No. 666,219. Patented Jan. 15, 1901.

H. W. EICHER.

DOOR LOCK.

(Application filed Apr. 13, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

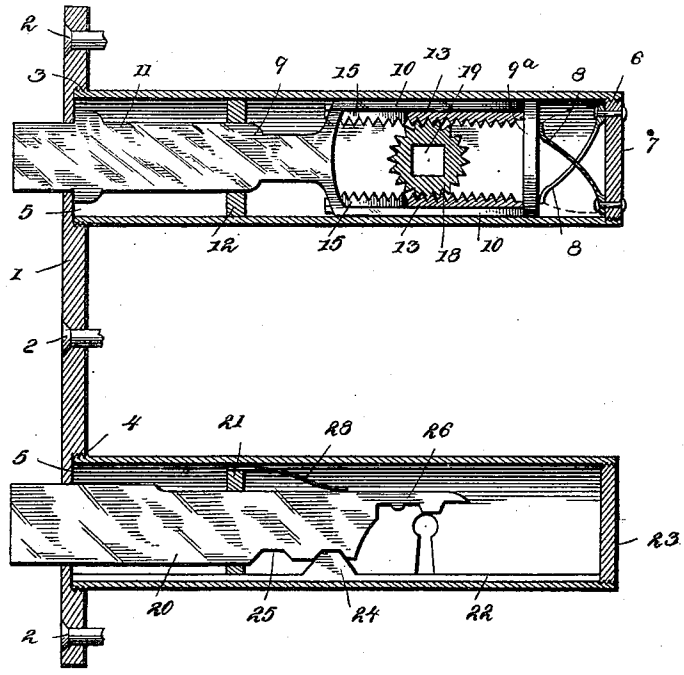


Fig. 4.

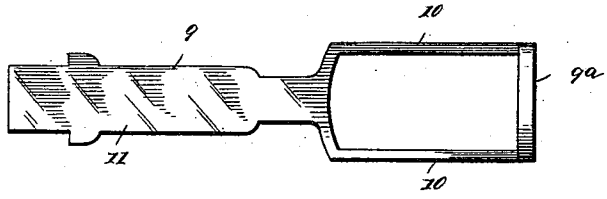
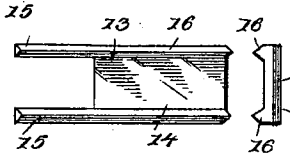


Fig. 6.



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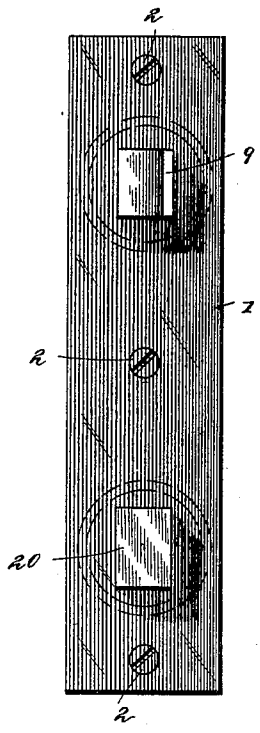
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DOOR LOCK.

(Application filed Apr. 13, 1900.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 3.



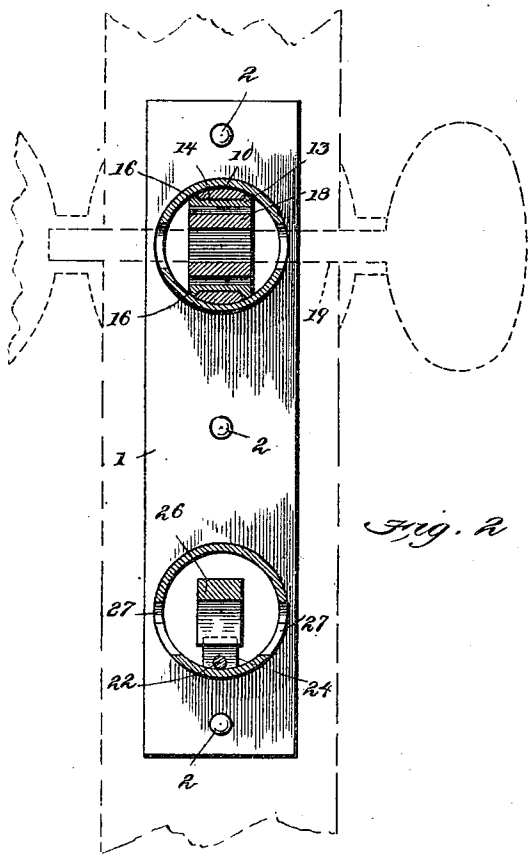
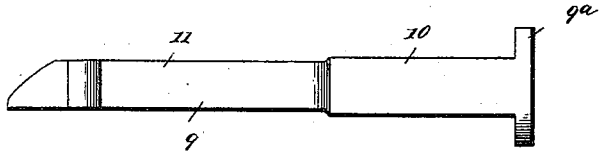


Fig. 2.

Fig. 5.



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UNITED STATES PATENT OFFICE.

HARRY W. EICHER, OF BOYNTON, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF FIVE-EIGHTHS TO GEORGE H. DUNCOMBE AND HORACE G. WILL, OF MEYERSDALE, PENNSYLVANIA.

DOOR-LOCK.

SPECIFICATION forming part of Letters Patent No. 666,219, dated January 15, 1901.

Application filed April 13, 1900. Serial No. 12,745. (No model.)

To all whom it may concern:

Be it known that I, HARRY W. EICHER, a citizen of the United States, residing at Boynton, in the county of Somerset and State of Pennsylvania, have invented certain new and useful Improvements in Door-Locks, of which the following is a specification.

This invention relates to new and useful improvements in door-locks; and its primary object is to provide a combined lock and latch which may be readily placed within a door by simply boring two holes in the edge thereof and to provide a device which is of simple and durable construction having a lock and a latch of novel construction.

To these ends the invention consists in the novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a longitudinal section through the device. Fig. 2 is a section on line *x x*, Fig. 1. Fig. 3 is a front elevation of the device. Fig. 4 is a detail view of the latch-bolt detached. Fig. 5 is a plan view of the latch-bolt, and Fig. 6 is a similar view of a ratchet-plate.

Referring to said figures by numerals of reference, 1 is a face-plate provided with suitable fastening-screws 2, having a threaded opening 3 therein near each end for the reception of the threaded end of a cylinder 4. This end is provided with an opening 5, while the opposite end 6 is provided with a removable end plate 7. To the plate 7 of one cylinder is secured bow-springs 8, adapted to bear at their free ends upon the end of the latch-bolt 9. This bolt is provided with a round end or head 9^a, adapted to fit snugly within the cylinder and connected by means of arms 10 to a stem 11, slidably mounted within an opening formed in a partition 12, secured within the cylinder. The end of this bolt projects through the opening 5 of the end of the cylinder and is provided with the usual bevel shown.

Upon the inner surface of each arm 10 is a ratchet-plate 13 of the form shown in Fig. 6 and comprising a body portion 14, having a fork extending therefrom comprising prongs 15 and provided at each edge with flanges 16, adapted to extend over the edges of the arms 10. These forks straddle the arc-shaped arms 17 of the bolt 9 and the opposite ends of the plates are adapted to normally bear upon the inner surface of the end 9^a. The plates 13 are smooth upon their bearing-surfaces and are slidable upon the arms 10; but their opposite faces are provided with ratchet-teeth adapted to mesh with a gear 18, secured to the knob-spindle 19.

When it is desired to retract the latch-bolt, the knob is turned. This will throw the plates 13 in opposite directions upon the arms 10, the plate which moves backward coming into contact with the end 9^a and moving the same, together with the balance of the bolt 9, backward. This movement will compress the springs 8, which will, as is obvious, immediately return the bolt and plates 13 to their normal position, when the spindle 19 is released.

The locking-bolt 20 is mounted within the opening 5 in the end of the other cylinder and is slidable within a partition 21 therein. This partition is provided with a smaller passage therein for the reception of a rod 22, which bears upon the bottom of the cylinder and is held in position by the removable end 23 of the cylinder. This rod is provided with a tapered projection 24, which extends upward therefrom and is adapted to project into one of two recesses 25, formed within the lower edge of the locking-bolt. These recesses are so arranged that the projection will fit into one of them only when the bolt is either retracted or projected. A stem, as 26, projects from the end of the bolt adjacent to the key-hole 27 and is adapted to be lifted by a key, which is brought into contact therewith.

A bow-spring, as 28, is used for holding the bolt normally in engagement with the projection 24.

It will be seen that by providing a casing for the lock of the peculiar construction shown it is merely necessary to bore two holes within the edge of the door in order to place the same therein.

In the foregoing description I have shown

the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

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

1. In a lock, the combination with a casing; of a partition therein, a bolt slidably mounted within the partition, arms projecting from the bolt and secured to an end plate, a spring bearing upon said end and secured to the end of the casing, a plate upon each arm, teeth thereon, prongs upon each plate at opposite sides of the bolt, and a gear meshing with the teeth.

2. In a lock, the combination with a casing; of a partition therein, a bolt slidably mounted within the partition, curved portions to the bolt, parallel arms projecting therefrom, an end piece secured to the parallel arms, plates slidably mounted upon said arms, flanges thereto serving as guides therefor, forks adapted to embrace the curved portions of the bolt, teeth upon the plates, a gear engaging the teeth, a plate at one end of the casing, and a spring secured thereto and bearing upon the end of the bolt.

3. In a door-lock, the combination with a face-plate having threaded openings therein, a casing engaging one of said openings and having a partition therein, a bolt slidably mounted within the partition, arms projecting therefrom and secured to an end piece, a spring bearing upon said end and secured to the end of the casing, a plate upon each arm, teeth thereon, prongs to the plate at each side of the bolt, a gear meshing with the teeth; of a casing engaging the walls of the second opening within the face-plate and having a partition therein, a bolt mounted in the partition, a strip removably fitted in said partition and having a tapered projection thereon adapted to extend into a recess within the bolt and hold the same in projected or retracted position, and means for normally holding the bolt in engagement with the projection.

4. In a lock the combination, with a casing, of a partition therein, a bolt slidably mounted in the partition, a strip removably fitted in the partition, a tapered projection thereon adapted to extend into a recess within the bolt and hold the same in projected or retracted position, and means for normally holding the bolt in engagement with the projection.

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

HARRY W. EICHER.

Witnesses:
H. R. FAUNER,
C. C. COOK.