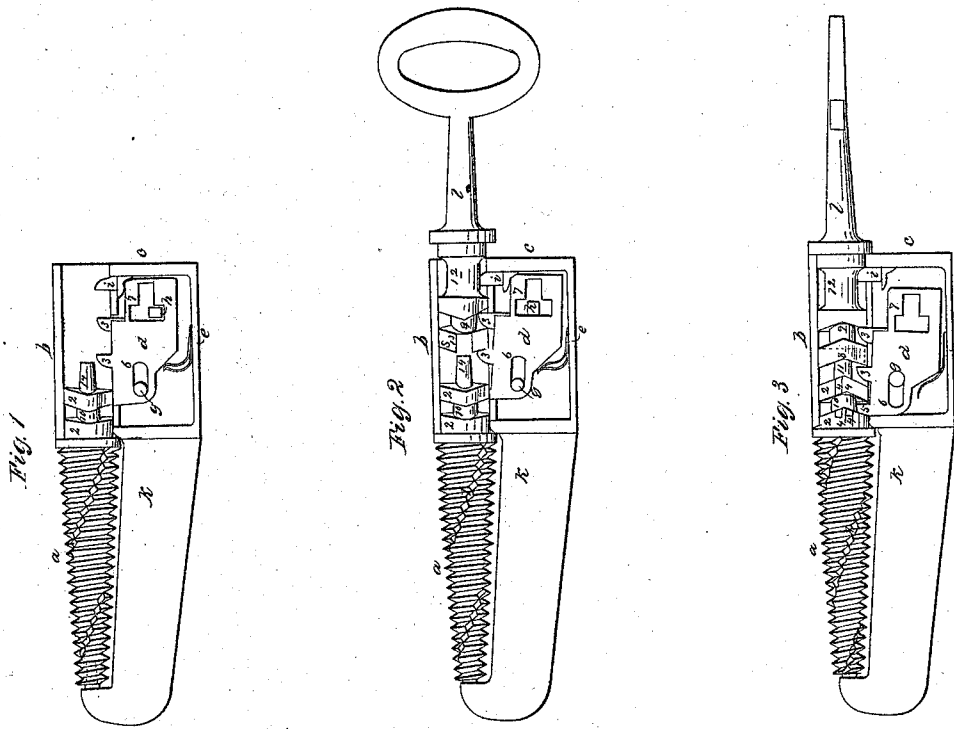


2 Sheets-Sheet 1.

*Ballou & Murth,*  
*Key-Hole Guard.*

*N<sup>o</sup> 12,476.*

*Patented Mar. 6, 1855.*

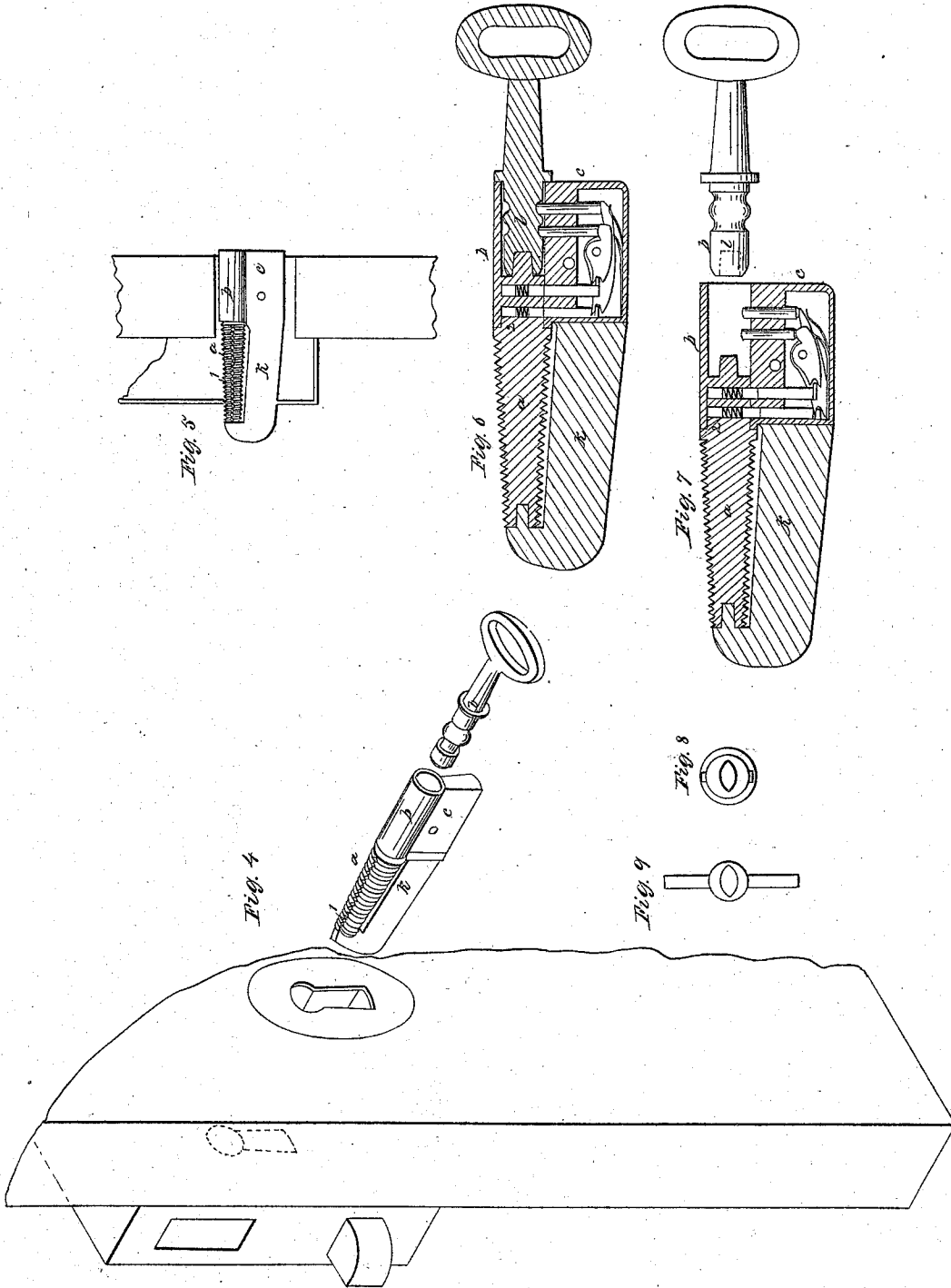


2 Sheets - Sheet 2.

*Ballauf & Nirth,*  
*Key-Hole Guard.*

No 12,476.

Patented Mar. 6, 1855.



# UNITED STATES PATENT OFFICE.

WILLIAM BALLAUF AND FRIEDERICH WURTH, OF CINCINNATI, OHIO.

## GUARD FOR DOOR-LOCKS.

Specification of Letters Patent No. 12,476, dated March 6, 1855.

*To all whom it may concern:*

Be it known that we, WILLIAM BALLAUF and FRIEDERICH WURTH, both of Cincinnati, Hamilton county, State of Ohio, have invented a new and useful Safety Stopper or Guard for Door-Locks; and we do hereby declare the following to be a full, clear and exact description thereof, reference being had to the annexed drawings, making part of this specification.

The object of our invention is to provide a conveniently portable instrument by means of which, the key hole of any ordinary door lock can be rendered temporarily inaccessible, the instrument being removable by the same key which fastens it.

The instrument is useful as an additional safeguard to stores, banks or offices when untenanted, and is especially adapted to the wants of travelers, who are constantly compelled to leave valuable baggage under the precarious protection of a lock fitted by other keys in the same building.

In the accompanying drawings Figures 1, 2 and 3 are axial sections of a guard to a scale double of reality. Fig. 4 is a perspective view exhibiting a guard as presented for insertion from the outside of the door. Fig. 5 represents a guard in position within the keyhole. Fig. 6 represents by axial section (double the reality) a guard with another arrangement of tumblers, and having its key inserted. Fig. 7 represents in like manner a guard without the key. Fig. 8 is an end view of the screw spindle or pin and Fig. 9 of the key belonging to the last named form.

The instrument consists of the following principal parts and their accessories. A tapering and screw threaded spindle (*a*), adapted to fit and to be screwed fast within the eye of a door-keyhole of any usual size. This spindle is also scored with a groove (1) sunk nearly or quite to the depth of the thread either longitudinally or spirally as represented the latter form being preferred. The object of this groove is to facilitate the engagement of the screw within the keyhole. The spindle has a rounded shank (2) which occupies one end of a cylindrical socket or barrel (*b*).

(*c*) is a hollow rectangular case projecting from one side of the barrel, and styled by us the bit. This bit contains one or more tumblers which may be of the form represented at (*d*). A number of them may be made coincident in shape, with the single

exception of the position of the spur (3 or 3').

Except when the key (*l*) is brought into action, the springs (*e*) pressing downward and backward against the tumblers retain the lug or dent (5) within the notch (4) in the key (*f*). Each tumbler has a similar lug occupying an appropriate notch 4 or 4' in the key, there being one notch for each tumbler. (The rear tumbler being coincident in shape with the front one except in the position of the spur 3'—that is the only part visible in the illustration.) The front end of each tumbler is confined to a longitudinal motion by a pin (*g*) which projecting from the case occupies a slot (6) in each tumbler. The T shaped slot (7) working on the pin (*h*) permits the rear ends of the tumblers to be elevated by the piston (*i*) to the proper distance by means of the channel (12) on the key stem (whose depth is carefully adjusted for that purpose). The horizontal portion of the slot then permits the tumblers to be advanced longitudinally, by pressure of the end (8) and groove edge (9) of the key, respectively, against the spurs (3 and 3'). This action brings the lugs (5) clear of the notches (4, 4') and into the eccentric channel (10) around the spindle shank. If the true key has been employed, the lugs (5) and the spurs (3 3') then occupy three distinct channels in the spindle-shank and key, namely, the channel (10)—just referred to—in the spindle shank, the channel (9) in the key and another channel (11) formed by the opposing and parallel shoulders of the key and spindle. These channels have all the same everted form and position as represented. The notches (4 4') are repeated for a short distance in front of the channel (10). Hence if a key be employed which pushes the tumblers either too far or not far enough it is impossible to rotate the spindle. The form and action also of the T slot is such as to restrain the tumblers from any longitudinal movement, unless at the commencement of the advancing pressure, the rear ends of the tumblers are lifted neither less nor more than the exact height of the horizontal slot. Another element of security in this guard is derived from the eccentric channels or grooves of the spindle and key in their concerted action upon the different parts of a single tumbler. The action of these channels is to impart to the tum-

blers a short sliding motion to and fro in the act of rotating the spindle and all the channels being parallel, to each other, the dent and spur on each tumbler have an unrestricted motion in their respective channels. Should on the other hand a key be applied whose channels were either more or less eccentric it would evidently be impossible to rotate the spindle, either the key being detained by the resistance of the spurs against the channel side or by the re-entering of the lugs or dents within the notches of the spindle.

The rotation of the spindle by the key may be effected by means of a crotch (13) which on the advancement of the key engages a spud (14) upon the spindle shank or a pin and socket may be employed as in Figs. (8 and 9).

The bit or case (e) should approximate in form and size to the slot of an ordinary keyhole so as, in conjunction with the screw spindle, to so occupy the keyhole as effectually to preclude any tampering with the lock.

The bracket (k) projecting forward from the bit, serves the twofold purpose of supporting the point of the screw spindle and that of occupying the slot of the key hole, when the instrument is inserted from the inside of the door.

We claim as new and of our invention—

1. The bit or case (e) and the bracket (k) adapted to the slot of an ordinary keyhole; in combination with the cylindrical socket (b) and tapering screw threaded spindle (a) substantially as set forth,

adapted to the eye of the keyhole, and which spindle,—by means of a suitable key (l) as herein described—can be screwed within or unscrewed from the keyhole;—the rotation of the screw, by any other than the proper key, being prevented by the described tumblers (d) or their equivalents.

2. The sliding and vibrating tumbler (or tumblers) (d) provided with a locking dent or lug (5) catching within a notch (4) in the spindle shank, and disengaged therefrom by the combined agencies of the channeled and sliding key (l), elevating pin or piston (z), longitudinal and T slots (6) (7), and stationary pins (g) (h) substantially as described; the tumbler, on the withdrawal of the key relocking by means of a suitable spring.

3. In combination with tumblers substantially as represented,—the longitudinal notches (4) (4'), extending on both sides of a transverse or eccentric channel (10) around the spindle shank.

4. The eccentric and parallel channels (9) (10) (11) around the spindle shank and key stem; acting simultaneously upon both dent and spur of each tumbler, after the manner and for the purposes set forth.

5. The tapering, screw threaded and spirally scored spindle in this connection.

In testimony whereof, we hereunto set our hands before two subscribing witnesses.

WILLIAM BALLAUF.  
FRIEDERICH WURTH.

Witnesses:

GEO. H. KNIGHT,  
THOS. W. SCOTT.