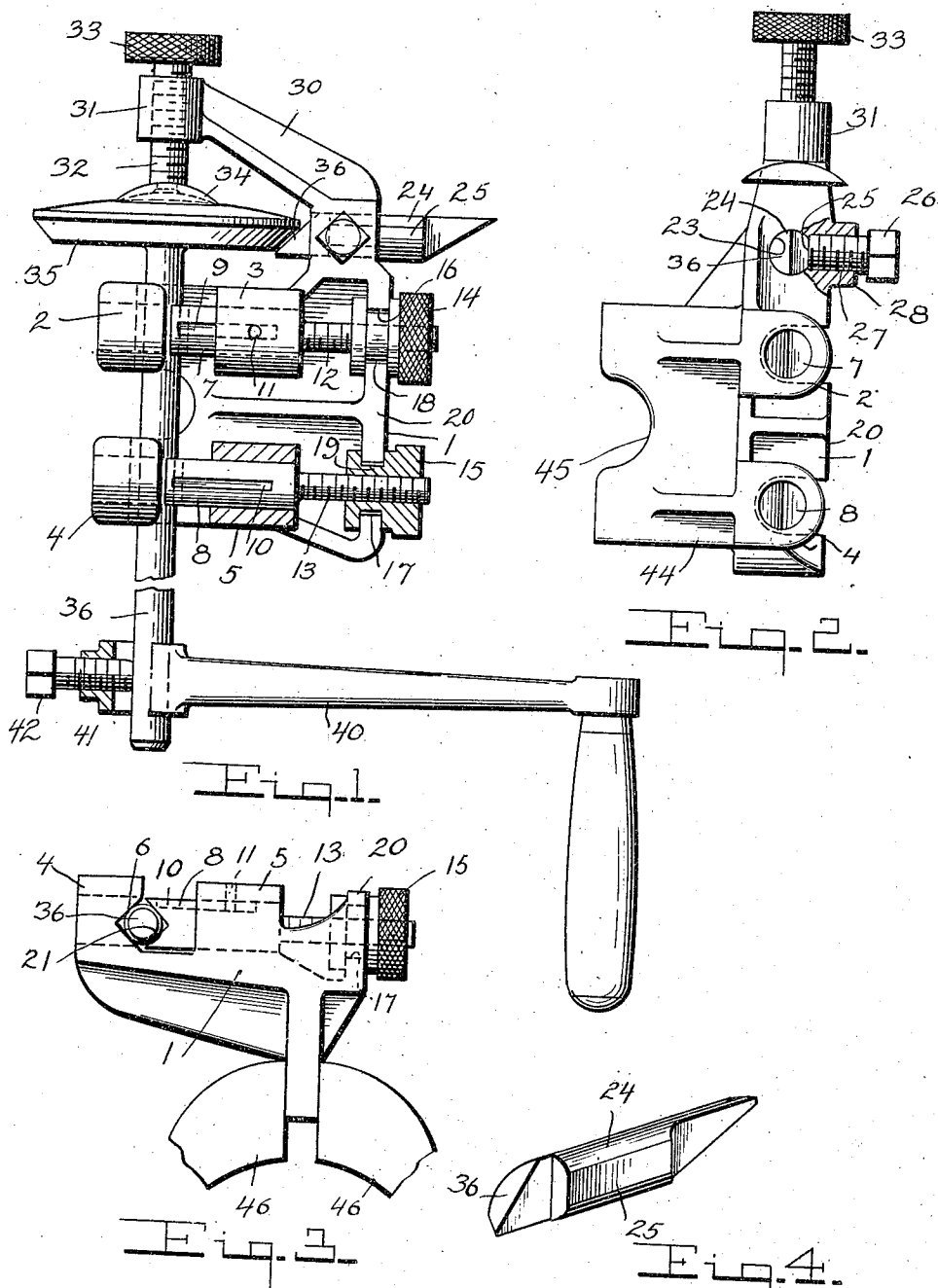


J. W. BROOKS.
 VALVE REFACING TOOL.
 APPLICATION FILED JAN. 30, 1915.

1,237,165.

Patented Aug. 14, 1917.



Witnesses

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VALVE-REFACING TOOL.

1,237,165.

Specification of Letters Patent. Patented Aug. 14, 1917.

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To all whom it may concern:

Be it known that I, JOHN W. BROOKS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Valve-Refacing Tools; 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 tools for refacing valves, and the primary object of the invention is to provide a tool as specified, which carries an adjustable bit or cutting blade for engagement with the face of a valve for refacing the same.

Another object of this invention is to provide a tool as specified which embodies a plurality of jaws for receiving a valve stem, and a plurality of adjustable socketed pins for holding the valve stem within the jaws.

A still further object of this invention is to provide a tool as specified wherein the cutting blade is held stationary and the valve rotated, for bringing the entire face of the valve in engagement with the cutting tool, and further to provide an adjustable swiveled disk for engagement with the top of the valve for causing it to run true during rotation.

With the foregoing and other objects in view this invention consists in such novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In describing the invention in detail reference will be had to the accompanying drawings wherein like characters designate like or corresponding parts throughout the several views, and in which:—

Figure 1 is a top plan view of the improved valve refacing tool,

Fig. 2 is a side view of the tool,

Fig. 3 is an end view of the tool showing the same clamped between the jaws of a vise.

Fig. 4 is a detail perspective view of the cutting blade or bit of the tool.

Referring more particularly to the drawings, 1 designates the body portion of the tool, which is constructed of a casting and has sleeves 2, 3, 4 and 5 formed thereon.

The sleeves 2 and 3 are arranged in alinement with each other, and the sleeves 4 and 5 are arranged in alinement with each other. The respective alining sleeves have their facing ends spaced from each other, and the inner sides of the sleeves 2 and 4 have substantially triangularly shaped vertically extending notches 6 formed therein.

The sleeves 3 and 5 have pins 7 and 8 slidably mounted therein, which pins have longitudinally extending keyways 9 and 10 formed therein which receive transversely extending pins 11, for guiding the movement of the pins 7 and 8 and preventing rotary movement thereof within the sleeves 3 and 5. The pins 7 and 8 have reduced externally screw threaded shanks 12 and 13 formed thereupon, which extend rearwardly of the sleeves 3 and 5 and through feed nuts 14 and 15. The feed nuts 14 and 15 have annular recesses 16 and 17 formed therein, which recessed portions of the nuts are seated in cutout portions 18 and 19 which are formed in the transversely extending section 20 of the body 1 of the tool. The feeding nuts 14 and 15 have enlarged exteriorly corrugated heads formed thereupon to provide for the manual rotation of the feed nuts for feeding the pins 7 and 8 toward or from the sleeves 2 and 4. The sleeves 2 and 4 are provided with bores which aline with the bores of the sleeves 4 and 5, and through which the pins 7 and 8 may be moved if it is so desired, or for inserting the pins into the sleeves 3 and 5. The pins 7 and 8 have their outer ends provided with substantially triangularly shaped sockets 21, as is clearly shown in Fig. 3 of the drawing.

The body portion 1 of the tool is provided with a bore 23 extending therethrough, parallel to the sleeves 3 and 5, which bore is provided for receiving a facing or cutting bit or tool 24. The tool 24 has a flat side 25 formed thereon, which is provided for engagement by the inner end of a set screw 26. The set screw 26 is adjustably mounted in an internally screw threaded bore 27, which extends transversely through the bore 23 and through a box 28 which is formed upon the casting or body 1. By the adjusting of the set screw 26, the bit or tool 24 may be held in various adjusted positions within the bore 23.

The body or casting 1 of the tool has an

arm 30 formed integrally therewith, and extending upwardly and forwardly from the upper end of the casting, above the bore 23.

The arm 30 has a collar or sleeve 31 formed upon the upper end thereof, the bore of which sleeve extends transversely to the bores of the sleeves 2, 3, 4 and 5. A pin 32, is adjustably carried by the sleeve 31 and it has a head 33 formed upon its upper end, the outer periphery of which head is corrugated for facilitating the manual rotation of the same. A disk 34 is swivelly connected to the lower end of the pin 32, beneath the under surface of the sleeve 31. The disk 34 is provided for engagement with the top of a valve disk, indicated at 35, in Fig. 1 of the drawings.

In the operation of the improved valve refacing tool, a valve stem, indicated at 36 in the drawings, is positioned between the facing ends of the sleeves 2 and 3 and 4 and 5, and the pins 7 and 8 are adjusted, for engaging the valve stem and holding it within the socketed ends of the pins and of the sleeves 2 and 4. The valve disk 35 is positioned so that the face thereof will be positioned for engagement by the bit or tool 24, and this tool is adjusted within the bore 23, so that the forward cutting edge 36 thereof will engage the face of the valve disk 35. The pin 32 is then adjusted, for causing the disk 34 to engage the top of the valve disk 35. The bit 24 is then adjusted, so that the cutting edge 36 will engage the face of the bit. After the valve disk and stem have been properly connected to the tool, a crank handle 40 is secured to the protruding end of the valve stem 36. The crank handle 40 has a sleeve 41 formed thereupon, for receiving the valve stem. A set screw 42 extends transversely through the sleeve 41 for engagement with the valve stem 36 for holding it in firm binding engagement with the sleeve, for rotation upon rotation of the crank handle 40. The rotation of the crank handle 40 will consequently rotate the valve disk 35, which will reface the tool, by the engagement between the face of the valve disk and the tool 24.

The body 1 of the tool has a transversely extending web or plate 44 formed thereupon, which is provided with a semi-circular shaped cut out portion 45 communicating with one edge thereof. The plate 44 is provided for seating between the clamping jaws of a vise as is indicated at 46 in Fig. 3 of the drawing, for holding the tool rigid during the refacing of the valve. If it is desired, the tool may be attached to any type of a

work bench, and the opening 45 utilized for receiving a section of a bolt, for clamping the device securely upon the bench.

The cutting tool 24 has cutting edges formed upon both of its ends, which cutting edges are beveled at different angles, with respect to each other for refacing valve faces of different angularities.

From the foregoing description taken in connection with the accompanying drawings the advantages of construction and of the method of operation of the improved valve refacing tool will be readily apparent to those skilled in the art to which this invention appertains and, while in the foregoing description, the principle of the operation of this invention has been described together with various features of construction, it is to be understood that certain minor features of construction, combination and arrangement of parts may be altered to suit practical conditions provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:—

In a valve refacing tool, a body, spaced pairs of sleeves carried by the body, the sleeves forming one pair extending parallel with the sleeves forming the other pair and being spaced from each other and having their bores alined, one of the sleeves forming each pair having a valve stem-receiving notch therein, valve stem-engaging pins slidably mounted in the other sleeves of the pairs and having slots in the sides thereof and having valve stem-receiving notches on the inner ends thereof alining with the notches in the first-mentioned sleeves, pins extending transversely in the last-mentioned sleeve and received by the slots in the first-mentioned pins for preventing rotation of the first-mentioned pins, an extension formed on the body in spaced relation to the last-mentioned sleeves and having openings therein alining with the bores of the said last-mentioned sleeves, nuts rotatably mounted in the openings in the extension, and threaded shanks carried by the first-mentioned pins and received by the nuts, whereby to effect sliding of the first-mentioned pins in the direction of the notched sleeves when the nuts are rotated in one direction.

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

JOHN W. BROOKS.

Witnesses:

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