Dec. 23, 1930. C. L. PHILLIPS 1,786,221

BURGLARPROOF KEY BOLT

Filed Nov. 8, 1928

Fig. 1.

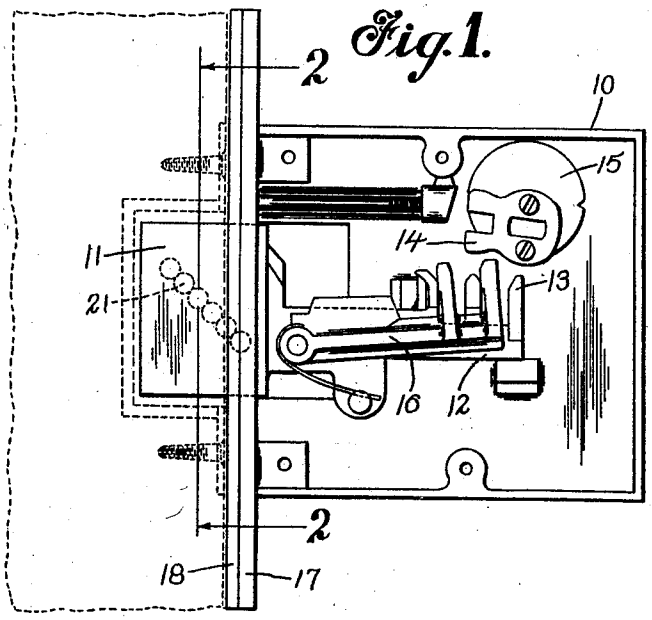


Fig. 2.

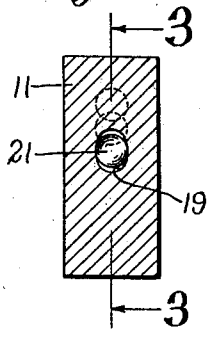
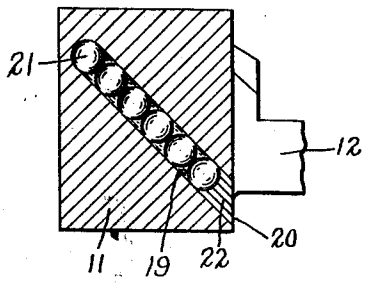


Fig. 3.



Inventor

Clayton L. Phillips

By Rockwell & Barthelow

Attorneys

Patented Dec. 23, 1930 1,786,221

UNITED STATES PATENT OFFICE

CLAYTON L. PHILLIPS, OF HAMDEN, CONNECTICUT, ASSIGNOR TO SARGENT & COMPANY, OF NEW HAVEN, CONNECTICUT

BURGLARPROOF KEY BOLT

Application filed November 8, 1928. Serial No. 317,953.

This invention relates to lock bolts, and more especially to what is ordinarily called a dead bolt or key bolt, although it is also applicable to the ordinary beveled latch bolt, and has particular reference to the provision of such a bolt with means which will prevent the lock being rendered ineffective by the cutting or sawing through of the bolt between the door and door jamb.

As is well known, entrance is sometimes gained through a door by means of a hack saw or other similar instrument, which may be inserted in the crack between the door and door jamb, and the bolt may be cut through or at least cut to such an extent that the door may be forced.

It has been proposed to provide in the heads of lock bolts, a hardened steel roller of cylindrical form, and while such a structure afforded considerable resistance to any attempt to cut the bolt in two and was ordinarily effective in preventing the forcing of a lock by the means described, it sometimes occurs that even such a bolt could be rendered ineffective and the invention herein described is particularly designed to be an improvement over such a structure.

One object of this invention is to provide in a bolt head a series of hardened rotatable members which will prevent the bolt being sawed or cut through.

A further object of the invention is the provision of a series of hardened members in a bolt head, arranged in such relation that they overlap in the direction in which the bolt must be sawed or cut, so that it is impossible to cut the bolt at a point between such members.

A still further object of the invention is to provide a series of freely rotatable hardened members in a bolt head, such that if it is attempted to cut through the bolt head by means of a hack saw or similar instrument, the instrument must come in contact with these members and be rendered ineffective thereby.

More specifically the invention resides in the provision of a bolt head formed with a diagonal bore filled with hardened steel rotatable members which extend across that part of the bolt opposite the opening between the edge of the door and door jamb when the bolt is thrown.

To these and other ends, the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawings:

Fig. 1 is a side elevational view of a lock provided with a key bolt, embodying my invention, the cover of the lock being removed;

Fig. 2 is a sectional view through the head of the key bolt on line 2—2 of Fig. 1, and

Fig. 3 is a sectional view on line 3—3 of Fig. 2.

In the preferred embodiment of my invention which I have chosen to illustrate, I have shown a lock case 10, provided with a sliding bolt having a head 11 and stem 12, the latter being provided with talons 13, designed to be engaged by the roll-back 14 of a lock 15, to retract and protract the bolt. A tumbler 16 is pivoted to the bolt stem 12 in the usual manner. As the parts heretofore described may be of any usual and well known construction, a description of further details thereof is believed to be unnecessary.

As shown more especially in Figs. 2 and 3, the bolt head 11 is so formed that it will be impossible to cut through the bolt with a hack saw or like instrument on the line between the face plate 17 of the lock and the strike plate 18 upon the door jamb, or in other words, between the edge of the door and the edge of the door jamb where there is usually a sufficient crack through which such an instrument may be inserted.

To effect this end, I provide in the bolt head 11 a diagonally arranged bore 19 which may be formed by a drill or suitable instrument entering the bolt head at the rear face 20 thereof. This bore extends in a direction inclined to the horizontal and with respect to a vertical plane it extends substantially parallel to the bolt axis.

Within the bore 19 are loaded a number of hardened elements designed to resist the action of a cutting tool. In the present instance, these elements consist of a number of hardened steel balls or spherical members 21.

The bore 19 may then be plugged at its open end, as shown at 22, leaving the spherical members free to rotate although they will preferably be held in fairly close engagement with each other, and in any event will lie in contact due to the action of gravity.

It will be apparent that the hardened resisting members 21, in the form shown, will be freely rotatable in all directions and if an attempt is made to saw through the bolt head the saw blade upon striking these members will be deflected and rendered ineffective. Tests have shown that the saw blade under such conditions will be mutilated and ruined and the attempt to cut through the bolt will be effectually defeated.

Moreover, by arranging these resisting members in an inclined direction with respect to a horizontal plane, it will be seen that they overlap with respect to a vertical plane drawn through the bolt, so that no matter at what point the attempt to cut through the bolt may be made, the instrument will always strike one of these members and cannot pass between them.

It will be obvious that I have provided an especially effective means to prevent the sawing through of a bolt head, and while I have shown and described a preferred embodiment of my invention, it is to be understood that it is not limited thereto in all of its details but is capable of modification and variation within the spirit of the invention and within the scope of the appended claims.

What I claim is:

1. In a lock, a bolt head having a pocket in an intermediate part thereof and a plurality of hardened resisting elements arranged in a row in said pocket, said elements being overlapped with respect to a transverse plane through the bolt head.

2. In a lock, a bolt head having a pocket formed therein and a series of freely rotatable hardened members mounted in said pocket, said members being disposed in a row or series across the intermediate part of the head, said members overlapping with respect to a transverse plane through the head.

3. In a bolt, a bolt head having a bore or pocket provided therein extending in a direction inclined with respect to the longitudinal axis of the bolt, and a series of hardened steel members arranged in said bore in close juxtaposition.

4. In a bolt, a bolt head having a bore or pocket provided therein extending in a direction inclined with respect to the longitudinal edge of the head, a set of hardened steel balls arranged in said bore in close juxtaposition.

5. In a lock, a bolt having a head, said head being provided with a bore entering the head through the rear face thereof and arranged in an inclined direction with respect to the longitudinal axis of the bolt, a row of hardened spherical elements disposed in said bore in close juxtaposition, and means for closing the end of said bore at the rear face of the bolt head.

6. In a bolt, a bolt head having a bore or pocket provided therein extending in a direction inclined to the longitudinal axis of the bolt, and a series of hardened rotatable members arranged in said bore and held in contact by the action of gravity.

7. A bolt having a head and a plurality of hardened resisting members rotatably mounted in said head, said members being arranged in staggered relation whereby they overlap each other with respect to a transverse plane through the bolt head.

8. A bolt having a head and a plurality of hardened resisting members rotatably mounted therein, said members being arranged in a series across the intermediate part of the bolt head, and said series being disposed in an inclined direction relatively to a transverse plane through the head whereby the members lie in overlapping relation.

In witness whereof, I have hereunto set my hand this 24th day of October, 1928.

CLAYTON L. PHILLIPS.