, preferably comprises a broadened body part 5 having the tail-piece 6 and the nose-piece 7 projecting from opposite ends thereof, and provided at its rear end with the oppositely projecting tongues 8, 8 of duplicate form and at each side of the inner end portion of the tail-piece 6 with a tongue 9, which extends from the inner end portion of the adjacent tongue 8 in the direction of extension of the tail piece 6. The body part 5 of the bolt member has its forward end of curved broadened form and gradually diminishes in width toward the tongues 8. When the blank is shaped to form the bolt the tongues 8, 8 are bent downward to form laterally projecting lugs 8', and the tongues 9 are bent upward or preferably in the opposite direction to the lugs 8' to form the upstanding lugs 9'. The body part 5 is shaped to form the hollow tapered nose portion of the bolt, with a part of the central portion thereof, which alines with the tail and nose pieces 6 and 7, tapered in the direction of projection of the lugs 8' and to substantially the depth thereof, as at 10, and forming the tapered wedge face 11 of the bolt, with the broadening portions 12, 12 of the blank body 5 bent upward and inward to form the side walls 12' of the bolt nose. The bolt nose being formed, the nose-piece or tongue 7 is bent over and downward between the upper straight forward edge portions of the side walls 12' of the nose to cooperate therewith to form the flat side 7' of the nose in opposition to the tapered portion 11 thereof. The forming of the nose portion of the bolt in this manner renders the same very strong and rigid and places the plane of the tail-piece, or the original body plane of the bolt, substantially midway of the lower and upper sides of the bolt nose, or the sides thereof which are connected by the tapered portion 11. The tail-piece 6 and the adjoining part of the bottom portion of the bolt are preferably bowed in cross-section

to give additional strength and rigidity to the bolt member.

The body plate 1, in the present instance, is of rectangular form and provided at one edge thereof throughout its length with a laterally projecting flange 13, forming the outer end wall of the body member, and has its opposite edge provided with a tongue or flange 14, which projects therefrom in the same direction as the flange 13. The flange 13 is provided with an opening of suitable size for the nose portion of the bolt member to work through, and the flange 14 is provided with a guide opening 14' in which the tail-piece 6 of the bolt works. In order to render the wall of the opening in the flange 13 of greater width than the thickness of the metal forming the flange, a portion of the metal, which is removed from the flange to form the bolt receiving opening therein, is preferably turned inward at three sides of the opening, as indicated at 15. The lugs 8' and the depressed portion 10 of the bolt are intended to project toward the inner side of the body plate 1, and serve to space the bowed portion of the bolt from the plate.

The control-lever 4 is intended to pass between the bolt and the body plate transversely of the former and normally in contact with one or both of the bolt lugs 8', being pivoted at one end to the plate adjacent to a side edge thereof, as at 16, and having its opposite end projected a desired distance beyond the opposite side edge of the plate. In Fig. 1 the control-lever 4 is shown as projecting inward from the latch and as having its handle or knob portion 4' working through a segmental slot 17 in the inner side portion of the door carrying the lock, thus placing the handle of the lever in convenient reach of a person within the automobile. The movement of the lever 4 in one direction is limited by a stop-lug 18 and in the opposite direction by a stop-lug 19, both of which are struck inward in spaced relation from the plate 1 adjacent to the side edge thereof opposed to that near which the lever is pivoted.

The spring 3, which actuates the outward projecting movements of the bolt, encircles the tail-piece 6 thereof between the plate flange 14 and the upstanding lugs 9' of the bolt with its opposite end thrust thereagainst, and causes the bolt lugs 8' to act against the lever 4 to normally hold it in contact with the stop-lug 18. It is thus apparent that a movement of the lever 4 away from the stop-lug 18 effects a retraction of the bolt from its projected or normal position.

In order to adapt the latch for use either as a right or left fitting, the body-plate 1 is provided adjacent to each of opposite side edges thereof with a bearing aperture 20 in either of which the lever pivot may be re-

movably inserted, as it may be desired to project the lever handle in one direction or the other from the plate, and the plate is provided adjacent to the side edge thereof, which is opposed to the edge adjacent to which the lugs 18 and 19 are disposed, with correspondingly positioned lugs 18' and 19', which answer the same purpose as the lugs 18 and 19 when the lever is inserted from the position in the drawings.

It is evident that we have provided a simple and inexpensive form of latch for use in automobiles or in any other connection for which it may be adapted, and that it is composed of a minimum of parts and capable of being easily and quickly assembled.

In the assembling of the parts of our improved latch it is only necessary to place the spring 3 over the tail-piece 6 of the bolt member, then insert the nose of the bolt through the opening in the flange 14, after which the lever 4 is inserted between the body plate and bolt member with the lugs 8' at one side thereof and the stop lug 18 at the other side thereof, and secured in position by inserting the pivot member 16 of the lever into the plate aperture 20 provided therefor. It is evident that the parts can be very quickly assembled in this manner and that the lever member 4 retains the parts in assembled relation, as the bolt member cannot be removed from engagement with the plate until the lever has first been removed for such purpose.

We wish it understood that while we have particularly described a preferred formation of the parts comprising the latch, the invention is not restricted to any particular form or arrangement of such parts except in so far as such limitations are specified in the claims.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is,—

1. In a latch of the class described, a plate having spaced bolt guiding parts and having a pair of spaced lugs projecting laterally therefrom adjacent to each of the opposite edges thereof, a bolt disposed intermediate said pair of lugs, and a control lever for the bolt adapted to have an end thereof removably pivoted adjacent to either pair of said lugs and to have its rocking movements limited by the other pair of lugs.

2. In a latch of the class described, a body plate, a bolt guided for longitudinal reciprocatory movements by said plate, a pair of lugs projecting from the plate at each side of the bolt and being spaced longitudinally of the bolt, a lever adapted to have an end projected between the plate and bolt in either of opposite directions and removably pivoted between the farther set of lugs in the direction of which it is projected and

to have its oscillatory movements limited by the other set of lugs, said lever being adapted to coact with the bolt to control its movements.

5 3. In a lock of the class described, a plate having flanges projecting from opposite end edges thereof and having a set of longitudinally spaced stop-lugs adjacent to each side edge thereof and provided with a bearing aperture intermediate the lugs of each set, a lever having a pivot at one end for fitting into either of said bearing apertures and projected across the plate from its pivot and working between the stop lugs at 10 the opposite side of the plate, a single-piece sheet metal bolt member provided at one end with a tapered nose which works through one of said plate flanges and provided at its other end with a tail-piece 15 which works through the other of said flanges, said bolt member also having a lug projecting therefrom toward the plate and normally in contact with a side of said lever, and means influencing a movement of 20 the bolt member in one direction and effecting a movement of the lever into contact with one of the stop-lugs between which it is projected.

4. In a lock of the class described, a bolt 30 formed from a single-piece sheet-metal blank having a broadened body part with nose and tail pieces projecting from opposite ends thereof and with tongues projecting transversely from adjacent to the rear 35 end thereof, the body part having the portion thereof in longitudinal register with said nose and tail pieces partially depressed to form a tapered nose portion with the side

portions of the body part turned upward and inward to form the side walls of the 40 bolt nose, the nose-piece being bent over between the forward portions of said side walls to form a closed side of the bolt nose in opposition to its tapered side, and the transversely projecting tongues being bent 45 laterally in the same direction relative to the bolt body.

5. In a lock of the class described, a body-plate having bolt-guiding parts, a single-piece sheet-metal bolt member guided at op- 50 posite end portions thereof by said part with the major portion thereof in spaced relation to the plate, said member comprising a substantially straight transversely bowed portion which terminates at its forward end in 55 a hollow bolt nose having a tapered end and having a lug projecting therefrom toward the plate, a coiled compression spring encircling the rear end portion of the bolt and acting against a part of the bolt and one 60 of said guide parts to normally project the nose of the bolt beyond the adjacent edge of the plate, and a lever fulcrumed to the plate and acting against the bolt lug to cooperate therewith to limit the spring influence 65 movements of the bolt and to retract the bolt from normal position.

In testimony whereof, we have hereunto signed our names to this specification in the presence of two subscribing witnesses.

THOMAS J. KEHOE.
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Witnesses:

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S. T. KLOTZ.