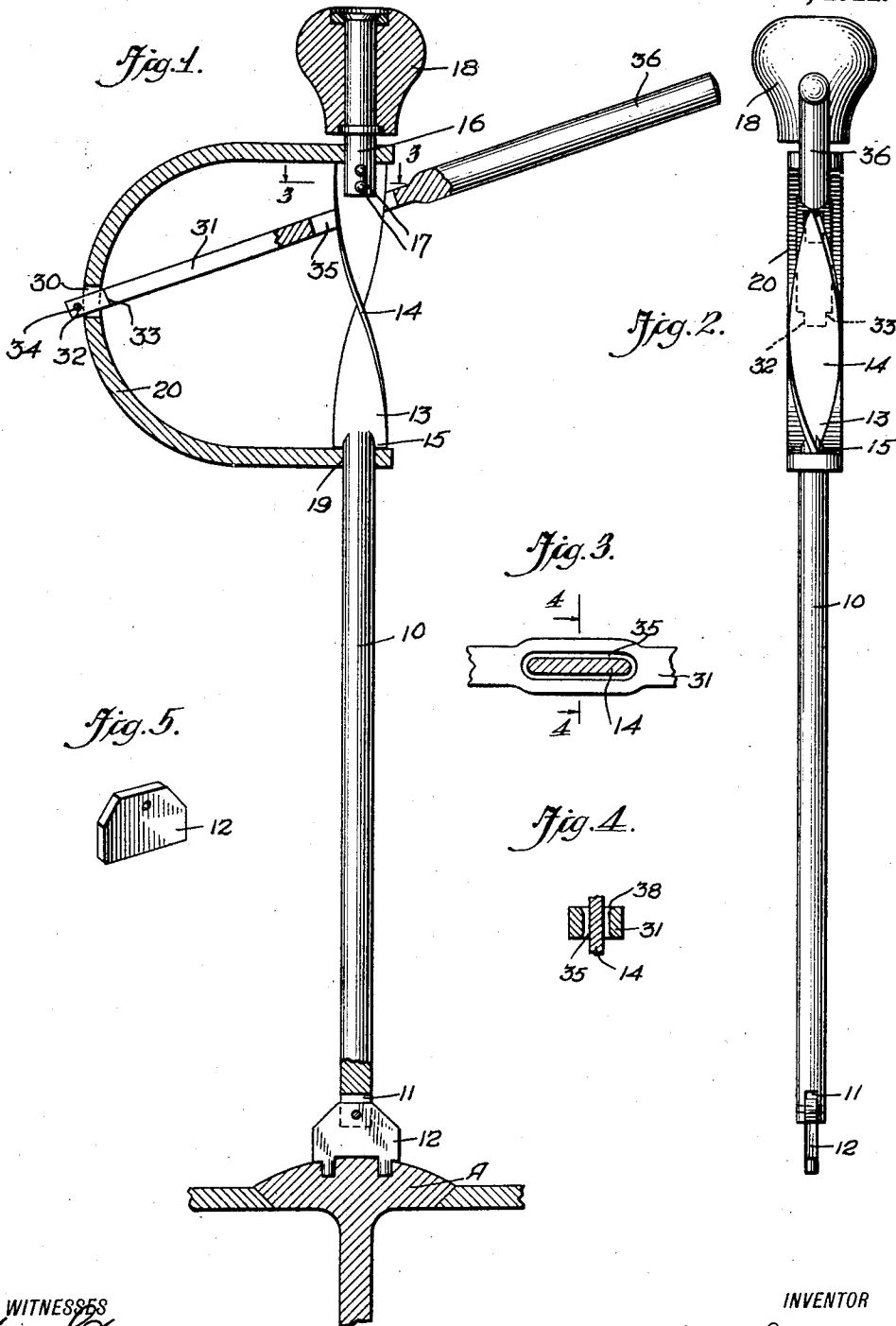


H. GARTELMAN.
VALVE GRINDING TOOL.
APPLICATION FILED MAR. 25, 1921.

1,409,844.

Patented Mar. 14, 1922.



WITNESSES
Frank J. Gagliardi
P. H. Garrison

INVENTOR
HENRY GARTELMAN,
BY *Wm. L. ...*
ATTORNEYS

UNITED STATES PATENT OFFICE.

HENRY GARTELMAN, OF YONKERS, NEW YORK.

VALVE-GRINDING TOOL.

1,409,844.

Specification of Letters Patent. Patented Mar. 14, 1922.

Application filed March 25, 1921. Serial No. 455,596.

To all whom it may concern:

Be it known that I, HENRY GARTELMAN, a citizen of the United States, and a resident of Yonkers, in the county of Westchester and State of New York, have invented a new and Improved Valve-Grinding Tool, of which the following is a full, clear, and exact description.

The present invention relates to new and useful improvements in tools, and it pertains more particularly to a tool especially adapted for grinding the valves of internal combustion motors.

It is the primary objects of the invention to provide a device of this character in which the shank of the tool will be given a partial rotation in opposite directions in an intermittent manner.

It is a further object of the invention to so construct a device of this character that its operation will be simple.

It is a further object of the invention to so construct a tool of this character that the same will be strong and durable regardless of the use and abuse to which it may be put.

With the above and other objects in view, reference is had to the accompanying drawings, in which—

Figure 1 is a view in elevation partly in section of a valve-grinding tool constructed in accordance with the present invention;

Fig. 2 is a view in elevation at right angles to Fig. 1;

Fig. 3 is a detail sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a detail sectional view taken on the line 4—4 of Fig. 3, and

Fig. 5 is a detail perspective view of a different form of valve-engaging element from that shown in Fig. 1.

Referring more particularly to the drawings, the device comprises a shank 10 of suitable material, and said shank is formed circular in cross section throughout a portion of its length. That end of the shank which is lowermost when in its operative position is notched, as at 11, to provide for the reception of a valve-engaging bit or the like 12. The opposite end of the shank 10 is flattened as indicated by the reference character 13, and said flattened portion 13 is given a twist in order that a partial spiral 14 be provided. The flattened portion 13 is squared at the shank end, as indicated by the reference character 15, to provide a shoulder, the purpose of which will be hereinafter described.

Secured to the upper end of the flattened spiral portion 14 of the shank 10, is a short shank 16, said short shank 16 being secured to the flattened portion by means of rivets or the like 17. Rotatably mounted on the short shank 16, is a grasping knob or handle 18.

Carried by the main shank 10 and the short shank 16, is a substantially U-shaped yoke member. The distance between the legs of the U-shaped member 20 is substantially equal to the length of the flattened spiral portion 14, and said main shank 10 and the short shank 16 are mounted near the free ends of these legs in openings provided for the purpose and designated by the reference character 19. The U-shaped member 20 is provided with a notch or cut-out member 30, and pivotally mounted in this notch or cut-out portion 30, is a lever 31. The lever 31 has its pivoted end reduced as indicated by the reference character 32, to provide a shoulder 33, adapted to engage the U-shaped member 20, and passed through said reduced end is a pin or the like 34, which prevents accidental displacement of the reduced end of the lever relative to the notch or cut-out portion 30. This lever 31 is provided with an elongated slot 35 adapted to receive the flattened spiral portion 14, as more clearly shown in Fig. 3. Beyond the slot 35, the pivoted lever 31 is rounded to form a handle 36, by means of which the pivoted lever may be rocked about its pivotal point in the U-shaped member 30. In order to facilitate the operation of the device and to remove any possibility of the pivoted lever 31 binding with respect to the spiral member 14, the edges of the slot 35 are rounded as indicated by the reference character 38, and the edges of the flattened spiral member 14 are likewise rounded.

The device is assembled in the following manner:

The lower leg of the U-shaped member is slipped over the lower end of the shank 10 and the U-shaped member is moved therealong until the lower leg thereof engages the squared portion 15 of the spiral member 14. The short shank 16 is now inserted through the opening in the upper end of the U-shaped member, and said short shank is then riveted to the spiral member 14, it being understood that said spiral member is first inserted into the slot 35 of the pivoted lever 31.

In operation, the bit 12 is engaged with the valve to be ground, said valve being indicated by the reference character A in Fig.

1. The handle 18 is now grasped in one hand and with the other hand the operator grasps the handle 36 of the pivoted lever 31, the said lever 31 rocking about its pivotal point. Upon the rocking movement of the pivoted lever 31, owing to the engagement of the spiral member 14 with the slot 35, the shank 10 will be given a partial turn as the pivoted lever is depressed. Upon lifting the pivoted lever 31, the shank 10 will be given a partial rotation in the opposite direction.

By this construction it is apparent that upon rapid movement of the pivoted lever 31 about its pivotal point, the shank 10 will be given a plurality of partial turns and owing to the engagement of the bit 12 with the valve A, will impart said turns to the valve A and grind the same to its seat. It is noted that the spiral member 14 is of such construction that a complete revolution will not be given to the shank 10, and this is desirable in that the best results in valve grinding are had when the valve is not given one

or more complete revolutions. In order to more thoroughly grind the valve throughout the entire circular seat, the tool and valve are turned relatively to the seat and by this various positioning of the valve and tool relatively to the seat, the entire surface will be ground.

I claim—

A valve grinding tool including a shank, a U shaped member having one of its ends rotatably carried by said shank, a flattened spiral portion forming a continuation of said shank and extending between the arms of said U shaped member, a second shank secured to the outer end of said flattened portion and extending through one of the arms of said U shaped member, a handle rotatably attached to said second shank, a lever having one of its ends pivotally carried by said U shaped member at a point substantially intermediate the ends of the latter, said lever being formed with a slot straddling said spiral portion, and in slidable contact therewith, and a handle portion provided adjacent the outer end of said lever.

HENRY GARTELMAN.