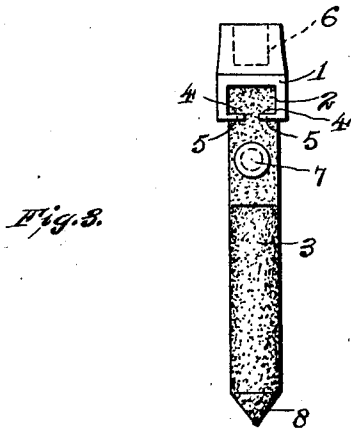
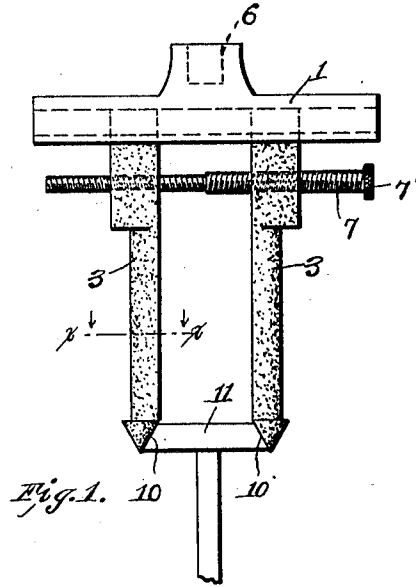
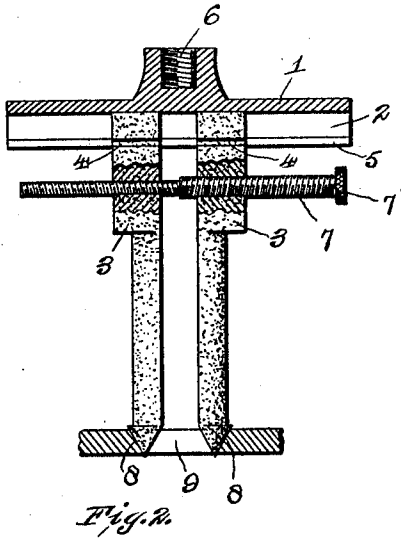


A. OKERSON.
VALVE GRINDING DEVICE.
APPLICATION FILED OCT. 28, 1911.

1,020,218.

Patented Mar. 12, 1912.



Witnesses:

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UNITED STATES PATENT OFFICE.

ADOLPH OKERSON, OF ISHPEMING, MICHIGAN.

VALVE-GRINDING DEVICE.

1,020,218.

Specification of Letters Patent.

Patented Mar. 12, 1912.

Original application filed August 7, 1911, Serial No. 642,743. Divided and this application filed October 28, 1911. Serial No. 657,281.

To all whom it may concern:

Be it known that I, ADOLPH OKERSON, a citizen of the United States, and a resident of the city of Ishpeming, county of Marquette, and State of Michigan, have invented certain new and useful Improvements in Valve-Grinding Devices, of which the following is a specification.

My invention relates to improvements in grinding devices adapted for use in the grinding of valves and valve seats, the present application being a division of my co-pending application, Serial No. 642,743, filed August 7th, 1911, for valve grinding devices.

The object of this invention is the production of a valve grinding device which will be of economical construction and efficient in operation.

Other objects will appear hereinafter.

With these objects in view my invention consists in the combination and arrangement of parts hereinafter described and claimed.

My invention will be more readily understood by reference to the accompanying drawing forming a part of this specification and in which,

Figure 1 is a side elevation of a grinding device, embodying my invention, the same being shown arranged for the grinding of a valve, Fig. 2 is a sectional view of the construction shown in Fig. 1, the same being shown arranged for the grinding of a valve seat, Fig. 3 is an end elevation of the grinder, and Fig. 4 is a section taken on line $x-x$ of Fig. 1.

The preferred form of construction as illustrated in the drawing, comprises a holder 1 which is of elongated and preferably rectangular form. The member 1 is formed with a channel 2 in its under side adapted for the reception of the upper end portions of the grinding members 3, said grinding members being slidably mounted in the holder 1 so that the same may be moved toward and from each other. Opposite sides of the members 3 adjacent their upper ends are provided with grooves 4 for engagement with flanges 5 of the member 1 whereby said grinding members are secured in position in the holder 1 as will be readily understood so as to permit only of sliding movement of said grinding members longitudinally of said holder.

Provided in the upper side of the mem-

ber 1 midway the extremities thereof is a threaded socket 6 whereby the holder 1 may be secured upon the lower end of a drill shank or other suitable tool.

The members 3 are of similar construction and formed of any suitable grinding material, the same being operatively connected by a screw 7. The opposite ends of the screw 7 are oppositely screw-threaded for engagement with the members 3 and so that rotation of said screw will effect simultaneous movement of the members 3 toward or from each other and depending upon the direction in which the screw is rotated. One end of the screw is provided with a knurled member 7' to facilitate ready manual rotation thereof. The outer end of the screw 7 is of less diameter than the opposite or inner end thereof so as to permit of assemblage of the parts as will be readily understood.

Each of the grinding members 3 is preferably semi-circular in cross-section, the lower or operative ends thereof being V-shaped in longitudinal section or substantially conical in form, the outer sides or surfaces 8 thereof being adapted for use in the grinding of the valve seat shown at 9 in Fig. 2, the inner sides or surfaces 10 being designed for use in the grinding of the valve head which is shown at 11 in Fig. 1. By thus forming the ends of the grinding members it will be observed that the grinding of the valve seat and the valve head may be effected independently and with great exactness so that the contacting surfaces thereof will closely fit each other. The portion of the grinding members 3 above the heads or lower ends thereof is reduced as shown, so that when the same is used in grinding a valve seat the sides of the grinding members will not contact with the sides of the opening in the valve casing. The upper ends of the members 3 are preferably enlarged as shown in order to strengthen the same at the points of connection thereof with the adjusting screw 7. The grinding members 3 are so secured in the member 1 that when worn the same may be readily replaced by others or removed for trimming of the operative surfaces 8 and 10 thereof.

A valve grinder of the construction set forth is durable and economical in construction and the same is of high efficiency in use. While I have illustrated and described the preferred form of construction for carrying

my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I therefore do not wish to be limited to the precise details of construction as set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. A grinder of the class described, comprising a holder; grinding members having corresponding ends slidably mounted in said holder; and a screw engaging said grinding members for simultaneously moving said members toward and from each other, substantially as described.

2. A grinder of the class described, comprising a holder; grinding members having corresponding ends slidably mounted in said holder; a screw connecting said grinding members and having its opposite ends oppositely screw-threaded for engagement with said grinding members for simultaneously moving the same toward and from each other, and a head on said screw for rotating the same, substantially as described.

3. A grinder of the class described, comprising a channel holder; grinding members having corresponding ends slidably mounted in the channel of said holder; and a screw having oppositely threaded opposite ends for engagement with said grinding members for moving the same toward and from each other, the operative ends of said grinding members being substantially V-shaped in longitudinal section, substantially as described.

4. A grinder of the class described, com-

prising an elongated holder having a channel in one side thereof; grinding members having corresponding ends slidably mounted in said channel, there being grooves in the opposite sides of said grinding members for engagement with the flanged edges of said channel; and a screw having oppositely threaded opposite ends engaging said grinding members for moving the same toward and from each other, substantially as described.

5. A grinder of the class described, comprising a channel holder; grinding members having corresponding ends slidably mounted in said holder; and a screw for moving said grinding members toward and from each other, substantially as described.

6. A grinder of the class described, comprising a rotatable holder; grinding members adjustably mounted on said holder on opposite sides of its axis of rotation; and means for adjusting said grinding members toward and away from said axis of rotation, substantially as described.

7. A grinder of the class described, comprising a rotatable holder; grinding members adjustably mounted on said holder on opposite sides of its axis of rotation; and means for simultaneously adjusting said grinding members toward and away from said axis of rotation, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADOLPH OKERSON.

Witnesses:
DAVID ERICKSON,
EMIL WERNER.