

UNITED STATES PATENT OFFICE.

PAUL TROPP, OF BERLIN, GERMANY.

LOCK.

SPECIFICATION forming part of Letters Patent No. 756,435, dated April 5, 1904.

Application filed September 20, 1902. Serial No. 124,144. (No model.)

To all whom it may concern:

Be it known that I, PAUL TROPP, architect, a subject of the German Emperor, residing at 11 Albrechtstrasse, Berlin, in the Empire of Germany, have invented certain new and useful Improvements in Locks, of which the following is a specification.

This invention relates to a lock comprising two devices or arrangements for locking the same bolt, the essential features being that the rear of the bolt is fitted with a bolting or securing device which when the lock is locked for the second time ("double-locked") renders the primary locking mechanism inaccessible to a key, it being material that the blocking or stopping of the keyhole should take place as a result of a secondary movement of the bolt.

The object of the improved arrangement, therefore, is to enable the lock so to be locked with one key—viz., the main or master key—that it may not be unlocked by another ordinary key.

In the accompanying drawings, Figure 1 shows the lock open. Fig. 2 shows the lock with its bolt in the locked position. Fig. 3 shows the lock with the keyhole covered or shut by means to be described, and Fig. 4 is a section on line A B, Fig. 2.

The bolt *c*, which is guided by the face-plate *a* of the lock-case *b*, is adapted to be acted upon by means of two keys—viz., an ordinary key to be inserted through the keyhole *d* and the main or master key to be inserted through the keyhole *e*. By means of the latter the lock may be so locked that it cannot be unlocked with the ordinary key.

When the lock is open, the bolt being retracted, the parts occupy the position shown in Fig. 1, wherein the tumbler *f*, which is guided by the pins *g g g*, is shown as so situated that its tooth *h* is maintained by the action of the spring *w* in engagement with the first notch *i* of the extension *j* at the rear of the bolt, said extension being provided with a notch *l* for the key inserted through the keyhole *d* to engage in. In addition to this notch *l* there are formed in the bolt extension or part *j* the further notches *k k*, arranged side by side and with which the pivoted key-

hub *m*, to be operated by means of the master-key, is adapted to engage. Supposing, for example, that the lock is locked with an ordinary key inserted through the keyhole *d*, then the bolt *c*, owing to the engagement and co-operation of the list of such key with the notch *l*, will be brought to its operative position. The tooth of the tumbler *f*, which by reason of the bit of the key sliding along the surface *o* of such tumbler has been raised and is now depressed again by the spring *w*, will engage or enter the next notch *i* of the bolt extension *j*, Fig. 2. A tongue or shield *s*, forming a part of the extension *j*, is at the same time moved into position to act as a stop and prevent further turning of the key. The primary locking mechanism having now been operated and the bolt having been thrown, the key will be withdrawn from the keyhole *d*. Now by inserting the second or master key into the keyhole *e* the lock may be so locked that it cannot be actuated with the ordinary first-mentioned key. Given the position of the parts as shown in Fig. 2, when the pivoted key-hub *m* is by the insertion of the master-key through the keyhole *e* turned in the direction indicated by the arrow in Fig. 2 it will first slide along the surface *t* of the tumbler, will lift such tumbler, and as the key-hub continues to turn it will move the bolt farther outward to the position in which it is represented in Fig. 3, whereupon the tooth *h* of the tumbler *f* will engage or enter the third or rearmost notch *i* of the bolt extension *j*. By this additional movement of the bolt by means of the key-hub *m* the tongue or shield *s* will be moved over the keyhole *d*, so that now the latter is no longer accessible to the ordinary key, which cannot, therefore, operate the lock. In the position of the parts shown in Fig. 3 the lock can be opened—i. e., the bolt retracted—only by the use of the master-key, for which purpose it is necessary that the key-hub *m* should by means of such master-key be turned twice in the direction of the arrow, Fig. 3, coöperating first with one and then with the other of the two notches *k k*, so that the parts of the lock may once again assume the position indicated in Fig. 1. It follows from this coöperation of

the bolt and master-key that the lock acts as one arranged for double-locking, while the ordinary key (when it can be used) opens and shuts the lock by one turn.

5 The details may be variously constructed.

The lock may, if desired, be provided with a safety device for additionally securing it.

10 The construction of this safety device, however, being known is omitted from the drawings.

What I claim, and desire to secure by Letters Patent of the United States, is—

15 In a lock, a face-plate having a keyhole, a bolt operable by a key and having an extension provided with a shield and a plurality of notches, a permanently-mounted key-hub to coöperate with the latter, and a tumbler mov-

able by the key and key-hub, key-induced projection of the bolt causing the shield to stop further rotation of the key and position- 20 ing the rearmost notch to coöperate with the key-hub, subsequent rotation of the latter completing the projection of the bolt and causing the shield to cover the keyhole, a double revolution of the key-hub in reverse direction 25 causing it to engage the notches successively and thereby fully retract the bolt.

In testimony whereof I have hereunto set my hand, in presence of two subscribing witnesses, this 28th day of August, 1902.

PAUL TROPP.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.