T. HENDRICKS.

KEYS FOR LOCKS.

No. 188,011. Patented March 6, 1877.

Fig. 1

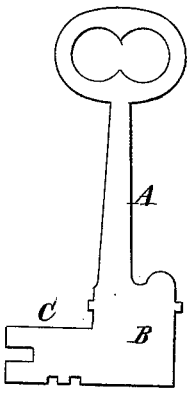



Fig. 2

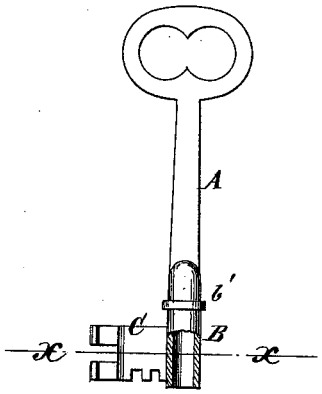



Fig. 3


Fig. 4

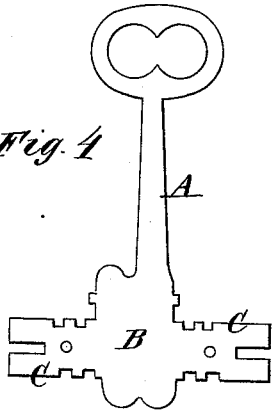



Fig. 5

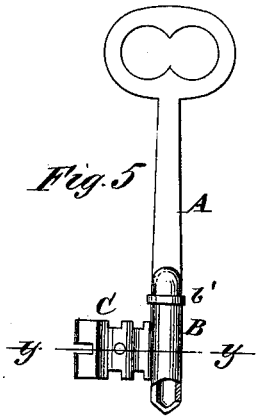



Fig. 6


Fig. 7

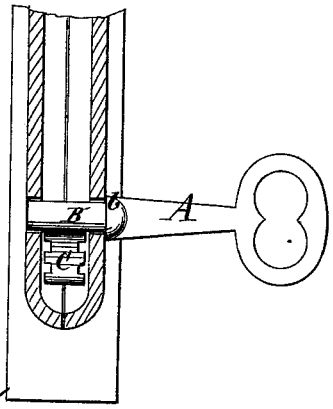
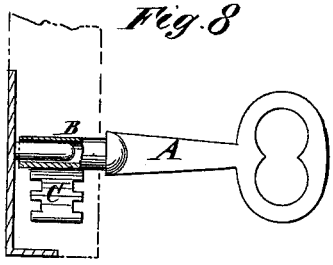



Fig. 8

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# UNITED STATES PATENT OFFICE.

THEODORE HENDRICKS, OF NEW YORK, ASSIGNOR TO HIMSELF AND WILLIAM E. PRICE, OF BROOKLYN, N. Y.

## IMPROVEMENT IN KEYS FOR LOCKS.

Specification forming part of Letters Patent No. **188,011**, dated March 6, 1877; application filed July 22, 1876.

*To all whom it may concern:*

Be it known that I, THEODORE HENDRICKS, of the city, county, and State of New York, have invented a new and useful Improvement in Pressed Cylindrical Keys, of which the following is a specification:

Figure 1 represents a blank for one of my improved keys. Fig. 2 represents a completed key. Fig. 3 is a cross-section of the same, taken through the line *x x*, Fig. 2. Fig. 4 represents a blank for a modified form of my improved keys. Fig. 5 represents a completed key. Fig. 6 is a cross-section of the same, taken through the line *y y*, Fig. 5. Fig. 7 represents one of my improved keys as applied to a lock without a key-pin. Fig. 8 represents one of my improved keys as applied to a lock with a key-pin.

Similar letters of reference indicate corresponding parts.

The object of my invention is to produce a key composed of sheet metal formed in a single continuous blank, struck up in a press. I thus make a key with hollow cylindrical shank, which has a shoulder, and one end left open below the bit, while the stem or part above the shank is left in a flat shape. The only joint runs along the bit to a point above the shoulder, and is securely closed without brazing or solder. This construction saves about one eighth of the metal, besides making a lighter and more convenient key.

In forming my improved keys, the blanks are first cut out of rolled or sheet steel, or other suitable material, and are then struck up into the required form. This may all be done at one operation, or at two or more operations, as may be desired, but I prefer to do it at one operation. The part B of the blank is turned over to form a hollow cylindrical shank.

The key may be formed with a single (or one thickness) bit, as shown in Figs. 1, 2, and 3, or it may be formed with a double (or two thickness) bit, as shown in Figs. 4, 5, and 6. The latter construction makes a stronger and thicker key. When the key is made with the bit C of two thicknesses, or double, the two parts should be secured to each other by a rivet or other suitable means. In striking up the key a bead is struck up in the part of the blank that forms the hollow shank, to form a shoulder, *b'*, to serve as a stop when the key is to be used with a lock having a key-hole through both plates, and consequently without a key-pin. In a lock with a key-pin the the shoulder *b'* is of no practical use.

When the key is to be used in a lock without a key-pin the lower end of the part B of the blank may be so formed, as shown in Fig. 4, that when pressed into a cylinder it will close up the end of the shank, as shown in Fig. 5.

When the key is to be used in a lock with a key-pin, it may be made of thicker metal, so that when the part B is rolled into a cylinder it may form a shank with a very small or no cavity, which construction forms a very strong key.

The bit C may be made of any desired shape or form, and with any desired number or form of guards.

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

A lock-key formed of a single sheet-metal blank, with a hollow cylindrical shank, flat stem, a shoulder, one open end below the bit, and a single joint, as shown and described.

THEODORE HENDRICKS.

Witnesses:

JAMES T. GRAHAM,

JAMES H. HUNTER.