July 28, 1931. H. LANDE 1,816,259

LOCK

Filed April 24, 1929

Fig. 1

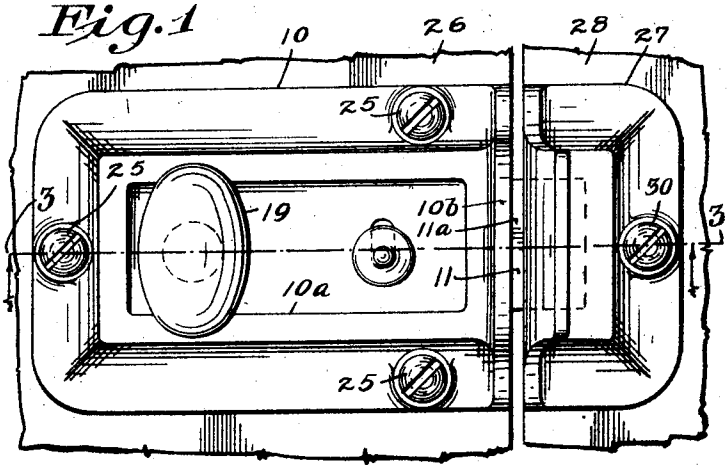


Fig. 2

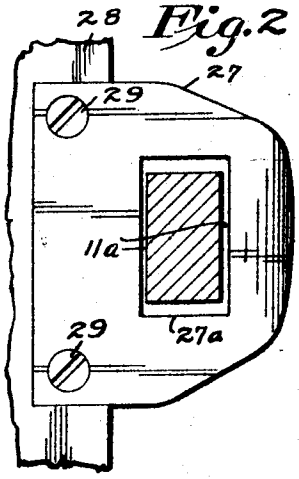


Fig. 3

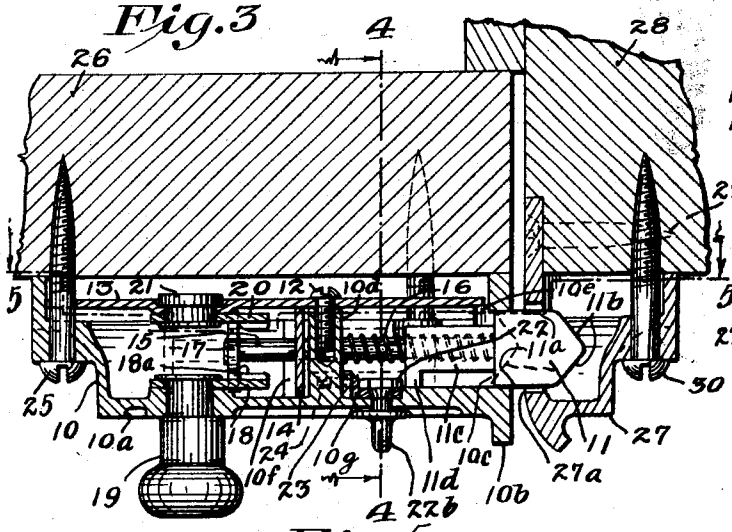


Fig. 4

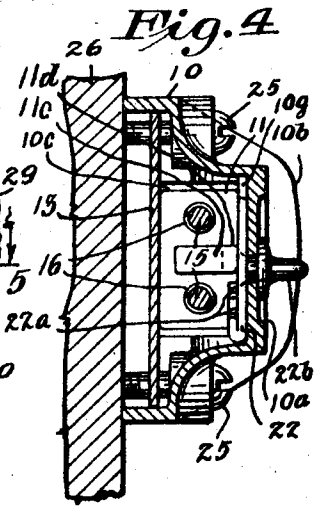
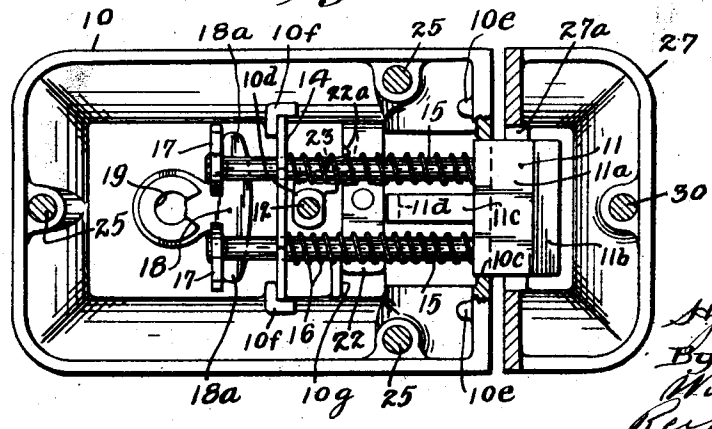


Fig. 5



Inventor

Hjalmar Lande

By his Attorneys

Williamson

Peirce & Williamson

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UNITED STATES PATENT OFFICE

HJALMAR LANDE, OF MINNEAPOLIS, MINNESOTA

LOCK

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This invention relates to a lock and particularly to a lock of the night latch type. Such locks are now used in immense numbers, principally on the doors of rooms in hotels and residences. In the common form of night latch the bolt of the lock which is spring pressed outward to engage the keeper is beveled at one side substantially throughout its length to provide a cam surface for engaging the keeper. One objection to this type of lock is that when it is closed a thin implement, such as a knife blade can be inserted at the edge of the keeper and pressed against said inclined surface or cam surface to cause the bolt to move into the lock. The door can thus be opened without a key. Another objection to the common type of night latch is that it cannot be placed in right or left positions and in position at either side of a door to open in either direction. The lock is usually adaptable for two positions, but if it is to be used in other positions it is necessary to take out the bolt and reverse the bolt in the lock casing.

Such night latch locks are usually provided with a lock or holding means which holds the bolt in retracted position. The bolt usually has a lug engaged by this locking means for holding it in retracted position and due to the fact that the bolt is sometimes necessarily reversed, two of these lugs are provided projecting at opposite sides of the bolt.

It is an object of this invention to provide a lock of the night latch type having a bolt which has flat parallel surfaces at its sides each of which is beveled at its outer end to form an outwardly inclined cam surface, said cam surfaces meeting in an edge substantially at the center of said bolt, said flat portions being constructed and arranged to extend some distance into the keeper so that said inclined surfaces or cam surfaces cannot be reached with a knife so as to cam back the bolt.

It is another object of the invention to provide a lock of the night latch type having a spring pressed bolt with both sides beveled to form cam surfaces meeting in an edge substantially at the center of the bolt at its outer end whereby the lock can be disposed in right or left positions at either side of a door and the bolt will not have to be reversed.

It is a further object of the invention to provide a lock of the night latch type as set forth in the preceding paragraph in which the bolt has a lug only at one side adapted to be engaged by means for holding the bolt in retracted position whereby one lug accomplishes all of the functions previously accomplished by two lugs.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings, in which like reference characters refer to similar parts throughout the several views, and in which:—

Fig. 1 is a view in front elevation of the lock;

Fig. 2 is a view in side elevation of the keeper showing the bolt in section therein;

Fig. 3 is a horizontal section taken substantially on line 3—3 of Fig. 1 as indicated by the arrows;

Fig. 4 is a vertical section taken on line 4—4 of Fig. 3 as indicated by the arrows, and

Fig. 5 is a vertical section taken on line 5—5 of Fig. 3 as indicated by the arrows.

Referring to the drawings, a lock is shown comprising a casing 10 substantially rectangular, the corners being rounded at one end, said casing being hollow and tapering upwardly at three sides to a comparatively flat topped surface 10*a*. The said casing has an end flange 10*b* at its end adapted to be disposed adjacent the keeper. The casing 10 has an opening 10*c* at one end in which is slidable a bolt member 11. Bolt member 11 is rectangular in vertical cross section thus having flat parallel sides 11*a* for the greater portion of its length, the said sides being beveled to provide outwardly inclined cam surfaces 11*b* which meet in an edge at the outer end of the lock substantially at the central portion thereof, said edge, as shown, extending vertically. Bolt 11 has a rearwardly projecting portion 11*c* also rectangular in vertical cross section, said portion having at one side, shown as the top side, a lug 11*d* for a purpose to be later described. Cas-

ing 10 has a downwardly projecting lug 10*d* tapped at its end to receive a headed screw 12 which holds in place a closing bottom plate 13 resting on lug 10*d* and a plurality of small lugs 10*e* disposed about the edge of casing 10. Casing 10 also has extending downwardly therein, but terminating short of the end of lug 10*d* lugs 10*f* having right angle recesses therein facing each other and forming abutments for a plate 14 which extends therebetween. Bolt 11 has rigidly secured thereto a pair of parallel rods 15 which extend in the casing 10 and pass through openings in plate 14 in which they are slidable, compression coiled springs 16 surrounding rods 15 and arranged to be compressed between bolt 11 and plate 14. Rods 15 have secured to their rear ends small plates 17 which extend down into casing 10 and are adapted to be engaged at their bottoms by the arms 18*a* of a bolt operating plate 18 carried on the knob 19 journaled in the top of casing 10 and extending outwardly therefrom. Another plate 20 is provided similar in shape to plate 18 which is carried on a member 21 journaled in plate 13 and adapted to be turned by a key. Casing 10 is provided with a small rectangular guideway 10*g* in which is slidable a small rectangular plate 22. Plate 22 has a pair of notches 22*a* in its side adapted to be engaged by a small pointed pawl 23 seated in a recess in lug 10*d* and normally urged outward by a small compression spring 24. Slide 22 has a handle or operating member 22*b* projecting through a slot in the top of casing 10 by which it is movable vertically. As shown in Figs. 3 and 4, plate 22 has a thickened portion adapted to be moved into alignment with the lug 11*d* so that said lug will engage said thickened portion. In the embodiment of the invention illustrated said thickened portion is formed by bending the plate reversely upon itself. Casing 10 at its edge portion is provided with holes adapted to receive the screws 25 adapted to enter the door 26 and hold the lock in position. A keeper 27 is provided having a flange adapted to be seated in a door jamb 28 and held therein by screws 29, said keeper having a hollow portion with an opening 27*a* extending therethrough, said opening being rectangular in shape adapted to receive the bolt 11. Keeper 27 also has a hole at its outer portion adapted to receive a screw 30 extending into the side of the door jamb.

In operation the lock will be mounted on the door 26 as shown, in relation to keeper 27 as shown. The lock can be operated to withdraw the bolt and open the door by turning knob 19 which will actuate plate 18 to engage one of the plates 17 and move the rod 15 connected thereto. As rod 15 is connected to bolt 11, said bolt will be retracted. It will be seen that whichever way knob 19 is turned the bolt will be retracted. The plate 20 can also be oscillated to withdraw the bolt by a key inserted in member 21. The opening through the door or the guide for the key is not shown. When the door closes the surfaces 11*b* on the bolt will engage the curved face of keeper 27 and the bolt will be cammed in and when it reaches the position opposite the opening 27*a*, the same will be forced outwardly by springs 16 and the bolt will seat in the keeper. When the bolt is pushed back, either by the keeper or by knob 19 or a key, springs 16 are compressed between the bolt and plate 14 so that the bolt will be projected outwardly as soon as released. By having both sides of the bolt beveled the lock can be placed on either side of a door or on a door opening in either direction and a universal lock will thus be produced which will fit any of these positions. It will be unnecessary to remove the bolt and reverse its position as has been done in locks of the prior art. When it is desired to hold the bolt in retracted position it will be moved back by knob 19 and handle 22*b* will be slid upwardly in the casing thus bringing the thickened portion of slide 22 in front of lug 11*d* which is now at the inner side of slide 22. The bolt thus is held in retracted position. Bolt 11 can be locked in projected position by moving handle 22*b* and slide 22 upwardly. On account of the universal application of applicant's lock, it is only necessary to have one lug 11*d* which is at one side of the bolt. Slide 22 is held in either of its positions by the spring pawl 23. It can be moved to cause the pawl to cam back out of the notch, said pawl engaging the next notch when the same is brought into alignment therewith. It will be noted that when the bolt is in the keeper as shown in Fig. 3 it will be impossible to insert a knife between the front of flange 10*b* and the keeper to press against the beveled end of the keeper. The flat surfaces 11*a* extend too far into the keeper for the cam surfaces to be accessible. It will thus be impossible to open the lock by thus pressing against the surfaces 11*b* and camming back the bolt.

From the above description it is seen that applicant has provided a very simple and efficient structure of lock and one which overcomes some serious objections to the locks of the prior art. The lock comprises no more parts than the prior locks and in fact has a lesser number of parts. The device has been amply demonstrated in actual practice and found to be very successful and efficient.

It will, of course, be understood that various changes may be made in the form, details, proportions and arrangement of the parts, without departing from the scope of applicant's invention, which, generally stated, consists in a device capable of carrying out the objects above set forth, in the novel parts and combinations of parts dis-

closed and defined in the appended claim.

What is claimed is:—

A night latch lock having in combination, a casing provided with a rectangular bolt passage on the front end thereof, a bolt comprising an integral member substantially rectangular in cross section and having parallel unrecessed sides, said sides converging at the outer end of the bolt to provide a pair of symmetrical camming surfaces, a keeper having a rectangular recess into which said bolt is received, the parallel surfaces of said sides extending into said keeper for some distance from its outer edge, resilient means forcing said bolt to its outer position, means for moving said bolt inwardly, means for limiting the outer position of said bolt, said bolt having a diminished rearward projection provided with a single laterally disposed lug, a locking element slidable in said casing and adapted to be moved to engage said lug both when said bolt is disposed outwardly and when said bolt is moved to rearward position, said device being adapted for use in reverse position without removal or reversal of said bolt.

In testimony whereof I affix my signature.

HJALMAR LANDE.