Aug. 2, 1938. W. R. SCHLAGE 2,125,655

LATCH BOLT AND RETRACTOR BAR STRUCTURE

Filed Feb. 24, 1937

Fig. 1.

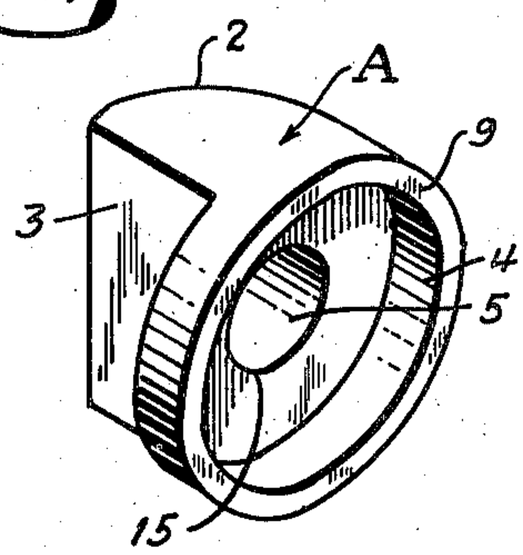


Fig. 2.

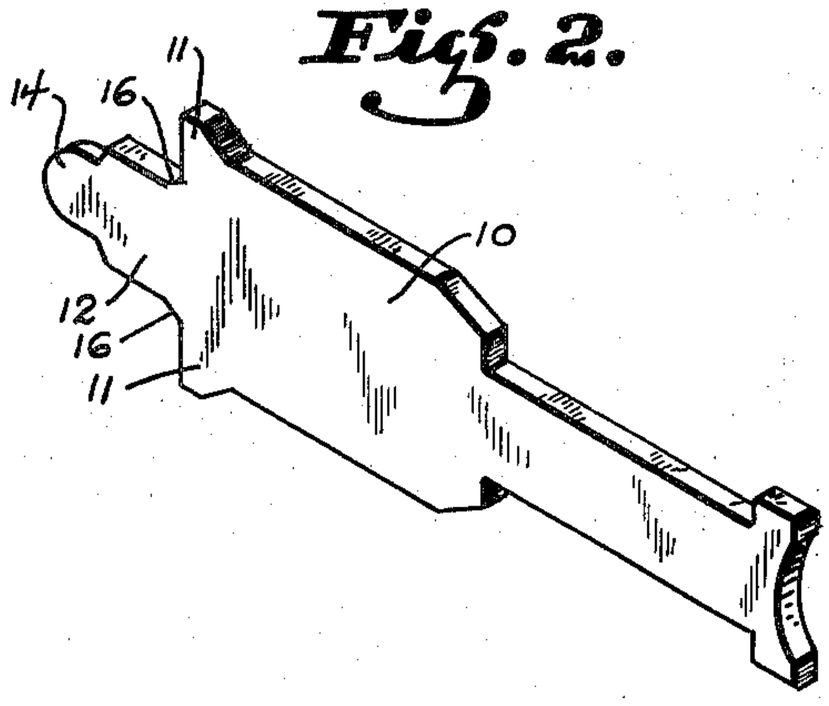


Fig. 3.

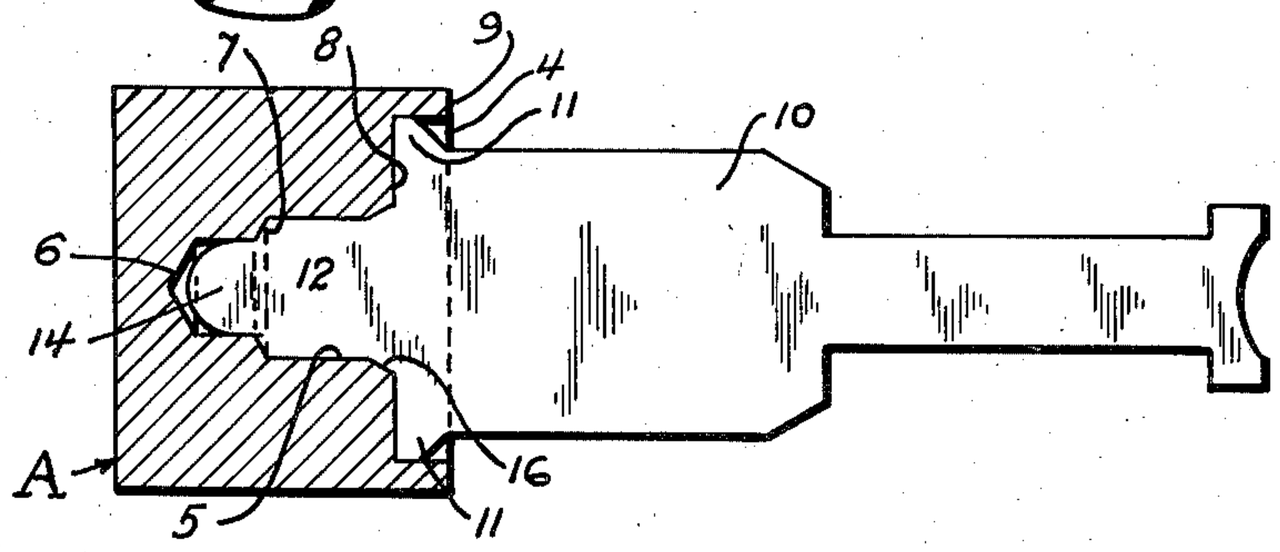
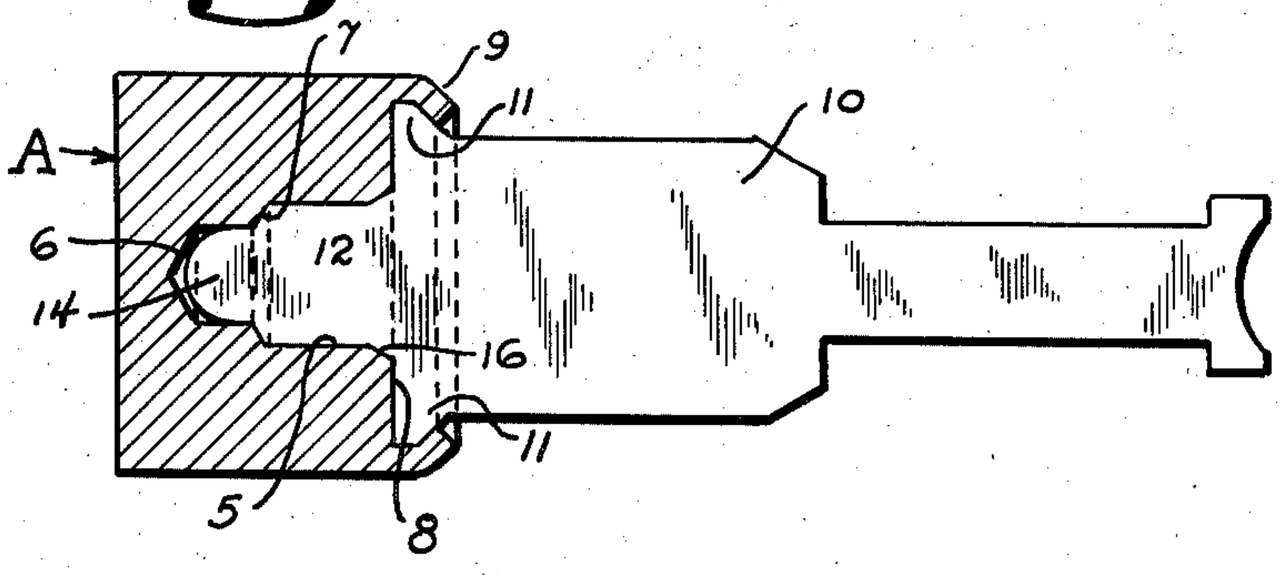


Fig. 4.



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LATCH BOLT AND RETRACTOR BAR STRUCTURE

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Application February 24, 1937, Serial No. 127,463

4 Claims. (Cl. 292—2)

This invention relates to a latch bolt and a retractor bar, and especially to a construction and a shaping of the two whereby they may be readily, permanently and rigidly connected.

The object of the present invention is to generally improve and simplify the construction and operation of structures of the character described; to provide a structure which makes it possible to produce an assembled latch bolt and retractor bar made from different materials; and further, to provide a structure of the character described in which the only machine operations required will be milling, drilling, and stamping, thus making it possible to turn out the parts in automatic machines and then to assemble the parts in a press.

The construction and assembling of parts is shown by way of illustration in the accompanying drawing in which

Fig. 1 is a perspective view of the latch bolt;

Fig. 2 is a perspective view of the retractor bar;

Fig. 3 is a side elevation in section showing the first operation of assembling the latch bolt and retractor bar; and

Fig. 4 is a sectional side elevation similar to Fig. 3 showing the two parts assembled.

Referring to the drawing in detail, and particularly Figs. 1 and 3, A indicates the latch bolt which may be made from brass, bronze or similar material. Different material in bar form, and in this instance round in cross-section, is fed into a milling machine which mills a beveled surface such as indicated at 2, a flat surface 3, and then cuts it off. The cut off parts are delivered to a drill press or a similar machine, and one end is drilled or bored out to form three annular concentric chambers or depressions 4, 5 and 6, a pair of shoulders such as indicated at 7 and 8, and an annular rim or flange 9.

The retractor bar is made from flat steel or like material, and is punched out in a punch press. In this operation, the bar is cut to form a main body 10, a pair of lugs 11 and centering extensions 12 and 14.

The two parts when completed are assembled as shown in Fig. 3 with centering extensions 12 and 14 entering the respective annular chambers 5 and 6; the lugs 11 enter chamber 4, said lugs engaging the shoulder 8, and the inner end of the centering member 12 the shoulder 7. With the parts thus assembled, it is only necessary to spin or press the flange 9 inwardly as shown in Fig. 4, and thereby complete the assembling.

In Fig. 1 it will be noted that a sharp shoulder is formed at 15 between the recesses 4 and 5, and that angular fillets 16 are formed at the inner ends of the lugs 11. This is of considerable importance, as when endwise pressure is brought to bear on the retractor bar during the operation of spinning or forcing the flange 9 inwardly, the fillets 16 will cut into the shoulder 15 and form depressions therein of sufficient depth to prevent turning of the latch bolt with relation to the bar, or vice versa, thereby securing the two parts against rotation with relation to each other, flange 9 at the same time securing the parts against endwise removal.

By this construction, two parts of different shape and different metal are readily, permanently and rigidly secured with relation to each other. The manufacturing operations are simpler and lend themselves to automatic machine production, and as assembling of the parts is equally simple, actual cost is reduced to a minimum without sacrifice in strength, quality or durability.

While this and other features of the present invention have been more or less specifically described and illustrated, I wish it understood that changes may be resorted to within the scope of the appended claims, and that the materials and finish of the materials employed may be such as the manufacturer may decide, or varying conditions or uses may demand.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a structure of the character described a latch bolt having a plurality of annular recesses of increasing depth formed in one end thereof, a flat retractor bar, projections on one end of the bar extending into said recesses, a pair of lugs on the bar also projecting into one of the recesses, and an annular flange on the latch bolt turned over the lugs to secure the bar and the latch bolt against endwise separation.

2. In a structure of the character described a latch bolt having a plurality of annular recesses of increasing depth formed in one end thereof, a flat retractor bar, projections on one end of the bar extending into said recesses, a pair of lugs on the bar also projecting into one of the recesses, an annular flange on the latch bolt turned over the lugs to secure the bar and the latch bolt against endwise separation, and other means securing the latch bolt and bar against rotation with relation to each other.

3. In a structure of the character described a latch bolt having an outer, an inner and an intermediate recess formed in one end thereof, said

recesses being annular in form and opening one into the other, a shoulder formed between the outer and the intermediate recess, said shoulder presenting a sharp inner annular edge, a flat retractor bar having projections on one end extending into the inner and the intermediate recess, a pair of lugs on the bar resting on the shoulder formed between the intermediate and outer recesses, an angular fillet formed on the bar at the inner end of each lug, said fillets cutting into and forming recesses in the sharp annular inner edge of the shoulder to secure the bar and latch bolt against rotation with relation to each other, and an annular flange on the latch bolt turned over the lugs and securing the bar and latch bolt against endwise separation.

4. In a structure of the character described a latch bolt composed of solid material and having a round hole formed therein substantially centrally and longitudinally thereof, said hole terminating short of the front end of the bolt, a retractor bar composed of flat material and having a reduced end portion to fit and enter the round hole in the bolt, a seat at the rear end of the bolt, said seat having a sharp edge around the hole and a flange around the outer edge of the seat, means on the bar cutting into the sharp edge around the hole and securing the bar against rotation with relation to the bolt, and a pair of lugs on the bar engaging the seat, said flange being turned over the lugs and securing the bar against longitudinal removal from the bolt.

WALTER R. SCHLAGE.