J. W. WHITAKER.

DOOR LATCH.

APPLICATION FILED FEB. 14, 1914.

1,124,983. Patented Jan. 12, 1915.

Fig. 1.

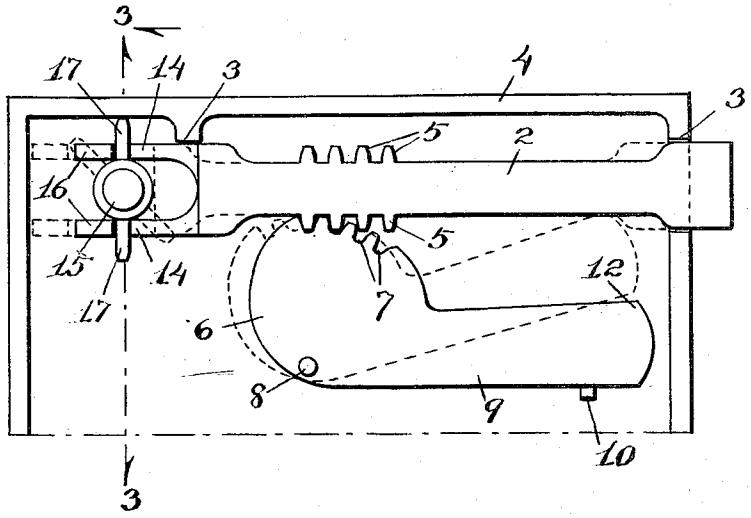


Fig. 2.

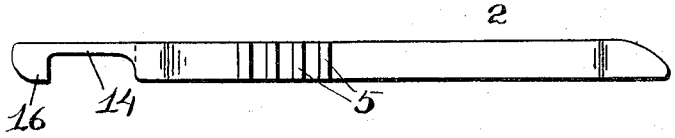
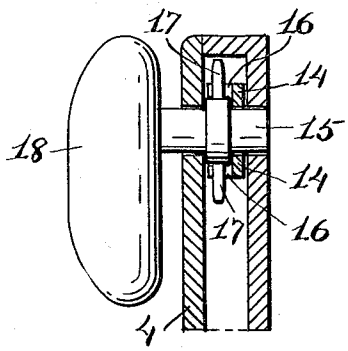


Fig. 3.



Witnesses

Stuart Hilder.

Frances W. Anderson.

Inventor

Joseph W. Whitaker

By E. W. Anderson & Son his Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D.

UNITED STATES PATENT OFFICE.

JOSEPH W. WHITAKER, OF NOBLE, ILLINOIS.

DOOR-LATCH.

1,124,983. Specification of Letters Patent. Patented Jan. 12, 1915.

Application filed February 14, 1914. Serial No. 818,717.

To all whom it may concern:

Be it known that I, JOSEPH W. WHITAKER, a citizen of the United States, resident of Noble, in the county of Richland and State of Illinois, have made a certain new and useful Invention in Door-Latches; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a side view of the invention with one side of the casing removed and the casing partly broken away. Fig. 2 is a detail plan view of the bolt. Fig. 3 is a section on the line 3—3, Fig. 1.

The object of the invention is to provide an improved gravity latch, and the invention consists mainly in the construction and novel combination of parts, as hereinafter set forth.

In the accompanying drawings, a numeral 2 indicates a straight horizontal latch bolt, having rectilinear motion on ways or guides 3 of the door or casing 4. A series of rounded cogs on the underside of the bolt is indicated at 5. A similar series of cogs may be provided on the upper side of the bolt, for reversal. An angle lever having an upwardly directed body portion 6, provided with a curved upper edge tangent to the lower edge of the bolt and having a series of rounded indentations 7, is pivoted at 8, below the latch bolt, to the door or casing, in such wise that one or more of said indentations will engage one or more of the cogs of the latch bolt. The angle lever supports the rear portion of the latch bolt and is provided also with a horizontal arm 9, of sufficient weight to hold the latch bolt in projected position, said arm extending under and parallel to the latch bolt and terminating short of the edge of the door or casing 4. In this position the arm 9 rests upon a stop 10, which is rigidly secured to said door or casing. The pivot at 8 of the angle lever is located at a point near its edge which is most distant from the indentations and from the end of the arm 9, so that, in addition to the weight of the arm 9, nearly all the weight of the body is disposed toward the latching end of the bolt. The indentations of the upper edge of the body portion are curved substantially upon a radius from the pivot at 8, normally commencing at a point vertically above said pivot. The end of the bolt may be beveled, to provide for automatic retraction when the door is closed. The lever arm 9 is provided with an upward projecting part or bearing at 12, which is designed to engage the underside of the latch bolt when the latter has been drawn back to its retracted position, clear of engagement with the edge of the door casing, which should be provided with a wear plate. Usually four cogs are sufficient on the latch bolt, the length of the series being a little greater than the latch movement required, and the distance of the stop bearing 12 from the latch bolt should be about twice the length of this movement, when located as shown at the end of a lever arm a little over twice the length of the body portion at right angles to it.

In order to facilitate the use of the latch in a casing, the rear end of the bolt is designed to be provided with rearwardly extending parallel laterally notched branches 14, one above the other, the interval between them being vertically sufficient for the passage of a knob shaft 15, and sufficiently long to provide for the movement of the latch bolt. Each branch 14 is provided with a lateral end lug 16 in rear of an elongated notch or slide recess to engage projections 17 of the knob shaft. The knob or handle 18 is usually elongated downward, or weighted, in order to cause it to assume through gravitation a normal position in which the projections 17 of its shaft being in the slide recesses are disengaged from the lugs of the latch bolt. The knob is turned in either direction to withdraw the latch bolt, which is automatically moved to engaged position by gravity, the gravitating knob at the same time releasing the lugs of the latch bolt and returning to normal position. When the door is shut the latch is moved to engaged position, while the knob remains motionless.

I claim:

In a gravity latch, a casing, a cogged latch bolt having rectilinear motion and provided with parallel rearward extensions having lateral end lugs, a pivoted right angle lever having an upward projecting portion having a series of indentations of the same radial distance from the pivot engaging the cogs of the latch bolt and a gravity lever arm

at right angles to said upward projecting portion and normally parallel to said latch bolt, a rest stop below the lever arm, a shaft between the extensions of the latch bolt and having projections adapted to engage the end lugs of said extensions, and a gravity knob on said shaft designed to hold said arms in normal position disengaged from said lugs, to permit the forward movement of the latch bolt by the automatic motion of the lever arm.

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

J. W. WHITAKER.

Witnesses:
A. G. WHITE,
ERIC WHITE.

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