W. H. APPLEBY.

LATCH CASE.

APPLICATION FILED MAY 7, 1915.

1,233,295. Patented July 17, 1917.

Fig. 1.

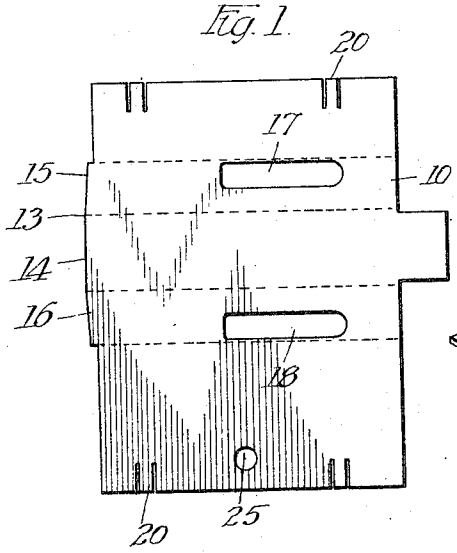


Fig. 2.

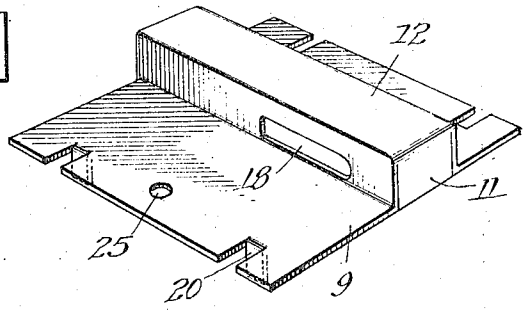


Fig. 3.

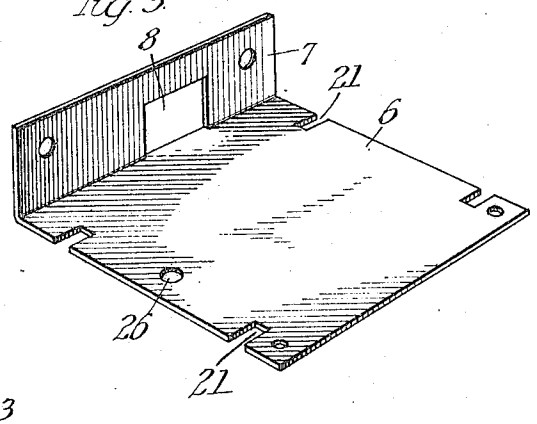


Fig. 4.

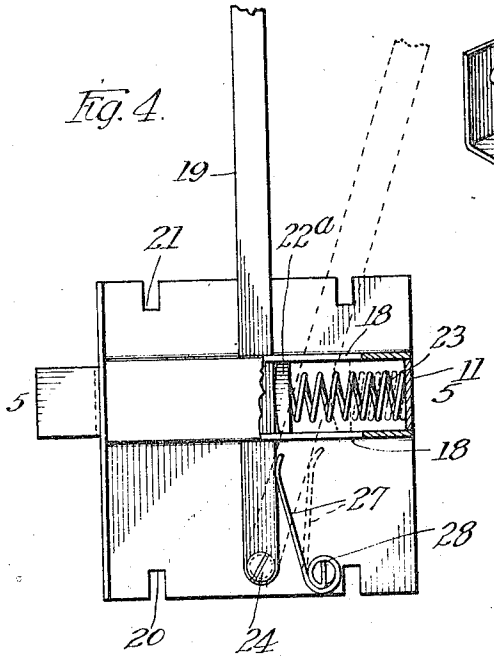
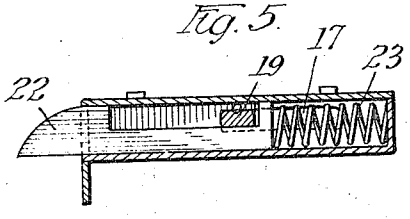


Fig. 5.



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UNITED STATES PATENT OFFICE.

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LATCH-CASE.

1,233,295. Specification of Letters Patent. Patented July 17, 1917.

Application filed May 7, 1915. Serial No. 26,653.

To all whom it may concern:

Be it known that I, WILLIAM H. APPLEBY, a subject of the King of Great Britain, and resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Latch-Cases, of which the following is a full, clear, and exact specification.

This invention relates to improvements in latch cases in which heretofore the end of the cover for reciprocating latch bolts projected against the inner surface of the face plate around a slot in the face plate through which a reciprocating latch bolt is projected, and as a result of which the thin walls surrounding the slot form a direct bearing for about three-fourths of the circumference of the surface of the length of the bolt opposed thereto.

With the use of a latch case and cover constructed and arranged as above described, the walls of the slot are soon worn away, and the size of the slot accordingly increased from the friction of the bolt rapidly increased by the roughness of the surface of the bolt from scratches and cuts produced by the sharp corners of the thin walls of the slot, and so quickly that in a short time there is such a looseness of the bolt in the slot not only preventing the bolt from holding a door tight against its jamb, but producing a rattling noise which is a serious objection to their use upon automobiles and other vehicles, and wherein the only remedy is the substitution of a new lock at an accordingly increased cost therefor.

The prime object of my invention broadly stated, is to provide a latch case, the construction of which is such that the reciprocating bolt therefor is isolated from contact with the walls of the slot in the case through which the bolt is projected, and the bearings for the bolt are furnished by additional means directing its movement.

More specifically stated the object of my invention is a latch case having a face plate provided with a slot through which to project a reciprocating latch bolt and a cover inclosing, and directing the movement of the bolt free from contact with the edges of the face plate forming the walls of the slot therethrough.

A further object of my invention is to provide from a sheet metal blank, with the single stroke of a die, the base and face plate of a latch case provided with a slot therethrough for a bolt, and likewise from another sheet of metal a backing plate and a cover for the bolt passing through the slot in the face plate, one end of which cover is inclosed by the walls of said slot, whereby the bolt is isolated from contact with said walls.

A still further object of my invention is to provide a latch case, the slotted face plate of which is formed integral with the base plate, with the walls of said slot, and said base plate reinforced by means of another plate provided with an integral bolt cover furnishing bearing surfaces directing the path of movement of the bolt and maintaining the bolt from contact with the walls of the slot through which it is projected.

Another object of my invention is to provide a form of blanks from which to construct a sheet metal latch case in its entirety from two blanks, each of which is adapted to be bent by one operation of a die therefor to such a form that when assembled, a base plate and slotted face plate may be formed from one blank, and an integral reinforcing plate and cover is formed from the other blank, which said cover projects between the walls for the slot in the face plate and provides with the base plate bearings for and directing the latch bolt through the opening formed by the slot in the face plate.

A further object of my invention is to provide for the construction of a sheet metal latch case in its entirety from but two blanks adapted to be bent by one operation of a die for each blank to such a form that one blank provides for an integral base plate and slotted face plate, and the other blank for an integral reinforcing plate and cover closed at one end projecting at its opposite end between the walls for the slot of the face plate and together with the base plate forming the bearings for and directing the latch bolt through the opening provided by the slot in the face plate, and a dust proof cap for the bolt, and also opposing slots in the cover for the passage of a lever therethrough for operating the latch bolt.

With these ends in view, my invention finds embodiment in certain features of novelty in the construction, combination, and arrangement of parts by which said objects

and certain other objects are attained, all as hereinafter fully described, with reference to the accompanying drawings and more fully pointed out in the claims.

In said drawings:

Figure 1 illustrates in plan view a reinforcing plate from which the cover for the latch bolt is struck.

Fig. 2 is a perspective view of the finished reinforcing plate and the cover.

Fig. 3 is a perspective view of the finished body of the latch case.

Fig. 4 is a side elevation of the completed latch case containing a sliding bolt mechanism and a swinging lever for actuating the bolt in one direction, and a wall spring for moving it in the opposite direction, and—

Fig. 5 is a transverse section taken on the line 5—5 of Fig. 4 with the springs shown in full lines.

Similar characters of reference indicate the same parts in the several figures of the drawings.

The latch case in which my invention finds its embodiment consists of two members, one of which, for convenience, is designated as a supporting member consisting of a flat base 6, a face plate 7 having therethrough a slot 8, and the other as a cap member 9 providing a means for inclosing the bearings for the sliding bolt before referred to.

The blank shown in Fig. 1 from which the cap member 9 is formed, consists of a thin sheet of metal 10, generally of rectangular form, from one side of which projects a tongue 11, which, when bent to the position shown in Fig. 2 is adapted to fit between the side walls and close the end of a cap plate 12, and from the opposite side of the plate 10 is a projection 13 the width of which equals the outer and opposing side walls of the slot 8, and is provided with a straight edge 14, from the opposite sides of which inwardly extend oblique edges 15 and 16, adapted to be projected through and terminate flush with the surface of a face plate, as indicated in Fig. 3.

This sheet metal blank 10 is also provided at intervals with elongated slots 17 and 18 which in the completed cap 12 provide passage ways and bearings for the lever 19 of a pivoted lever lock, the mechanism of which will presently be described.

The opposite side edges of the blank 10 are also provided with slits to form tongues 20 adapted to project through respectively opposing slots 21 in the base plate 6 of the supporting member, as shown in Fig. 2, and to be subsequently bent against the latter plate, for locking together as shown in Fig. 5, the supporting and cap members, constituting a latch case, provided with a cap for the sliding bolt 22, and whereby the latch mechanism of the case may be conveniently and quickly inserted in its operative position in the case.

As shown in the drawing, the latch bolt 22 is provided with a lug 22^a forming an abutment for a coiled spring 23, the opposite end of which abuts against the wall of the closed end 11 of the cap plate, and whereby the bolt is normally projected outwardly from the latch case.

With the latch case constructed as above described, it may be very quickly and easily assembled with its latch mechanism by first placing the bolt in the cap plate inserting the projecting spring between the bolt lug and the closed end of the cap, and then sliding the base plate over the cap plate until the end of the cap projects between the walls of the slot in the face plate.

After securing the two plates together in their operative position, while holding the case in the hand, the bolt is pressed against the thumb or fingers until a free passage is provided for projecting the lever 19 through the slots 18 in the cap plate followed by securing it in its operative position by means of the screw 24, projected through perforations 25 and 26 respectively in the cap and base plate, and thereafter securing a spring 27 to the base plate by means of a screw 28 with the free end of the spring pressing against the lever for sustaining it against rattling.

It will now be observed that with my invention it is both practical and possible to produce in its entirety, from a single blank with one operation of a single die, a reinforcing plate for a latch case, and integrally therewith a dust proof cover for a reciprocating latch bolt, and a cover, the walls of which adjacent its open end project between the walls of the slot in the face plate, and whereby together with the reinforced base plate a continuous uninterrupted bearing is provided for the bolt for its entire length directing it in a straight line of movement without the possibility of the bolt being cut or scratched by, or the walls of the slot in the face plate being worn away from the contact of the bolts therewith.

It should also be observed that for constructing latch cases from sheet metal bent to form, my invention provides for and enables the use of a maximum thinness of metal consistent with the required durability and strength of the latch case, formed therefrom, a means bracing the face plate therefor against accidental bending, and the desired reinforcing of the face plate formed from very thin metal, and for stiffening a dust proof cover for a latch bolt against bending, and also its otherwise liability to displacement from its operative position, and this latter whether the reinforcing plate when integral therewith is secured to the base plate either by clips as shown, or by

screws heretofore commonly employed for that purpose.

Having described my invention what I claim and desire to secure by Letters Patent is:

1. A latch case comprising in combination a base plate, a face plate therefor provided with a slot, a reciprocating latch bolt, and a cover therefor projecting through said slot, forming and a bearing for isolating said bolt from contact with the edges of the face plate.

2. A latch case comprising in combination a base plate, a face plate therefor provided with a slot, a reciprocating latch bolt, a one piece cover for said bolt, the walls of which cover project between the top and side walls of the slot and provide the bearings accordingly directing the bolt through the face plate.

3. A latch case comprising in combination a base plate, a face plate integral therewith provided with a slot, a latch bolt adapted to reciprocate therethrough, a cover projecting through said slot adapted to maintain said bolt in frictional contact with the base plate, said cover being provided with bearing surfaces directing the bolt through the face plate free from contact with the walls thereof.

4. A latch case comprising in combination a base plate, a face plate integral therewith provided with a slot, a reciprocating latch bolt adapted to be projected through said slot, a reinforcing plate, means for securing said plate to the base plate, a cover for the bolt integral with said reinforcing plate and adapted to direct said bolt through the slot in the absence of the contact with the walls of the slot.

5. A latch case comprising in combination a base plate, a face plate bent therefrom provided with a slot through which to project a reciprocating latch bolt, a reinforcing plate therefor, provided with means for securing it to the base plate against accidental detachment, a cover for the bolt integral with the reinforcing plate, the walls of which cover project between the walls of said slot, and are adapted to maintain the bolt in contact with the base plate, and the bearing surfaces of the cover.

6. A latch case comprising in combination a base plate, a face plate therefor provided with a slot through which to project a reciprocating latch bolt, an attachable cover, the walls of which are bent to form and at one end are confined by and between the walls of the slot in the face plate, said covering being provided with a closure at its opposite end bent therefrom.

7. A latch case bent from two rectangular sheet metal blanks, one of which is provided with a slot for the passage of a bolt therethrough, and with notches in its opposing side edges, and the other provided at one end with a projection the width of which equals the outer and opposing side walls of said slot, and the other edge with an opposing tongue, the side edges of which blank are provided with parallel slits forming opposing tongues and with parallel elongated slots substantially as and for the purposes described.

8. A latch case comprising a base plate, a face plate therefor, provided with a slot, a reciprocating latch bolt adapted to be projected through the slot, a liner angular in cross section projecting through said slot provided with a bearing surface for the latch bolt, which said liner projects through the walls of the slot and prevents the wearing away of the latter.

9. A latch case comprising a base plate, a face plate therefor, provided with a slot, a reciprocating latch bolt adapted to be projected through said slot, and means projecting between the walls of the slot providing bearing surfaces for said bolt whereby the bolt is isolated from wearing contact with the walls of the slot.

In witness whereof, I have hereunto set my hand and affixed my seal, this 28th day of April, A. D. 1915.

WILLIAM H. APPLEBY. [L. S.]

Witnesses:

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JNO. G. ELLIOTT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."