(No Model.)

W. W. PURSELL.

PERMUTATION LOCK.

No. 457,959. Patented Aug. 18, 1891.

Fig. 1

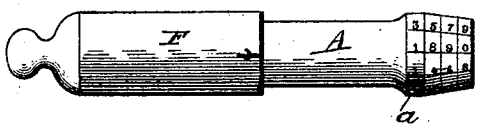


Fig. 2.

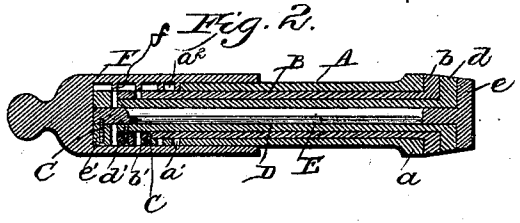


Fig. 3.

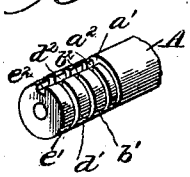


Fig. 4.

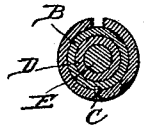


Fig. 5.

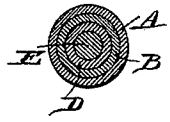


Fig. 6.

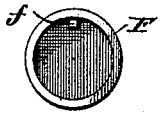


Fig. 8.

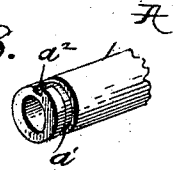
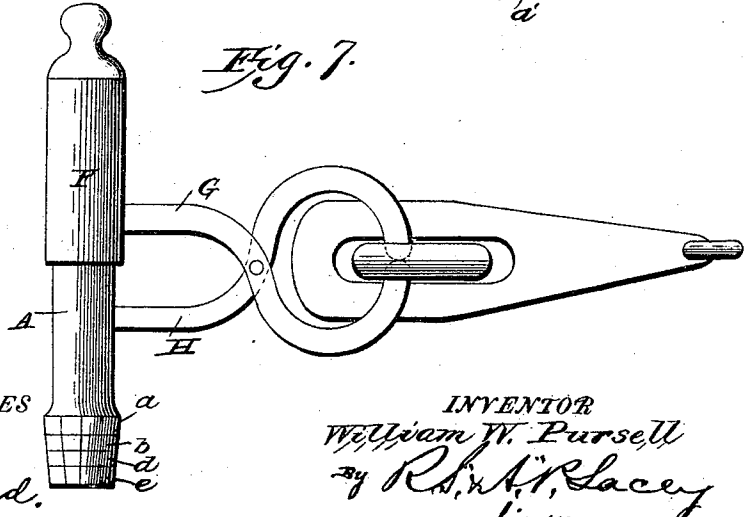


Fig. 7.



WITNESSES
F. L. Durand
Van Buren Hillyard.

INVENTOR
William W. Pursell
By R. A. P. Lacey
his Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM W. PURSELL, OF BERWICK, PENNSYLVANIA.

PERMUTATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 457,959, dated August 18, 1891.

Application filed November 13, 1890. Serial No. 371,337. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. PURSELL, a citizen of the United States, residing at Berwick, in the county of Columbia and State of Pennsylvania, have invented certain new and useful Improvements in Hasp-Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to hasp-locks, and has for its object to dispense with a key and provide a lock that will be compact, efficient, simple, water and dust proof, and practically impossible to be picked.

The improvement consists of the novel features and the peculiar construction and combination of the parts, which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which—

Figure 1 is a top plan view of a lock embodying my invention. Fig. 2 is a central longitudinal section of the lock. Fig. 3 is a detail view of the inner end of the stem and tumblers. Fig. 4 is a section through one of the wards, showing the manner of connecting the same with the tumbler-shaft. Fig. 5 is a cross-section through the stem and the tumblers. Fig. 6 is an end view of the locking-cap, looking at the open end. Fig. 7 is a side view of the lock, showing one method for connecting the cap and the stem, the said means also serving to fasten the hasp on the staple. Fig. 8 is a perspective view of the inner end of the tubular stem.

The stem A is tubular and terminates at its outer end in the annular enlargement or ring *a*, and is provided near its inner end with the annular groove a' and the notch a^2, which extends from said groove to the end of the stem. Within the stem are arranged the series of tumblers B, D, and E, which are concentrically journaled, and which have, respectively, at their outer ends the rings *b*, *d*, and *e*, and at their inner ends the wards b', d', and e'. The wards are of the same diameter and equal in size with the diameter of the stem A, and have notches b^2, d^2, and e^2, which correspond with the notch a^2 in the stem. The rings *b*, *d*, and *e* have characters imprinted thereon, which when brought into proper relation effect an aligning of the notches a^2, b^2, d^2, and e^2, as shown in Fig. 3. The stem and the tumbler-shafts are of different relative lengths to permit the wards and the rings to occupy different positions and allow the proper spacing of the wards, the spaces between the wards being equal to the width of the groove a', the wards are held on the tumbler-shafts by binding-screws C, whereby provision is had to change the relative position of any or all of the wards, so as to alter the combination at which the lock opens. The locking-cap F is adapted to be fitted on the end of the stem and has a series of projections *f* on its inner side, which, when the cap is in place on the stem, enter the spaces between the wards and lock the cap on the stem.

In practice the stem is thrust through a staple after the hasp has been turned down on the said staple, the notches being in alignment and the cap is placed over the stem, the projections passing through the notches, and the rings are turned to throw the notches out of alignment and lock the cap. To remove the cap the rings are turned until the characters thereon are brought into proper relation, and the predetermined combination of characters are brought in line with an indicating-mark on the cap, when the latter can be removed.

In the preferred form of the invention the locking-cap is secured to one end of a lever, as G, and the stem A is fastened to the corresponding end of a similar lever, as H. These levers G and H cross and are pivoted together, and their inner ends are approximately semicircular, forming a ring when together. When the cap and the stem are together, the inner ends of the levers are closed, and when thrust through a staple, as shown, lock the hasp. When the cap and stem are separated, the inner ends of the levers are separated and the lock can be detached from the staple. Obviously the levers may be used with similar locks comprising a stem and a locking-cap.

While the drawings and foregoing specification relate to hasp-locks only, by immaterial alterations in the shape of the lock it is also designed as a lock for doors, chests, and drawers.

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

1. The hereinbefore-specified hasp-lock, composed of the tubular stem A, having the annular enlargement a at its outer end, and having the annular groove a' and the communicating notch a^2 at its inner end, a series of tumblers of varying lengths concentrically journaled relatively to each other and the tubular stem, and having rings at their outer ends, wards at the inner ends of the tumblers and properly spaced, and of the same diameter as the inner end of the tubular stem, and having notches which correspond with the notch a^2, fastenings to adjustably connect the wards with the tumblers, and the locking-cap provided on its inner side with projections which correspond in position with the groove a, and with the spaces between the wards, substantially as set forth.

2. The combination, with a stem, a cap, and means for locking the cap on the stem, of two levers crossed and pivoted between their ends and carrying the cap and the stem on their respective ends, and having their inner ends constructed to form a ring and engage with a staple when the cap and the stem are closed, substantially as specified.

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

WILLIAM W. PURSELL.

Witnesses:
R. G. CRISPIN,
W. E. SMITH.