

G. D. CLARK.

Manufacture of Clock-Keys.

No. 146,513.

Patented Jan. 20, 1874.

Fig. 1

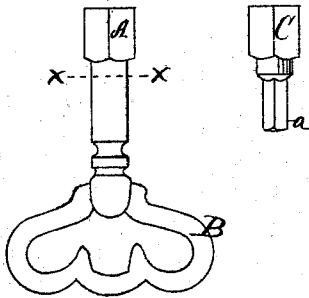


Fig. 3.

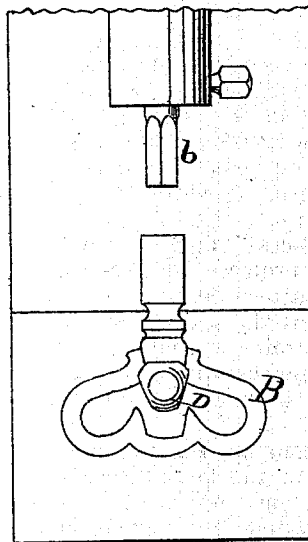
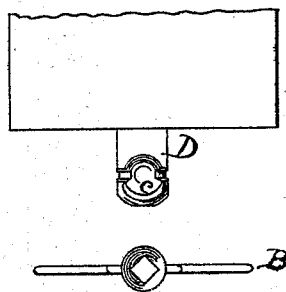


Fig. 2



Fig. 4.



Witnesses
Geo. A. Goidy
Chas. A. Stuck

Inventor.
George D. Clark.
By James Shepard atty.

UNITED STATES PATENT OFFICE.

GEORGE D. CLARK, OF PLAINVILLE, CONNECTICUT.

IMPROVEMENT IN THE MANUFACTURE OF CLOCK-KEYS.

Specification forming part of Letters Patent No. **146,513**, dated January 20, 1874; application filed December 15, 1873.

To all whom it may concern:

Be it known that I, GEORGE D. CLARK, of Plainville, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in the Manufacture of Clock-Keys, of which the following is a specification:

In the process employed by me the core-print which projects from the cylindrical end of the key-pattern deviates from a cylindrical form, whereby the square cavity in the key is cast in a certain position relative to the flat handle, so that the square hole may be dressed by means of a punch, as hereafter more fully described.

In the accompanying drawing, Figure 1 is a side view of the key-pattern and the core. Fig. 2 is an end view of said core. Fig. 3 is a front elevation of a key set under a punch and upon a bed in position for dressing out the square hole of the key, and Fig. 4 is an end view of the clock-key, and a top view of the bed, all as employed in the manufacture of clock-keys in accordance with my invention.

Previous to my invention clock-keys have been made with the square cavity cast therein; but the holes varied so in size that it was necessary to assort them over or dress out the holes. Assorting them was quite laborious, expensive, and unsatisfactory.

The core-print employed in casting these keys, and the part of the core designed to rest in said prints imprint, were cylindrical, so that the square holes in the keys were formed at various positions in relation to the handle, which variance rendered it impracticable to dress out the holes by machinery.

The part of the pattern which is above the line *xx* of Fig. 1, is the core-print A, and the remainder is the key-pattern proper. I form this core-print A cylindrical for a short distance, but the bulk of its length I form square with the corners thereof in a certain position relative to the flat handle B. Other non-cylindrical forms will answer the same purpose, such as a triangle, rhombus, &c.

The core C has one end of a corresponding

size and shape to that of the core-print A, and the other end is the core proper, *a*, which will form the square hole in the key.

In all of the cores employed the square *a* must be set in certain and uniform position in relation to the non-cylindrical part of the core C.

A mold is made in the ordinary manner, the pattern and core-print, Fig. 1, is withdrawn from the mold, and the core C is placed with its large end in the imprint of the print A. The mold is then filled, and as the square *a* of the core C can be set in only one position in the mold it follows that the keys, when cast, will have the sides of the square hole always in a certain and uniform position relative to the handle B.

The core may be formed in any manner and of any material known in the arts that will answer the purpose.

A very good core is made of burnt sand and gum, as described in the patent of O. D. Hunter, September 16, 1873.

After the keys are cast, properly cleaned, and annealed, they are placed one by one upon a bed, D, Figs. 3 and 4, of a press which carries a reciprocating punch, *b*, of the size desired to leave the hole in the key.

This bed D is of such size that the key ring or handle B may be slipped over it, and it is provided with a cavity, *c*, slotted upon two opposite sides, (see Fig. 4,) which slotted cavity receives the end of key shaft and portions of its flat handle, (see Fig. 3,) so as to hold the key in a certain relation to the punch *b* as it descends into the key.

The hole in the key, as it is cast, is left so small that the punch *b* will take a thin shaving upon each of its sides, and leave the holes in the finished keys smooth and of a uniform size.

Now, it will be seen that, if the holes are cast with their sides always in a certain position relative to the handle, and the handle governs the position of the key when resting in the bed D, the punch may be easily set so as to bring its sides parallel to the sides of the square hole in the key, and thereby

good work can be rapidly done without danger of breaking the punch or spoiling the keys.

A punch and bed similar to *b D* have been before used for squaring round holes in clock-keys.

I claim as my invention—

The improvement in the manufacture of clock-keys herein described, consisting of first

casting the square hole in a certain position relative to the handle, and then dressing the sides of the hole by means of a punch, all in the manner substantially as described.

GEO. D. CLARK.

Witnesses:

WILLIAM S. COWLY,
A. N. CLARK.