No. 770,542. PATENTED SEPT. 20, 1904.

S. R. SLAYMAKER.

NIGHT OR DEAD-LOCK LATCH.

APPLICATION FILED MAY 26, 1903.

NO MODEL.

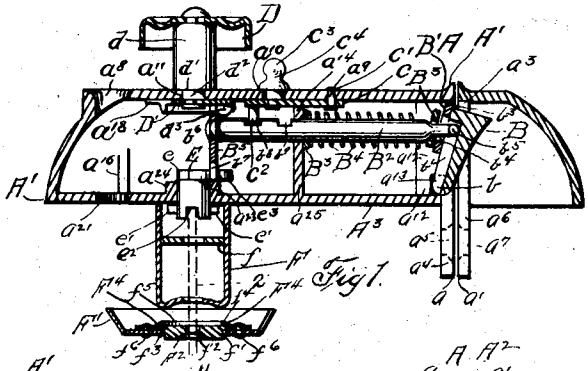


Fig. 1.

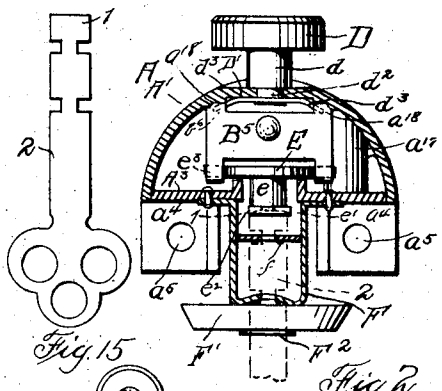


Fig. 2.

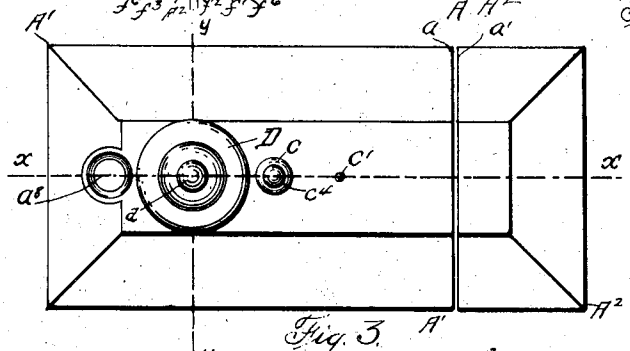


Fig. 3.

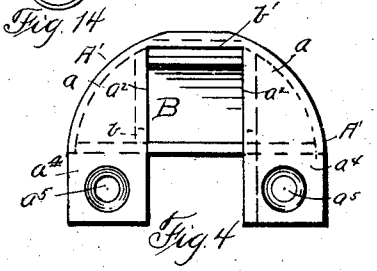


Fig. 4.

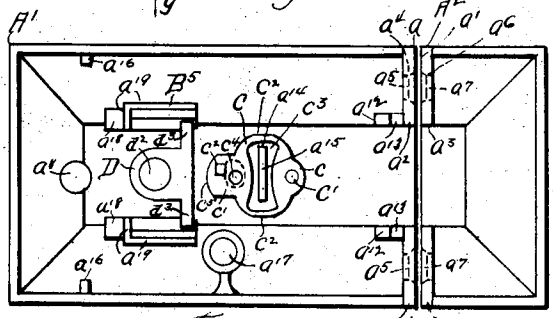


Fig. 5.

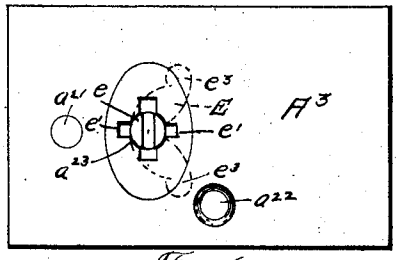


Fig. 6.

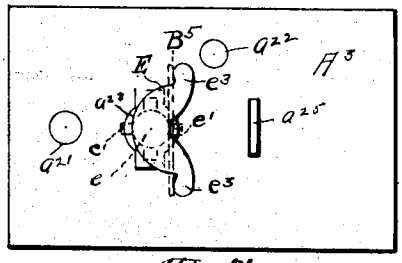


Fig. 7.

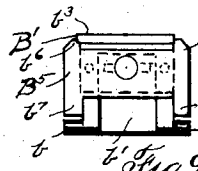


Fig. 9.

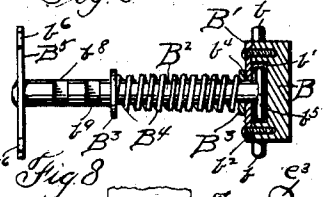


Fig. 8.

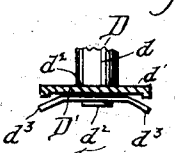


Fig. 13.

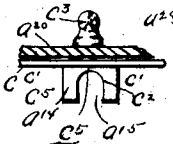


Fig. 12.



Fig. 11.



Fig. 10.

Witnesses

Inventor

Samuel R. Slaymaker.

By

Frank H. Herr, Attorney

No. 770,542. Patented September 20, 1904.

UNITED STATES PATENT OFFICE.

SAMUEL R. SLAYMAKER, OF LANCASTER, PENNSYLVANIA.

NIGHT OR DEAD-LOCK LATCH.

SPECIFICATION forming part of Letters Patent No. 770,542, dated September 20, 1904.

Application filed May 26, 1903. Serial No. 158,840. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL R. SLAYMAKER, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Night or Dead-Lock Latches; and I 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.

This invention relates to improvements in a night or dead-lock latch of that class in which a triangular end or practically wedge-shaped bolt-head or latch is arranged within an opening in one end of an approved casing and so pivoted that the wider end or edge thereof will swing out and in through said opening to become engaged with or disengaged from the required keeper, latching or unlatching the same, in which is a longitudinally-arranged rod, moving always in a horizontal plane, said rod having one end pivoted to the bolt-head and its other end carrying a plate engaged by the ears of dogs, respectively operated by a key or a turnbutton, whereby said head is withdrawn into said casing, and in which a spring mounted on said rod is adapted to move or swing the head outwardly therefrom.

The object of the invention is the construction of a simple but effective night or dead-lock latch in which the pivoted bolt-head and the bolt-head-moving rod, with its spring and dog-ear-engaged-plate, are all held in operating positions by a bottom plate secured to the casing by one screw.

The elements of the invention will severally and at large appear in the following description, and they will be separately or combinedly set forth or pointed out in the appended claims.

The purposes of the invention are attained by the mechanism, devices, and means illustrated in the accompanying drawings, with similar reference characters designating like parts throughout the several views, in which—

Figure 1 is a longitudinal vertical section, taken on the line $x\ x$ in Fig. 3, of a night or dead-lock latch embodying the invention; Fig. 2, a sectional elevation taken on the line $y\ y$ in Fig. 3 and viewed from the left; Fig. 3, a top view of Fig. 1 as it appears when completed; Fig. 4, an elevation of the casing, showing the bolt-head in latched position within the end opening thereof; Fig. 5, inverted plans of the casing and keeper with the bottom plate of the casing removed, showing the turnbutton-operated bolt-head-withdrawing dog and the bolt-rod-locking plate in position thereon. Figs. 6 and 7, respectively, show the outer and inner surfaces of the detached bottom plate with the key-operated bolt-head-withdrawing dog in position thereon and the change-disk tube removed in Fig. 6; and Figs. 8 to 15, both inclusive, show details and combinations of elements used in the construction.

In the drawings, A designates a completed night or dead-lock latch embodying the elements of the invention, of which A′ designates the casing housing or supporting the working parts, and A^2 the keeper holding the pivoted bolt-head when it is outwardly swung or in latched position. The casing A′ is practically a hollow rectangular shell of approved dimensions with two rounded side walls and a rounded end wall, the three merging into a flat or level top or covering wall and having a perpendicular wall a at the other end thereof. The keeper A^2 is a similarly-formed shell of the required dimensions, having two rounded side walls and a rounded end wall, all merging into a flat or level top or covering wall and having a perpendicular wall a' at the other end thereof. In the wall a of the casing is formed an opening a^2, through which the pivoted bolt-head swings, and in the wall a' of the keeper is formed an opening a^3 to receive said bolt-head when it is swinging outwardly. On the sides of the opening a^2 and projecting downwardly from the wall a are formed ears a^4, provided with orifices a^5, and on the sides of the opening a^3 and projecting downwardly from the wall a' are formed ears a^6, provided with orifices a^7, said ears a^4 a^6 being adapted to be recessed into the edges of doors or jambs where the casing and the keeper are to perform their functions, and said orifices a^5 a^7 are adapted to receive screws (not shown) to secure said ears in place, whereby the latch end of the

casing and the keeper are secured in position, while on the rounded end of the casing in the plane of the level top is formed a boss or projection provided with an orifice a^8, through which a screw (also not shown) serves to secure the rounded end of the casing in place. At prescribed points in the longitudinal center line and through the level top are formed an orifice a^9, a circularly-placed oblong slot a^{10}, and a circular aperture a^{11}, through which elements yet to be described perform their functions.

Within the casing and adjacent to the sides of the end opening a^2 are erected standards a^{12}, adapted to support on their free ends the forward end of a bottom-closing plate yet to be described and having in said free ends notches a^{13} to be engaged by pivot-studs of the bolt-head or latch before mentioned. Practically midway between the orifice a^9 and the slot a^{11} is erected a standard a^{14} of a prescribed height and having in its free end a U-shaped notch a^{15} to have seated therein a bolt-head or latch moving rod yet to be described. Well toward the rounded end wall and projecting from the concaved surfaces of the side walls are erected rib-standards a^{16} to uphold the rear end of the before-mentioned bottom-closing plate. Practically midway of the casing and projecting from one of said side walls is erected a standard or cylindrical column a^{17}, supporting said bottom-closing plate at this point and having a screw-threaded axial bore to be engaged by a screw securing the plate, while at prescribed points adjacent to the side edges of the level wall and projecting from the concaved surfaces of the side walls are formed slightly-raised platforms or ledges a^{18}, provided with side ridges and rear end cross-ribs a^{19}, constituting guideways for the passage of a bolt-head or latch withdrawing plate yet to be described, and at prescribed points in the inner surface of the level wall are formed notches or V-grooves a^{20} to be engaged by a lip or ridge projecting from the adjacent surface of a bolt-head locking and unlocking plate yet to be described. Closing the open bottom of the casing is a prescribed plate A^3, with its edges engaging against the inner sides of the casing-walls and resting on the standards a^{12}, the rib-standards a^{16}, and the column a^{17}. At prescribed points the plate is provided with orifices a^{21} a^{22}, the first in axial line with the orifice a^8 for the passage of the casing-securing screw and the second registering with the axial bore of the column a^{17} to be engaged by the plate-securing screw, both screws before mentioned. At a point in axial line with the aperture a^{11} through the plate is formed an aperture a^{23}, provided with side extensions and surrounded by a bridge-wall a^{24} for rotatably seating a key-operated bolt-head-withdrawing dog yet to be described, and at a point in line with the standard a^{14} on the plate is erected a wall a^{25} to engage on the ears of the U-shaped notch a^{15} of said standard.

Within the opening a^2 of the casing is arranged a bolt-head or latch B of prescribed dimensions and somewhat wedge-shaped in form, having a rounded narrow edge or ridge provided at the ends thereof with side gudgeons or trunnion-studs b, which are seated in the standard-notches a^{13}, pivoting said bolt-head or latch, so that the wider end or edge thereof opposite the ridge may freely swing or turn out or in through said opening into engagement with or disengagement from the latch-holding part of the keeper. The outer surface of the bolt-head is slightly hollowed out or concaved for easy engagement with the adjacent edge of said holding part when latching, and the wider edge is inwardly lowered, reducing the slope thereof, and thereby minimizing the liability to slip from the holding edge of the keeper, while in its inner side is formed a recess b' to be engaged by the pivoting-bar of a bolt-head-moving rod yet to be described. To the inner surface of the bolt-head is secured, as by screws b^2, a prescribed plate B′, which extends over the width of the head and beyond the swinging end thereof to form a projecting lip b^3, closing the space between said end and the level wall of the casing when the head is outwardly swung. At the center of the plate is formed an orifice b^4, through which before the plate is secured in place is passed the rearward end of the stem or shaft of a bolt-head operating or moving rod B^2, having at its forward end a cross or T bar b^5, which engages against the plate and is seated within the recess b' when the plate is secured in place, as above mentioned, serving to pivot said rod and bolt-head together, while toward its rearward end the body of the rod is seated in the U-shaped notch a^{15} of the standard a^{14} to be movable back and forth therein. Mounted on the body of the rod are two washers B^3, with a coiled spring B^4 therebetween, the one washer engaging against the plate B′ and the other against the standard a^{14}, and the spring, by reason of its resiliency lengthwise and outwardly exerted, serving to swing said bolt-head forward into engagement with the latch-keeper. To the rearward end of the rod is rigidly secured, as by riveting, a bolt-head-withdrawing plate B^5, somewhat H-shaped in form, with its branches b^6 riding on the ledges a^{18}, adapted to be engaged by the side ears of the withdrawing-dog operated by the turnbutton before mentioned and its branches b^7 adapted to be engaged by the end ears of the key-operated withdrawing-dog, also before mentioned, while in the body of the rod are formed notches or recesses b^8 b^9, respectively, to be engaged by a pin projecting from a locking and unlocking plate before mentioned, but yet to be described.

A bolt-rod locking and unlocking plate C,

having forward and rearward end ears c c', with side extensions c^2 c^2 and a central transversely-oblong aperture c^3, is arranged about the standard a^{14}, projecting through said aperture, the plate being pivoted to the casing by a pin C′ passed through the ear c and through orifice a^9 of the level wall and riveted with the aperture c^3 allowing freedom of motion sidewise of the casing to the plate, while at a prescribed point in the ear c' the plate is provided with a rigidly-secured pin or stud C^2 to engage in the respective rod-notches b^8 b^9, locking the rod so as to hold the bolt-head in either latched or unlatched position. On the outside of the casing is arranged a finger grip button or knob C^3, having a stem c^4, which after passing through the slotted aperture a^{10} has its extremity rigidly secured, as by riveting, to the plate, whereby it is oscillated or rocked to and fro on its pivot, locking or unlocking said bolt-head-moving rod, and the plate on the side adjacent to the inner surface of the level wall is provided with a **V**-ridge c^5 to engage in either of the **V**-grooves a^{20}, before mentioned, holding the bolt-rod so as to either dead-lock the bolt-head when latched or to prevent the latching thereof.

On the outside of the casing is arranged a turnbutton D, provided with an axial stem d, having near its free end a shoulder d' to engage freely on the level casing-wall and from which projects an axial spindle d^2, journaled through the orifice a^{11} and having rigidly secured to its extremity within the casing a bolt-head-withdrawing dog D′, provided with side wings or ears d^3 d^3 to engage against the forward sides of the branches b^6 of the plate B^5, before mentioned, whereby a rotation of the turnbutton in either direction withdraws or unlatches said bolt-head.

Engaging through the aperture a^{23} and on the surrounding bridge-wall a^{24} is arranged crosswise of the casing a bolt-head-withdrawing dog E, having a central stud e, which is journaled in said aperture. The stud is provided with opposite side projecting lugs e' e', perpendicularly alined with reference to the dog, which lugs after passing through the side extensions of the aperture and by engaging against the under side of the plate A^3 serve to hold said dog rotatably in place. In the free end of the stud is formed a cross cut or groove e^2 to be engaged by the end 1 of a key 2 to rotate the dog, and the dog is provided with end ears e^3 e^3 to engage against the forward sides of the branches b^7 of the plate B^5, before mentioned, whereby a rotation of said key in either direction withdraws or unlatches the bolt-head.

On the under side of the plate A^3 and over the dog-stud is erected and rigidly secured the usual key-guide tube F, in which are arranged and secured in place the usual change-disks f, (one only being shown in the drawings,) and over the outer end of the tube is placed and secured in position in any approved manner a keyhole-escutcheon F′, in the center of which is formed a circular orifice f', which is closed by a circular disk-plate F^2, having diametrically disposed a key-slot f^2 and a peripherally-projecting lip or ring flange f^3, engaging a circular recess f^4, formed in the inner edge of a central orifice f^5 in the body of a cradle F^4, which is rigidly secured to the escutcheon, as by rivets f^6.

The invention having been thus ascertained and described and the manner in which its functions are performed fully shown and set forth, what is considered new, and desired to be secured by Letters Patent, is—

1. In a night or dead-lock latch, in combination, a casing having perpendicular end wall with an opening therein and an end-notched standard within the casing, a rear-surface-recessed bolt-head with one edge thereof pivotally supported in said opening, an apertured plate engaging over the recess and secured to the bolt-head, a rod passing through the aperture of the plate with a cross-bar at one end thereof seated in said recess and its other end seated in the end notch of said standard, a spring on the rod with one end engaging said plate and the other end of the spring engaging against the standard, and a **B**-shaped plate rigidly affixed to the free end of the rod, with locking and unlocking means, and with mechanism to withdraw the bolt-head, substantially as described and for the purpose hereinbefore set forth.

2. In a night or dead-lock latch, the combination with a casing having a central **U**-notched standard, a rod-supporting standard and a perpendicular end wall with an opening provided with side bearing-notches adjacent to the bottom of the casing, of a wedge-like bolt-head with a recess therein through its inner surface and end projecting gudgeons at the narrow edge thereof and pivoted in said notches, a plate with an orifice at the center thereof placed over said recess and rigidly secured through said inner surface, a rod with one end slidable in the supporting-standard and the other end engaging through said orifice and having a cross-bar at said latter end engaging in said recess, a spring with a washer at each end thereof on said rod between and engaging against the bolt-head and the standard, with locking and unlocking means and with mechanism to withdraw said bolt-head, substantially as described and for the purpose hereinbefore set forth.

3. In a night or dead-lock latch, the combination with a casing having a perpendicular end wall with an opening therein and provided with side bearing-notches adjacent to the bottom of the casing, of a wedge-shaped bolt-head having a slightly-concaved front surface and a recessed rear side with end projecting gudgeons at the narrow edge thereof and pivoted in said notches, a plate having a central orifice

placed over the recess in said rear side and rigidly secured to said bolt-head, a rod with a T-bar at one end thereof engaging through said orifice and said bar seated in said recess, means for supporting and moving the rod, and means for locking and unlocking the same, with mechanism for withdrawing the bolt-head, substantially as described and for the purpose hereinbefore set forth.

4. In a night or dead-lock latch having a casing as described and an edge-pivoted bolt-head to swing out and in through the opening in the perpendicular end wall thereof, a withdrawing-plate connected to the bolt-head and a plate as described removably secured into its bottom, the combination with said plate having the aperture, a^{23}, with the side extensions and the surrounding bridge-wall, a^{24}, of the bolt-head-withdrawing dog, E, arranged on said wall, said dog having the axial stud, e, journaled through said aperture, the oppositely-disposed side lugs, e' e', engaging against the under surface of the plate, the groove, e^2, in the outer end of the journaled stud, and the end ears, e^3 e^3, adapted to engage on branches of the bolt-head-withdrawing plate, substantially as described and for the purpose hereinbefore set forth.

5. In a night-latch, a casing having a central standard, a swinging bolt-head mounted in the casing, a sliding rod connected to the bolt-head and supported in the standard, a spring encircling the rod between the standard and the bolt-head normally holding the bolt-head advanced, means for retracting the bolt-head, and means engaging the sliding rod for locking the bolt-head in its advanced or retracted position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL R. SLAYMAKER.

Witnesses:

HARVEY B. LUTZ,

DANL. H. HERR.