

UNITED STATES PATENT OFFICE.

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LOCK.

979,825.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ANTONIO COLOSIMO, a subject of the King of Italy, and a resident of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a specification.

The object of the invention is to improve, simplify and render more inexpensive the construction of locks of the type known as unit locks; that is to say a lock where the key is inserted through the knob.

Referring to the drawings: Figure 1 is a front view of a lock embodying my invention with the casing removed. Fig. 2 is an edge view thereof with the casing shown partly in section. Fig. 3 is a detail cross sectional view on the line 3—3 of Fig. 2, showing the parts in one position. Fig. 4 is a view similar to Fig. 3 but showing the parts in the opposite position. Fig. 5 is a side view in central vertical section of the operating mechanism.

Referring to the drawings *a* denotes the casing, *b* the bolt normally held in forward position by the spring *c*. The rear end of the bolt is bifurcated and has lugs *d*, *d*, against which the retractors 10—20 act.

1 represents the inside knob, and 2 the outside knob.

3 represents the spindle to the outer polygonal end of which the knob 2 is secured. The inner end of the spindle is made round as indicated at 4 and carries a sleeve 5 to which the inner knob 1 is secured, this knob being capable of a turning movement on the spindle 3. The retractor 10 is secured to the spindle 3, and the retractor 20 is secured to the sleeve 5. These retractors have lateral wings 11—11, 21—21, which engage the lugs *d*, *d*, and as the retractors are rotated by either of the knobs they cause the bolt *b* to be withdrawn.

A rotatable tumbler 30 fits within the spindle 3 and has diametrically opposite recesses 31—32, the latter being deeper than the former. There is also an exterior circumferential groove 33 extending from the recess 31 around to the recess 32.

The retractor 10 has an extension 12 which is pierced to receive a pin 13, the inner end of which passes through the spindle and is adapted to rest in either of the recesses 31—32, and is normally pressed inward by the spring 14. The outer end of the pin is adapted for engagement with the locking

projection 40 on the casing *a* to prevent rotation of the spindle. The tumbler has longitudinal grooves 37—38 which lead to the recesses 31—32. The key 50 is introduced through the outer knob and is bifurcated to enter the grooves 37—38, one end of the key as shown being longer than the other and wedge shaped so as to force the pin 13 up out of the recess to a position so that it will ride in the circumferential slot 33 when the tumbler is turned under it. The tumbler is turned by the key until the deeper recess 32 is beneath the pin when the spring 14 throws the pin down into this recess. The spindle is now unlocked and may be turned by the knob 2 and through the retractor to withdraw the bolt. It is of course apparent that the inner knob is never locked so that the bolt can always be withdrawn when the inner knob is turned, as it is secured to the sleeve 5 which carries the second retractor 20.

The exterior of the tumbler at its outer end is circumferentially grooved as indicated at 35 and into some of these grooves screws 36 seated in the spindle 3 project. The combination of the lock can be changed by changing the screws from one groove to another, and each key is properly cut to fit its own lock and no other.

By this invention there is produced a lock of the unit type which is greatly in demand at the present time which is extremely simple in its construction, easy to assemble and install, and inexpensive to manufacture.

It will be clear to anyone skilled in the art that the lock can be made so as to be key-operated on either side by securing the inner knob 1 directly to the spindle doing away with the sleeve 5 and the second retractor 20.

I claim:—

1. In an article of the character described the combination with a casing, bolt and bolt spring, of a spindle, a retractor carried thereby and adapted for coöperation with said bolt, a rotatable tumbler within said spindle having diametrically opposite recesses of different depths, a longitudinally movable pin in said retractor whose inner end is adapted to rest in either one of said recesses, its outer end being adapted for engagement with a locking projection on the casing and a key insertible endwise in said tumbler and adapted to disengage said pin from said tumbler, and to rotate said tumbler in said spindle.

2. In an article of the character described the combination with a casing, bolt and bolt spring, of a spindle, a retractor carried thereby and adapted to coöperate with said
5 bolt, a pin mounted in said retractor and adapted for longitudinal movement through a wall of said spindle, a tumbler rotatably mounted within said spindle and having recesses of different depths adapted to receive
10 the inner end of said pin, a semi-circumferential groove connecting said recesses, a locking projection on the casing adapted for engagement with the outer end of said pin, longitudinal grooves in said tumbler leading
15 to said recesses and a key adapted for insertion through said knob into the groove in said tumbler as and for the purposes specified.

3. In an article of the character described
20 the combination with a casing, bolt and bolt spring, of a spindle, a retractor carried thereby and adapted for coöperation with

said bolt, a locking lug on the casing, a pin in said retractor adapted for longitudinal movement, the outer end of which is adapted
25 for coöperation with said locking projection, a rotatable tumbler mounted in said spindle, recesses of different depths in said tumbler and adapted to receive the inner end of said pin, a circumferential groove connecting
30 said recesses, a knob secured to the outer end of said spindle, a sleeve secured to the inner end thereof and rotatable thereon, a second retractor carried by said sleeve and adapted for coöperation with said bolt, a
35 knob secured to said sleeve, longitudinal grooves in said tumbler leading to said recesses and a key adapted to be inserted through said outer knob into said grooves as and for the purposes specified.

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Witnesses:

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