B. E. PORTER.

DOOR HANDLE AND LOCK.

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1,236,979.

Patented Aug. 14, 1917.

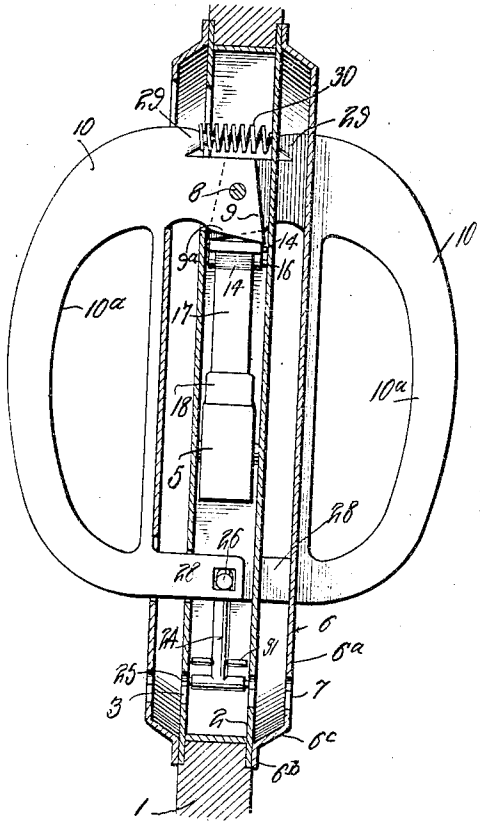


Fig. 1.

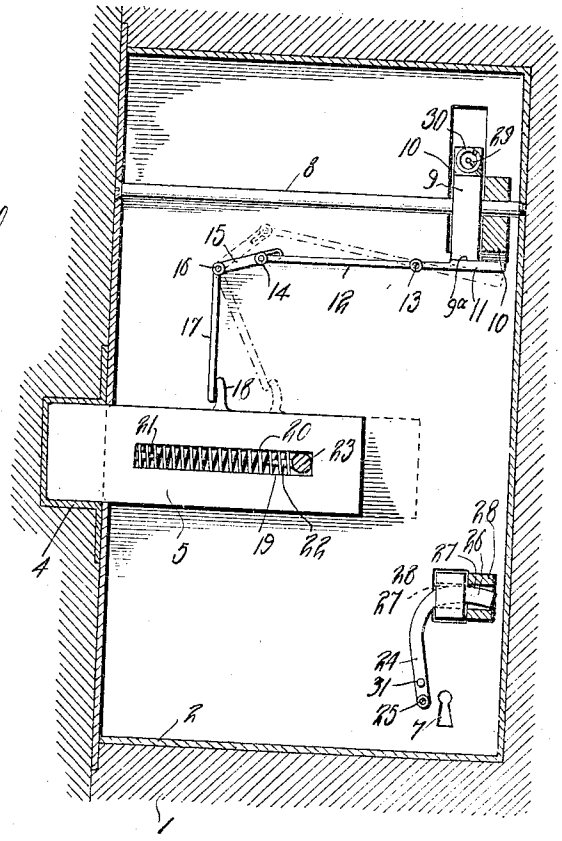


Fig. 2.

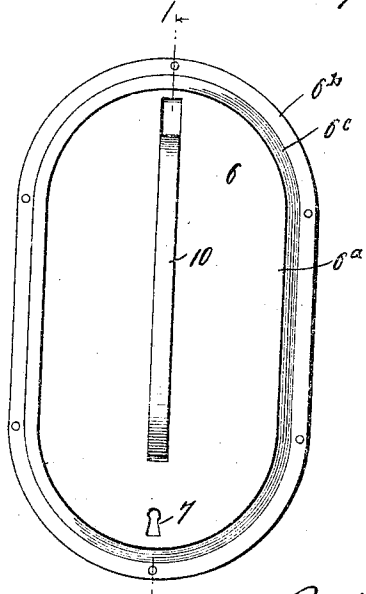


Fig. 3.

WITNESSES

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DOOR HANDLE AND LOCK.

1,236,979. Specification of Letters Patent. Patented Aug. 14, 1917.

Application filed September 14, 1916. Serial No. 120,118.

To all whom it may concern:

Be it known that I, BEN E. PORTER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Door Handles and Locks, of which the following is a specification.

This invention relates to door handles and locks, and more particularly to a door handle so combined with a lock that, when the handles are secured against movement, it will be impossible to open the door.

One of the main objects of the invention is to provide a set of handles for a door to replace the ordinary door knob and combined with a locking means so as to automatically unlock the door when a handle is raised. A further object is to provide a set of handles which are free from all sharp points or projections which might tend to catch in the clothing of a person passing in or out of the doorway so as to tear the same. Further objects will appear from the detailed description.

In the drawings:—

Figure 1 is a transverse vertical section through the invention taken on line 1—1 of Fig. 3,

Fig. 2 is a section taken through the locking mechanism near the front thereof, and

Fig. 3 is a front view of a handle and door plate.

The numeral 1 designates a door in which is mounted a lock case 2 provided with a front plate 3 secured thereon. This lock casing is set in a recess in the door, near the front edge thereof, in the usual manner. A socket 4 is secured in the door frame and is adapted to receive a lock bolt 5.

On each side of the door 1, adjacent the side faces of the lock casing, I secure a door plate 6. Each plate is of elliptical shape, being provided with a raised body portion 6^a, a peripheral flange 6^b, and an integral downwardly and outwardly inclined connecting web 6^c. The plates 6 and the lock casing are provided with alined holes 7 of usual shape adapted to receive a key for operating the lock.

Near the upper end of the lock is secured a screw rod 8. This rod passes through alined apertures in the overlapping end heads 9 of the handles 10. Each head 9 has its under face inclined downwardly and inwardly as at 9^a. Normally, the lower corner of head 9 rests on the upper face of a block 11 formed integral with the lever 12 pivoted in the casing 2, at 13. The outer end of this lever is connected, as at 14, by pin and slot connections to the upper arm 15 of a bell crank lever pivoted at 16 in the lock casing. The lower arm 17 of this lever is extended and engages a finger 18 projecting upwardly from the top of the bolt 5. The lock bolt is provided with a central longitudinal slot 19 in which is mounted a coil spring 20. This spring is seated on a stud 21 projecting inward from the outer end of slot 19 and a stud 22 integral with the pin 23 extending transversely of the lock casing. Normally, the spring 20 acts to hold the bolt 5 in extended position so as to engage the socket 4, as shown in Fig. 2.

At the lower inner corner of the casing 2 a locking finger 24 is pivotally mounted at 25 adjacent the key hole 7. This finger is of approximately arcuate shape and has its upper end shaped to form a bolt 26 adapted to pass through the alined apertures 27 of the inwardly projecting lugs 28 formed integral with, and at the lower ends of, the handles 10. When the handles are in depressed position these lugs overlap so as to bring the apertures 27 into alinement, as in Figs. 1 and 2 of the drawings. With the finger 24 rotated into such a position that the bolt 26 passes through the apertures 27 it is impossible to raise either of the handles 10. This secures the door in locked position.

Each handle 10 is provided, at its upper end, with an inwardly projecting spur 29. A coil compression spring 30 is mounted between these spurs, with its ends fitted about the same. This spring acts normally to force the upper ends of the handles apart thus rocking the handles about the pivot point 8 so as to hold them in depressed position. This normally holds the handles so that the lugs 28 and apertures 27 therein are in alinement so that the door may be readily locked. The finger 24 is provided, near its lower end, with a pin 31 projecting inwardly therefrom. By inserting a key into the lock and turning it so as to bring the bit thereof in contact with pin 31 the finger 24 may be rocked about its pivot 25 into either operative or inoperative position, as desired.

As will be noted the handles 10 are of approximately semi-elliptical shape being free

from all projections or sharp corners and are provided with central openings 10^a so as to permit easy grasping of the same. When the finger 24 has been moved so as to release the lower ends of the handles, either handle may be easily rocked upward and outward about the pivot pin 8. When the handle is rocked as described, the lower inner corner of head 9 at the upper end thereof, acts to depress the plate 11 at the inner end of lever 12. Lever 12 rocks the arm 15 of the bell crank lever upward so as to swing the arm 17 inward. Arm 17 of the bell crank lever acts on the finger 18 of lock bolt 5 so as to force the bolt inward thus releasing the door. By this means the door may be simultaneously unlocked and opened by a single movement of one of the handles. The movements of the various parts of the locking mechanism when the handle is rocked upward will be clear from Fig. 2 of the drawings, in which figure the positions occupied by the locking elements when the door is in unlocked position are indicated by broken lines.

It will be evident that certain changes can be made in the construction and arrangement of the various parts of my invention without departing from the field and scope of the same, and I intend to include all such variations in this application, as fall within the scope of the appended claims, in which a preferred form only of my invention is disclosed.

What I claim, is:—

1. In a device of the character described, the combination of a casing, a bolt slidably mounted therein and normally projecting from said casing, an operating handle pivotally mounted at its upper end in each side of the casing and provided with an integral lug adapted to project into the casing when the handle is in normal position, the said casing being provided with an opening to receive said lug, key operated means mounted within the casing and movable into engagement with the lugs of said handles so as to lock the handles against movement, and means for retracting said bolt when either one of the handles is raised.

2. In a device of the character described, the combination of a lock casing, handles pivotally mounted in said casing, each of said handles being provided at its upper end with a latch operating head, a bolt slidable in the casing and normally extending therefrom, said bolt being provided with an upwardly projecting finger, a lever mounted in the casing and adapted to be engaged by the latch operating heads of the handles at one side of its pivotal axis, a bell crank lever mounted in the casing and having one arm in engagement with the finger of the bolt and its other arm loosely connected to the end of said lever remote from the portion thereof which is adapted to be engaged by the latch operating heads of the handles.

3. In a device of the character described, the combination of a lock casing, a bolt slidable therein, means for normally holding the bolt in extended position, handles pivotally mounted in the casing on a common axis, said handles being provided with overlapping heads at their upper ends having downwardly and inwardly inclined lower edges and with overlapping apertured lugs at their lower ends, said bolt being provided with an integral upwardly projecting finger, a lever pivotally mounted in the casing and having its inner end in engagement with the heads at the upper ends of the handles, a bell crank lever having its upper arm loosely connected to the outer end of the first said lever and its lower arm in engagement with the finger carried by the bolt, and a finger mounted in the casing provided with a bolt portion adapted to be moved into and out of the apertures of the lugs at the lower ends of the handles.

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

BEN E. PORTER.

Witnesses:
LUCILE C. PORTER,
WALTER P. CRANE.

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