C. RUIZ.

VALVE GRINDING DEVICE.

APPLICATION FILED OCT. 22, 1919.

1,333,100.

Patented Mar. 9, 1920.

FIG-3

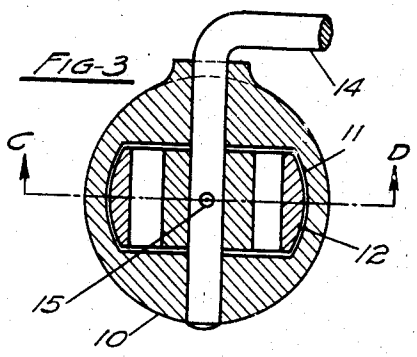


FIG-4

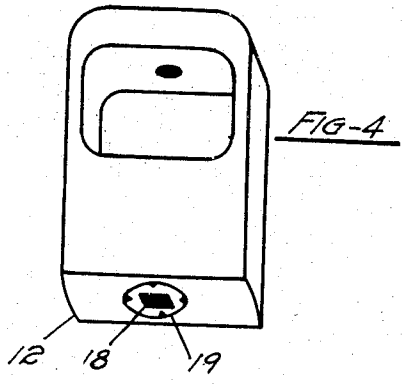


FIG-2

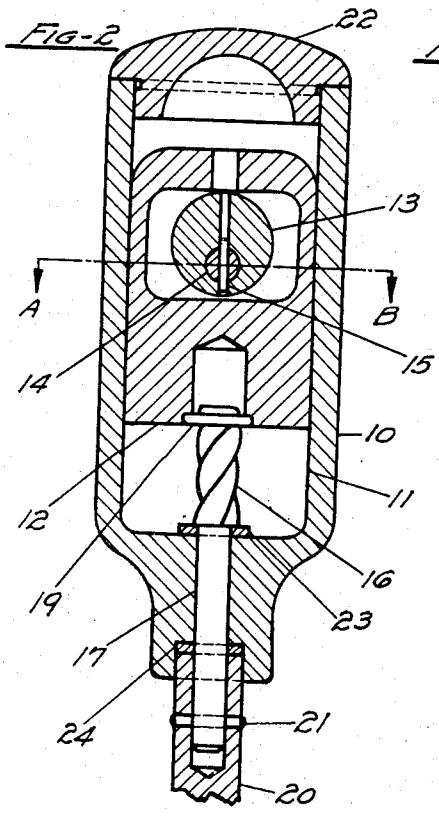


FIG-1

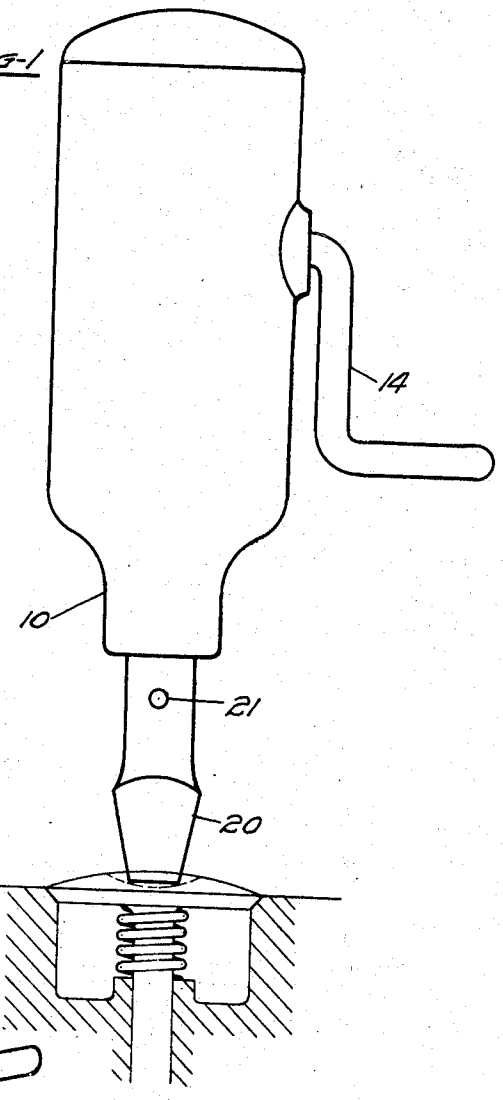
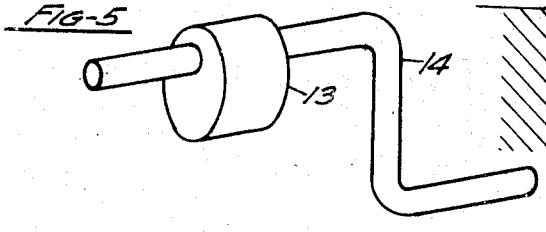


FIG-5



INVENTOR:

Carlos Ruiz

UNITED STATES PATENT OFFICE.

CARLOS RUIZ, OF HARTFORD, CONNECTICUT.

VALVE-GRINDING DEVICE.

1,333,100. Specification of Letters Patent. Patented Mar. 9, 1920.

Application filed October 22, 1919. Serial No. 332,373.

To all whom it may concern:

Be it known that I, CARLOS RUIZ, a subject of the King of Spain, and a resident of the city of Hartford, in the county of Hartford and State of Connecticut, have invented new and useful Improvements in Valve-Grinding Devices, of which the following is a specification.

This invention relates to valve grinding tools of simple and portable type, designed to be manually operated for imparting an oscillating movement to the valve being ground.

To this end, the invention consists of the novel construction and arrangement of parts hereinafter described in detail and pointed out in the appended claim, reference being made to accompanying drawings in which:

Figure 1 is a side view of the tool and the valve being ground.

Fig. 2 is a vertical cross section through the center of the tool on line *b*—*c*.

Fig. 3 is a horizontal cross section through line *a*—*b*.

Fig. 4 is a perspective view of slide.

Fig. 5 is a perspective view of the cam mounted on operating crank handle.

The numeral 10 in the drawing indicates a case which serves the purpose of inclosing and guiding all moving parts in it. No. 11 is an elongated slot which serves as means for sliding member 12 to operate freely in a reciprocating motion. 13 is a cam or eccentric which is mounted on crank handle 14 by means of pin 15 and operates said sliding member 12 when it rotates.

Numeral 16 indicates a worm free to run in bearing 17 which is part of the case 1 and said worm is operated by slide 12; as it is shown, it is constructed of a twisted square bar fitting square hole 18 pierced in washer 19, which when assembled, forms an integral part of the slide 12.

Numeral 20 indicates a piece of convenient design to fit valve being lapped or ground which when assembled with worm by means of pin 21, forms an integral part of worm 16, and rotates with it. As it is shown on the drawing, fits a valve of the slotted type, but it is obvious that by substituting said piece with an adequate tool, the device could be adapted to fit a valve of any other style.

Numeral 22 indicates a cover which when assembled with case 1 by any convenient means acts as a guard for the hand and makes the tool dust proof.

Numerals 23 and 24 are washers to facilitate worm 16 to rotate freely in bearing 17 and also to take the end thrust of said worm 16 and grinding tool 20.

To operate the tool it is only necessary to hold the cylindrical body with one hand and turn the crank handle with the other. The grinding tool automatically reverses its rotation within a convenient angle.

It is obvious that by the use of this tool the operator will be able to use the swing of the arm and the inertia of it to a great advantage, thus making the operation of grinding valves less tiresome than by the ordinary method of using a screw driver for the purpose, where the operator has to continuously reverse the motion of the arm.

Upon turning the crank handle, through the connection already described, slide 12 will be moved rectilinearly for a short distance in its downward motion and reverse when eccentric 13 reaches the opposed position of the stroke.

Slide 12, by means of square hole 18 in washer 19, which operates worm 16, will impart an oscillating motion to the valve grinding tool and to the valve, as required for the purpose of rolling the grinding compound into a different position in the valve seat.

This tool could also be used as a power driven device by substituting the handle by a flexible shaft connected to an electric motor or some other source of power.

Having thus described my invention what I claim as new is as follows:

In a valve grinder the combination of a case which serves as means for guiding and inclosing all moving parts, a crank-handle rotating on said case, a cam mounted on said crank, a member longitudinally sliding in the case and operatively connected with said cam, a worm operatively engaging with said sliding member and means for connecting said worm with the valve being ground, essentially as shown and described.

In testimony whereof I have hereunto set my hand.

CARLOS RUIZ.