G. BARTLETT.

INTERCHANGEABLE TOOL FOR SLOTTING KEYWAYS.

APPLICATION FILED APR. 29, 1919.

1,318,830. Patented Oct. 14, 1919.

FIG. 1.

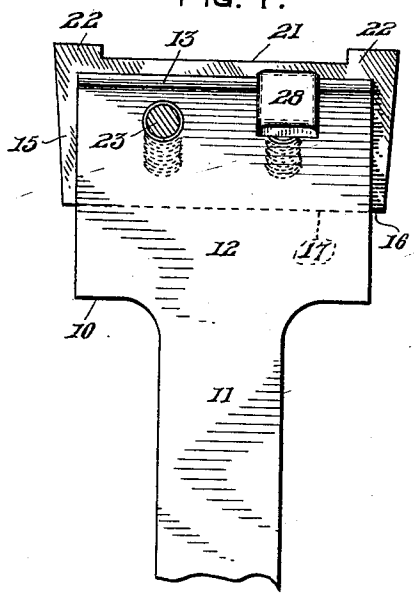


FIG. 2.

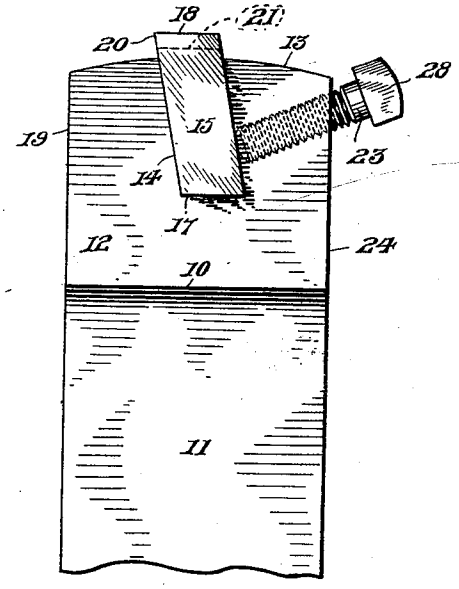


FIG. 4.

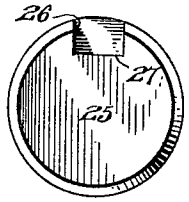


FIG. 5.

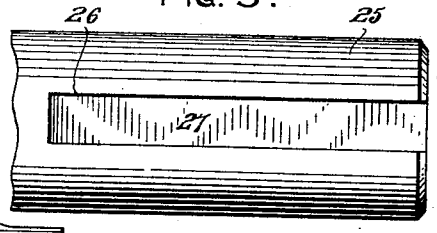


FIG. 3.

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INTERCHANGEABLE TOOL FOR SLOTTING KEYWAYS.

1,318,830. Specification of Letters Patent. Patented Oct. 14, 1919.

Application filed April 29, 1919. Serial No. 293,441.

To all whom it may concern:

Be it known that I, GEORGE BARTLETT, a citizen of the United States of America, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Interchangeable Tools for Slotting Keyways, of which the following is a specification.

The primary object of the invention is the provision of a tool having interchangeable cutters whereby keyways of different width may be finished by the same tool when carried by a slotter or planer.

A further object of the invention is to provide a finishing tool for simultaneously cutting away the opposite sides of a keyway or slot, the tool being also capable of widening keyways which are already cut in a member such as a shaft or axle.

A still further object of the invention is the provision of a tool for finishing slotted or cut keyways in iron or steel axles the same being serviceable in finishing different sized keyways rendering it unnecessary to have a separate tool for each size of keyway to be finished, the structure possessing great strength and utility as well as being easy and inexpensive to manufacture.

With these general objects in view and others that will appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings, and then claimed.

In the drawing forming a part of this application, and in which like reference characters refer to corresponding parts throughout the several views,

Figure 1 is a rear elevation of the invention with parts broken away,

Fig. 2 is a side elevation thereof,

Fig. 3 is a front elevation of the same illustrated in the act of finishing a keyway,

Fig. 4 is an end elevation of a shaft showing one form of keyway cut therein and

Fig. 5 is a plan view thereof.

Referring more in detail to the drawing, my invention comprises a tool post 10 of substantially T-shaped form having a shank 11 and a head 12. The outer face 13 at the opposite side of the head 12 from the shank 11 is arcuate transversely of the head, a slot 14 extending longitudinally through the head 12 at a slight inclination being adapted for the removable reception of a cutter 15.

The cutter 15 is substantially trapezoidal in shape but is rhomboidal in cross section, the cutter being fitted in the slot 14 for operation with its shorter side 16 seated upon the bottom 17 of the slot 14 and with the longer side 18 of the cutter projecting a suitable distance from the slot outwardly of the arcuate face 13 of the head. When so positioned, the cutter 15 is inclined toward the forward side 19 of the head 12 with the adjacent forward longitudinal edge 20 of the cutter side 18 adapted for operating upon the work.

The longer side 18 of the cutter is cut away as at 21 as much as desired forming terminal cutting portions 22 upon the cutter 15 at the opposite corners of the cutter. Set screws 23 are threaded at an inclination through the rear side 24 of the head 12 for engaging the rear side of the cutter 15 at substantially right angles securing the cutter in the head slot 14 during the active operation of the tool.

The shank 11 is held in any desired manner in a metal-working machine such as a planer whereby the tool post 11 may be forcibly moved longitudinally of a shaft or axle such as 25, bringing the sharp edges 20 of the portions 22 of the cutter 15 into planing engagement therewith at opposite sides of the keyway or slot 26 longitudinally provided in the axle 25.

By sufficient repetitions of the planing operation, the opposite sides of the keyway 26 are planed down and finished to the bottom 27 of the keyway, making the finished keyway the desired width by the provision of a cutter 15 of suitable length.

It will be understood that the screws 23 may be readily turned by means of their heads 28 for retracting the same from the cutter 15, permitting the cutter to be removed and a new cutter inserted, in the tool post.

It is understood that in the cutting of keyways for shafts and axles that the same is roughly cut therein to the desired depth, my tool being serviceable for finishing sides of the keyway rendering them smooth and serviceable for use. The opposite ends of the cutter 15 being convergent away from the cutting side 18 thereof decreases the friction between the ends of the cutter 15

and the finished sides of the keyway 26 during operation as best illustrated in Fig. 3 of the drawing.

While the form of the invention herein shown and described is what is believed to be the preferred embodiment thereof, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

What I claim as new and desire to secure by Letters Patent is:—

1. A tool comprising a T-shaped post having an arcuate end face provided with a slot inclined toward the forward side of the post, a trapezoidal shaped cutter rhomboidal in cross section removably fitted within said slot with its longer side projecting from the arcuate face of the post and securing means for the cutter.

2. A device of the class described comprising a shank, a cross head upon the shank with its outer face curved transversely of the head, the head being provided with a longitudinal slot inclined toward the forward side of the head, a trapezoidal shaped cutter rhomboidal in cross section seated within said slot with its shorter side upon the bottom of said slot and its longer side projecting from the slot outwardly of said curved face with the tapered ends of the cutter outwardly of the ends of said head, the longer side of said cutter being cut away forming terminal cutting portions at the opposite corners of the cutter, the edges of said cutting portions adjacent the forward side of the head being adapted for engaging the work during operation and securing means for said cutter carried by the head.

3. A device of the class described comprising a shank, a cross head upon the shank, with its outer face curved transversely of the head, the head being provided with a longitudinal slot inclined toward the forward side of the head, a trapezoidal shaped cutter rhomboidal in cross section seated within said slot with its shorter side upon the bottom of said slot and its longer side projecting from the slot outwardly of said curved face with the tapered ends of the cutter outwardly of the ends of said head, the forward edge of the longer side of the cutter being adapted for operating upon the work during the forward movement of the tool, set screws threaded through said head substantially perpendicular to said slot adapted for restrainingly engaging the cutter when operatively positioned in the latter.

In testimony whereof I affix my signature.

GEORGE BARTLETT.

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