E. G. THOMPSON.

VALVE GRINDING TOOL.

APPLICATION FILED OCT. 2, 1919.

1,352,638. Patented Sept. 14, 1920.

FIG. 1 FIG. 2 FIG. 3

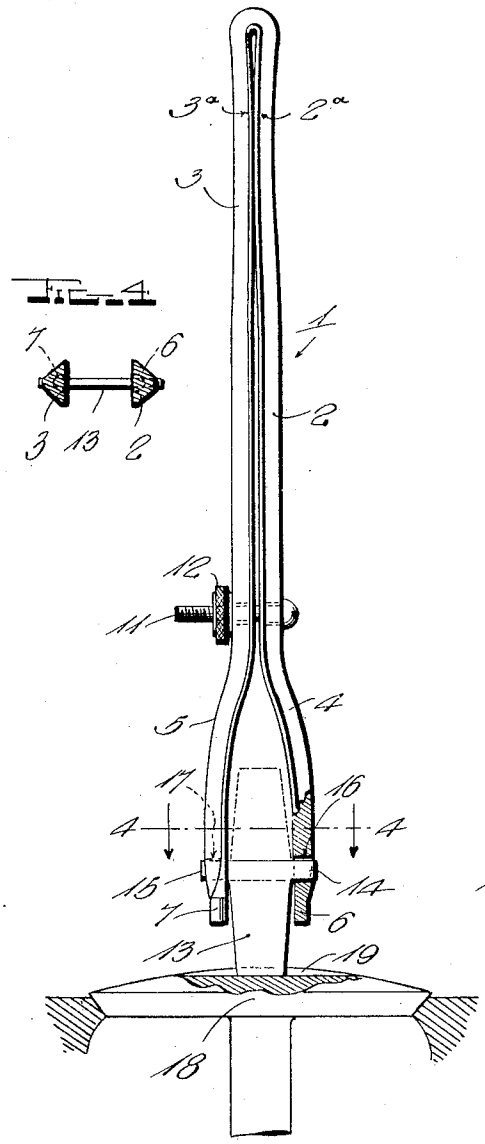
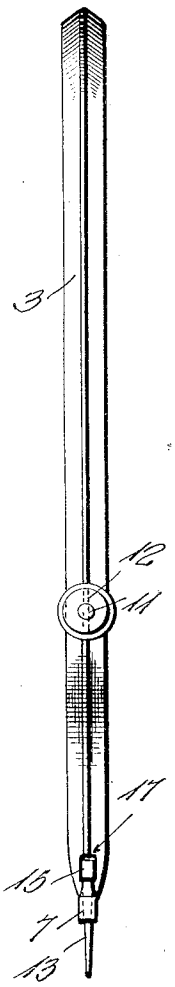
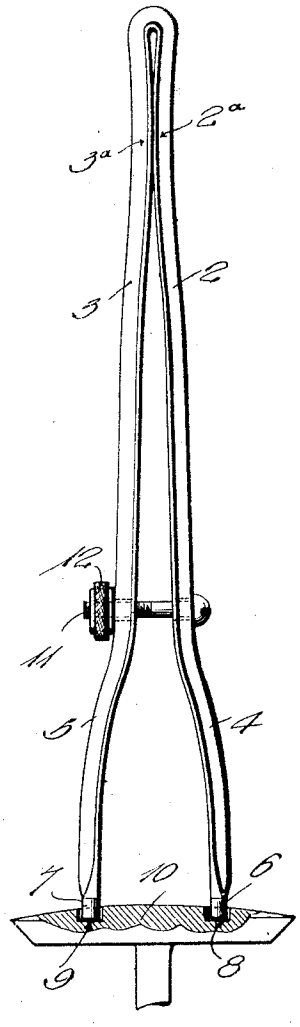


FIG. 4





Witness

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UNITED STATES PATENT OFFICE.

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VALVE-GRINDING TOOL.

1,352,638. Specification of Letters Patent. Patented Sept. 14, 1920.

Application filed October 3, 1919. Serial No. 327,869.

To all whom it may concern:

Be it known that I, EDDIE G. THOMPSON, a citizen of the United States, residing at Devils Lake, in the county of Ramsey and State of North Dakota, have invented certain new and useful Improvements in Valve-Grinding Tools; and I do 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 improvements in valve grinding tools, and it is especially designed to be used with valves having either spanner recesses or a kerf in their upper faces for the insertion of a valve grinding tool therein.

The principal object of the invention is to provide a tool of the above mentioned type which is simple and effective, strong, durable, inexpensive, and one which may be adjusted to fit any sized valve.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same;

Figure 1 is a front elevation, partly in section, of a tool constructed in accordance with my invention, the same being illustrated in connection with a valve of the slotted type.

Fig. 2 is a side elevation of the tool.

Fig. 3 is a view similar to Fig. 1, the screw driver blade being removed and the tool being used with a valve having spanner recesses therein.

Fig. 4 is a transverse sectional view on the plane of the line 4—4 of Fig. 1.

In the drawings, wherein for the purpose of illustration, is shown a preferred form of my tool, the numeral 1 designates a single strip of resilient metal, preferably triangular in cross section, bent upon itself to form a pair of parallel oppositely disposed legs 2 and 3. The upper and intermediate portions of the legs are curved inward as at 3ª and 3ª and have their flat faces disposed substantially close together, which construction will serve to make them automatically spring outward or away from each other. The lower portions are flared or bent outwardly at 4 and 5 to form a space, the purpose of which will hereinafter be more fully set forth. Each of the legs 2 and 3 is reduced at its lowest extremity and rounded in cross section, as at 6 and 7, thus adapting them to engage in the usual spanner recesses or key sockets 8 and 9 formed in the upper face of the valve 10. Just above and close to the bent out portions 5 and 6 of the legs and extending through the legs at this point is a screw threaded bolt 11 which has a thumb nut 12 on its threaded end, which, as is obvious, serves to contract or expand the legs 2 and 3.

Associated with and normally held between the legs 1 and 2 is a screw driver blade or tapered plate 13. This blade is provided with outwardly projecting studs or lugs 14 and 15 on its opposite sides which enter into the elongated slots or openings 16 and 17 formed in the legs adjacent the ends 6 and 7, whereby the blade is held in the desired position. Hence, it is obvious that the screw driver blade is used in connection with the type of valve shown at 18 which has a slot or kerf 19 formed in its upper face.

When it is desired to use the tool in connection with the type of valve shown at 18 the nut 12 will be tightened after the blade 13 has been placed in the position illustrated in Fig. 1 and the tool manipulated in the ordinary manner. On the other hand, when the tool is used on a valve having spanner recesses in its upper face, the nut 12 will first be loosened, thus automatically expanding the legs, and permitting the blade to be removed therefrom and reversed as shown in dotted lines in Fig. 1. When in this position the legs may be spaced farther away from, or toward each other within the limits of the length of the lugs 14 and 15, thus permitting the rounded ends 6 and 7 of the legs to engage in the usual recesses in a valve of the type shown at 10.

It will be seen that by this construction the screw driver blade will always be held in the space between the portions 4 and 5 of the legs, whether in use or out of use, and when in inoperative position will not interfere with the use of the tool in connection with valves having holes in their upper faces.

I wish to emphasize here again that the blade will, by preference, be normally held between the legs 1 and 2, whether in or out of use, thus preventing it from being misplaced. However, in some cases valves simi-

lar to that shown at 10 oftentimes have spanner recesses which are a considerable distance apart and it will be necessary to remove the plate 13, as shown in Fig. 3, in order to effectively use the tool.

My tool is readily applicable to both types of valves hereinbefore set forth and is adjustable to valves of any size. It will be found that because of triangular shape it may be more effectively rotated between the palms of the hands in grinding valves. Of course, the tool may also be rotated by an ordinary brace. In some instances too, a wooden handle will be used.

It is to be understood that the form of my invention herein shown and described is to be taken as a preferred form of the same and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, what I claim is:

1. A valve grinding tool comprising a pair of resilient legs having their free ends movable toward and from each other, the free extremities of the legs being shaped to engage in the spanner recesses of a valve, a screw driver blade disposed between said legs, co-acting means between the blade and the legs to prevent rotation of the former and also to permit it to be positioned to extend beyond the extremities of the legs for engagement with a kerf in a valve, or reversed and positioned in the space between the legs in inoperative position, and means to retain the blade in either of said positions.

2. A valve grinding tool, comprising a pair of legs having their free ends movable toward and from each other, the lower extremities of the legs being shaped to engage in the spanner recesses of a valve, said legs being also provided with elongated slots adjacent their ends, a reversible blade having outwardly extending studs thereon adapted to enter said elongated slots, whereby said blade may be positioned to enter into a kerf or in a valve when in operation or may be reversed and positioned between the legs when in inoperative position, and means associated with the legs to cause them to move toward each other.

3. A valve grinding tool, comprising a single strip of spring metal substantially triangular in cross section bent upon itself to form oppositely disposed parallel legs, the upper and intermediate portions of said legs being substantially close together and the lower free ends thereof being flared outwardly to form a space, the extreme ends of said legs being reduced and substantially round and adapted to enter in spanner recesses in a valve, each of said legs being provided with elongated slots adjacent the reduced ends, a removable and reversible blade having lugs thereon, said lugs fitting into the elongated slots in the legs, and means to contract said legs, whereby the blade may be moved to operative or inoperative position, said reduced ends of the legs being available for engagement with the spanner recesses valve when the blade is in inoperative position.

In testimony whereof I have hereunto set my hand.

EDDIE G. THOMPSON