H. TUCKER.

KEY DUPLICATING CLAMP.

APPLICATION FILED MAY 31, 1913.

1,081,472. Patented Dec. 16, 1913.

Fig. 1.

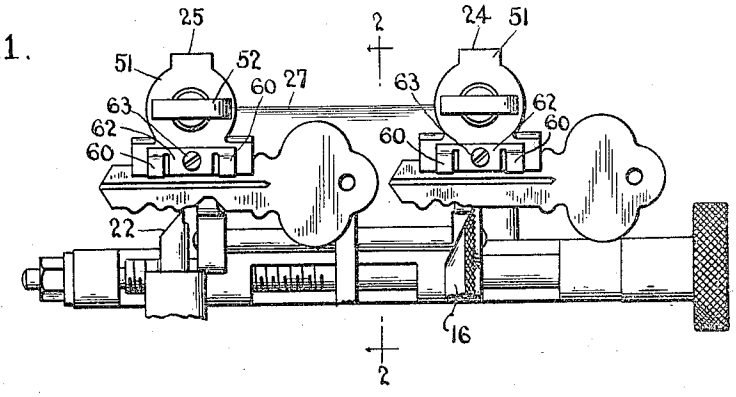


Fig. 2.

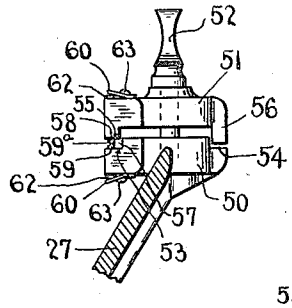


Fig. 3.

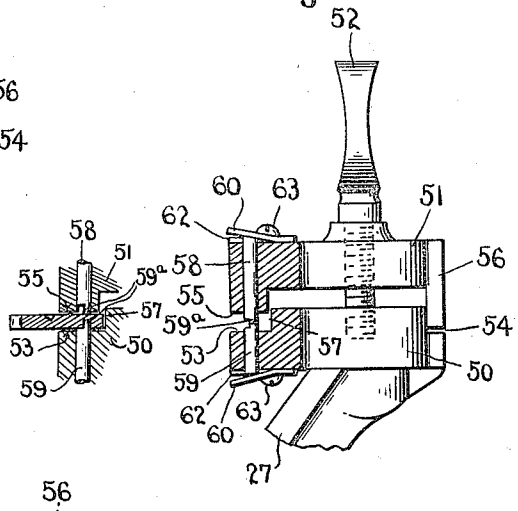


Fig. 4.



Fig. 6.

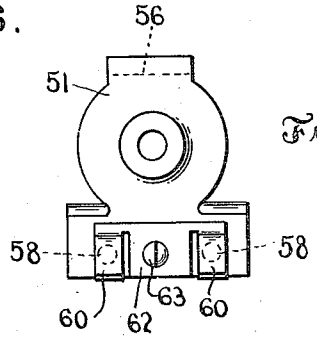


Fig. 5.

Inventor

Harry Tucker

By Walter W. Calmore

Attorney

Witnesses

L. B. James

C. M. Harvell.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HARRY TUCKER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO PHILIP KOVSKY, OF PHILADELPHIA, PENNSYLVANIA.

KEY-DUPLICATING CLAMP.

1,081,472. Specification of Letters Patent. Patented Dec. 16, 1913.

Original application filed October 29, 1912, Serial No. 728,396. Divided and this application filed May 31, 1913. Serial No. 770,831.

To all whom it may concern:

Be it known that I, HARRY TUCKER, a subject of the Czar of Russia, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Key-Duplicating Clamps, of which the following is a specification.

The object of this invention is to provide a clamp for use in key duplicating machines, and which will firmly grip either the key or the key blank to positively hold the same against movement when subjected to the action of the cutting mechanism.

An example of the type of the key duplicating machine to which the invention is applicable is disclosed in co-pending application, filed October 29, 1912, Serial Number 728,396.

Reference will be had to the accompanying drawing forming a part of this specification wherein like numerals of reference designate corresponding parts throughout the several views, in which:—

Figure 1 is a top plan view of the clamps in operative position on a fragment of a key duplicating machine. Fig. 2 is a sectional view on a line 2—2 of Fig. 1, showing the clamp proper in side elevation, Fig. 3 is a detail view of the clamp with the jaws shown in vertical section, Fig. 4 is a detailed view in vertical section showing the clamping action upon a key or key blank, Fig. 5 is a top plan view of one of the jaws of the clamp, and Fig. 6 is a perspective view of one of the work gripping teeth of the jaws.

In the drawings, numerals 16 and 22 respectively indicate the cutter wheel and the tracing point, the former acting upon a key blank in the clamp 24, and the latter upon the active edge of a pattern key in the other clamp 25. The two clamps 24 and 25 are mounted upon the upper edge of a plate 27 by means of which the key and key blank are moved toward and from the cutter and tracer. These clamps are identical in structure, and description of one will therefore serve for the other.

Each clamp is composed of two sections 50 and 51, the former being integral with the plate 27 and the latter separate therefrom, though attached to the section 50 by means of a thumb screw 52. The section 50 has front and rear depressions 53 and 54 respectively, and the upper section 52 has projections or flanges 55 and 56 respectively in the front and rear thereof. The projection or flange 55 of the upper jaw 51 coöperates with the depressed portion 53 of the other jaw 50 and forms therewith the gripping surfaces of the clamp, the wall portion 57 forming an abutment for the work. Extending transversely through the jaws in a vertical plane, are upper and lower teeth 58 and 59 respectively, which are slidingly arranged in the jaws and capable of rotation, whereby their biting edges 59^a (seen in Fig. 6), may be turned to various positions. When the jaws are tightened upon a key or key blank, the teeth 58 and 59 bite thereinto slightly due to the pressure of the springs 60 applied to the upper and lower surfaces of the upper and lower jaw sections. This biting action, however, is not sufficient to mar the key blank, these springs are formed by slitting a spring plate partially at two points, the portions intermediate the slits forming the attaching portions 62, see Fig. 1, being secured in place by a screw 63. In some instances, the teeth grip the plain sides of the key or blank, while in other cases, their biting edges 59^a engage in the usual groove found in this style of key. As there is no standard for these grooves, to meet this contingency, the teeth 58 and 59 are rotatable so that they may be turned to cause their biting edges 59^a to enter properly into the grooves of various makes of key blanks.

In use, the pattern key or key blank is inserted between the jaw faces 55 and 53 respectively of the upper and lower jaws 51 and 50, with the straight back edge of the key or blank engaged with the abutment 57 of the lower jaw. When the thumb screw 52 is tightened to draw the jaws together, the teeth 58 and 59 will be pressed against the springs 60, and their biting edges 59^a will slightly bite the key blank. If both faces of the key or blank adjacent the teeth 58 and 59, are plain, both of said teeth 58 and 59 will be forced outwardly, but if the key or blank groove occurs coincident with the biting edges 59^a of the teeth, the said biting edges will enter, or the teeth or tooth may be turned to cause it to enter, the said groove on either or both sides of the blank. Thus it will be seen that the key or blank will be firmly and positively held in its clamped

position and not liable to displacement under the severe action of the cutter or tracer.

What I claim, is:—

1. In a device of the character described, a work holding clamp comprising a pair of jaws between which the work is clamped, means for forcing the jaws together, and rotatable gripping teeth protruding from the gripping surfaces of said jaws and being yieldable under gripping pressure, the gripping surface of each tooth being eccentric to the axis of said tooth.

2. In a device of the character described, a work holding clamp comprising a pair of jaws, a clamping screw, teeth extending transversely through the jaws and being alined with each other, the teeth being rotatable and slidable in the jaws, and spring means pressing the teeth at one jaw toward those of another, the gripping surface of each tooth being eccentric to the axis of said tooth.

3. In a device of the character described, a work holding clamp comprising a pair of jaws between which the work is clamped, means for forcing the jaws together, teeth extending transversely through the jaws and being endwise movable and rotatable therein, and springs secured to the outer faces of the jaws and forming yielding backing pressure means for said teeth, the gripping surface of each tooth being eccentric to the axis of said tooth.

4. In a device of the character described, a work holding clamp comprising a pair of jaws between which the work is clamped, a clamping screw between said jaws, teeth extending transversely through the jaws and the teeth of one jaw being alined with those of the other, said teeth being rotatable and endwise slidable in the jaws, spring plates secured to the outer faces of said jaws, said plates being secured centrally to the jaws and having their ends exerting pressure upon the outer ends of the teeth, the gripping surface of each tooth being eccentric to the axis of said tooth.

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

HARRY TUCKER.

Witnesses:
S. BUCHSBAUM,
B. H. BUCHSBAUM.

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