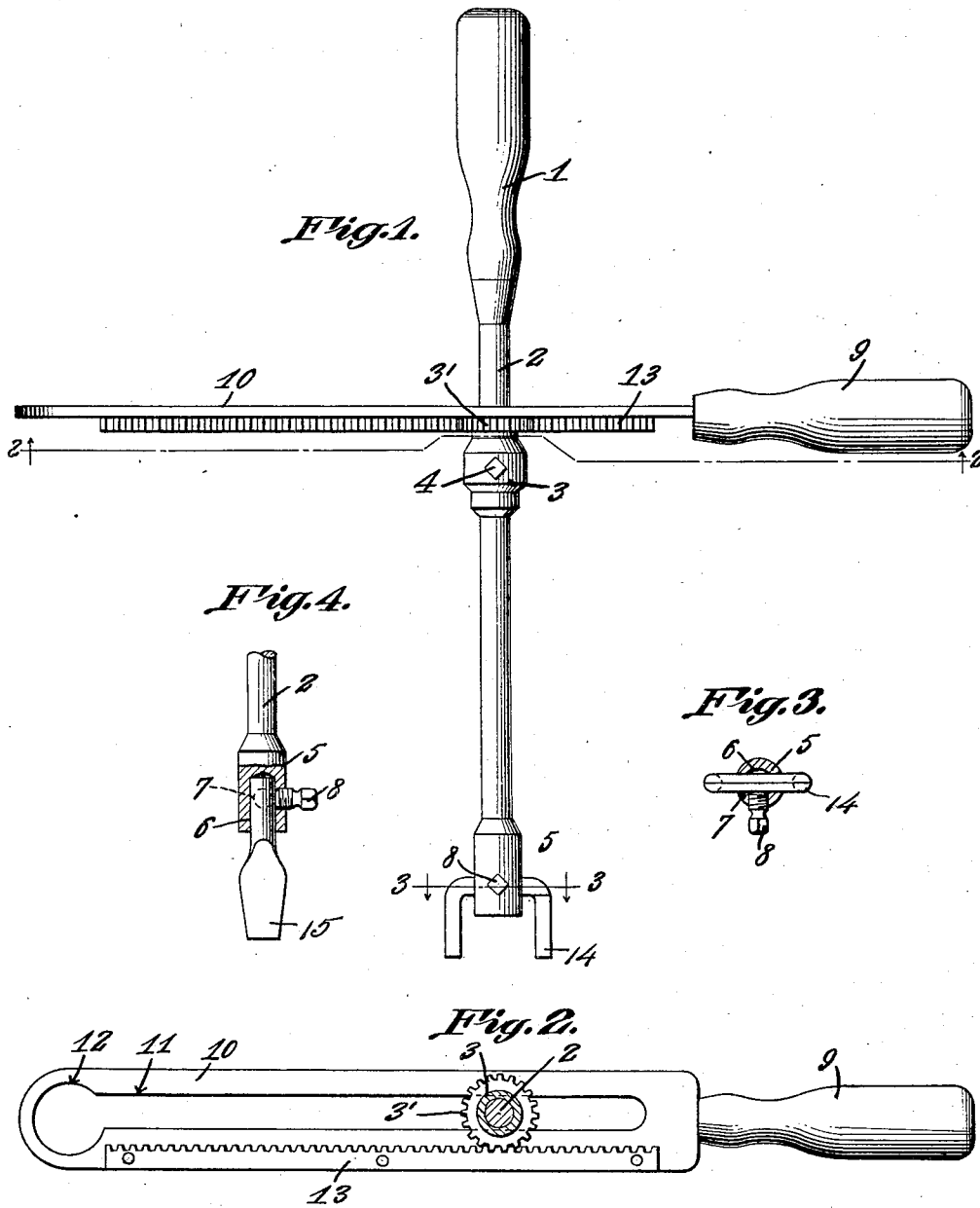


W. DE VAUL.  
 VALVE GRINDING TOOL.  
 APPLICATION FILED OCT. 15, 1917.

1,305,200.

Patented May 27, 1919.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM DE VAUL, OF OCEAN VIEW, NEW JERSEY, ASSIGNOR OF ONE-HALF TO  
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## VALVE-GRINDING TOOL.

1,305,200.

Specification of Letters Patent.

Patented May 27, 1919.

Application filed October 15, 1917. Serial No. 196,728.

*To all whom it may concern:*

Be it known that I, WILLIAM DE VAUL, a citizen of the United States, residing at Ocean View, in the county of Cape May and State of New Jersey, have invented a new and useful Valve-Grinding Tool, of which the following is a specification.

The subject of this invention is a valve grinding tool intended for use in grinding the valves of gas engines.

The main object of the invention is the provision of a tool which will rapidly revolve the valve;

Another object is to provide a tool which will reverse the direction of rotation of the tool;

Still another object is to provide a simple, durable, and efficient tool.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

A practical embodiment of the invention is shown in the accompanying drawing, wherein:

Figure 1 is a side elevation of the tool;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a section on the line 3—3 of Fig. 1;

Fig. 4 is a fragmentary detail of the tool head partly in section.

Referring to the drawing by numerals of reference:

The device consists of a tool holding member, comprising a handle 1 in which turns a rod or shaft 2, at one end of which shaft the handle is mounted. As any one of the many and well known means for connecting a shaft to a handle to turn or rotate therein may be employed, and as the same forms no part of the present invention, a showing of such structure has not been made in the drawings. A sleeve 3 slides on the shaft 2 and is formed with a pinion 3' at its upper end. This pinion may be integral with, or welded or otherwise firmly affixed to the

sleeve. The sleeve is adjustable longitudinally of the shaft 2 and may be secured in its adjusted position by means of a set screw 4.

The shaft 2 is formed with an enlarged end 5 which is bored longitudinally to form a socket 6. A transverse bore 7 is also formed in the end 5 which bore communicates with the socket 6, and the end 5 is also tapped to receive a set screw 8 which may be projected into the socket 6 in the plane of and at right angles to the transverse bore 7. The purpose of this screw is to lock a tool in place in the socket or transverse bore.

An operating member forms a part of each tool and consists of a handle 9 from which extends a bar 10 provided with a longitudinal slot 11 which merges at one end, preferably the outer end, into an enlarged portion 12.

As will be understood, the purpose of this enlarged opening 12 is to permit the operating member to be placed upon or removed from the tool holding member.

A rack 13 is secured by screws or otherwise along one side of the bar 10 and is adapted to mesh with the pinion 3'.

A yoke-like spanner 14 is adapted to be held in the tool holder, having its cross bar split longitudinally and inserted in the transverse bore 7 in which it may be held in adjusted position by the set screw 8. This spanner is used for the usual type of valve and is adjusted to fit various sizes.

For slotted valves the edged tool 15 shown in Fig. 4, is provided. Its stem is inserted in the socket 6 and is firmly bound therein by the set screw 8.

In practice the device is operated in the following manner:

The set screw 8 is loosened and the spanner 14 adjusted to a proper width to permit the ends of its arms to enter the sockets in the valve. The operating member is placed in position on the tool holder; the spanner ends inserted in the sockets of the valve; the handle 1 gripped with one hand; and the handle 9 grasped in the other hand and the operating member reciprocated. This causes rapid revolution of the valve in one direction upon outward stroke of the operating member and rapid revolution in the opposite direction upon the return stroke.

When a slotted valve is to be ground the

spanner 14 is removed and the tool 15 put in place. The operation is then the same as that just described.

5 Having thus described the invention, what is claimed as new and sought by Letters Patent, is:

10 In a device of the class described, a shaft; a tool holder on one end of the shaft; an enlarged handle wherein the other end of the shaft is journaled; a relatively thin and light operating plate having a closed-ended slot receiving the shaft, one end of the slot being enlarged to permit the passage of the handle therethrough after the tool holder has been placed in operative position with

respect to the work; a strip in contact with the plate and having a rack; means for securing the strip to the plate; a pinion adjustable longitudinally of the shaft and meshing into the rack; and means for securing the pinion to the shaft in adjusted positions longitudinally of the shaft. 15 20

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM DE VAUL.

Witnesses:

CHARLES WHITTINGTON,  
CHARLES CAMP.

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