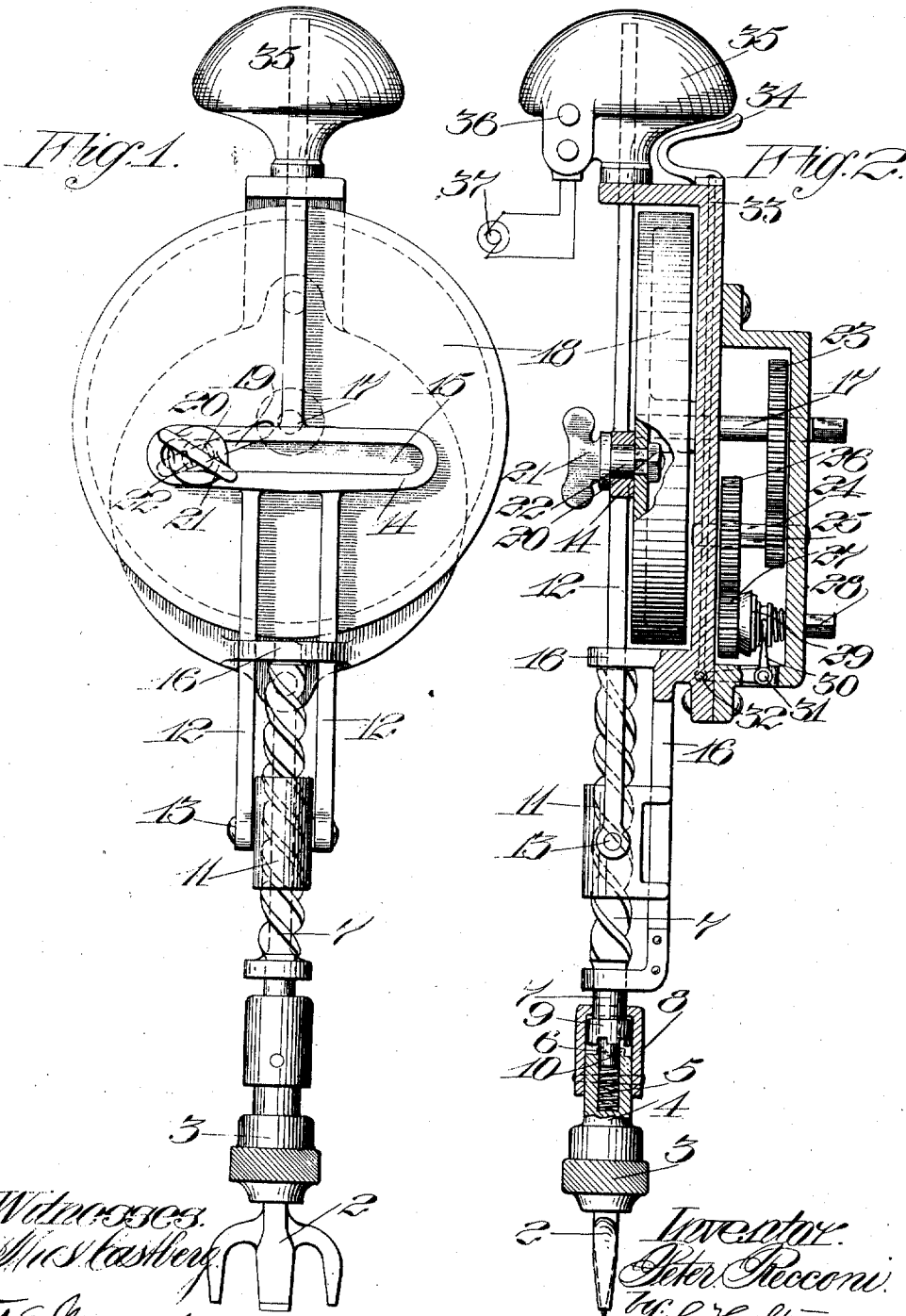


P. RECCONI.
 VALVE GRINDER.
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1,000,553.

Patented Aug. 15, 1911.



Witnesses:
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UNITED STATES PATENT OFFICE.

PETER RECCONI, OF SAN FRANCISCO, CALIFORNIA.

VALVE-GRINDER.

1,000,553.

Specification of Letters Patent. Patented Aug. 15, 1911.

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To all whom it may concern:

Be it known that I, PETER RECCONI, subject of the King of Italy, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Valve-Grinders, of which the following is a specification.

This invention relates to valve grinders and particularly to grinding mechanism applicable to the grinding of valves in position.

The object of this invention is to provide a device for grinding valves on their seats which may be either manually or mechanically driven; which comprehends means whereby the actuating parts may be instantly disconnected from the driving shaft when the latter is motor driven; which provides means for varying the degree of oscillation of the valve engaging member; and which is simple, substantial and effective.

An important object of the invention is to so design the valve moving members that they will automatically unlock themselves when pressure is relieved on the device, to permit a manual readjustment of the valve during its grinding.

The invention consists of the parts and the combination and construction of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a front elevation of the tool. Fig. 2 is a side elevation in partial section.

In the present form of my invention 2 represents a valve engaging member or bit removably secured in a chuck member 3 which is chambered at its upper portion 4 to receive a spring 5, reactive upon a stem 6 which is formed upon the lower end of an actuating screw or spiral shaft 7.

To the chuck member 4 is secured an upwardly extending collar 8 inwardly flanged to embrace a clutch jaw 9 having suitable teeth adapted to be depressed into engagement with complementary teeth 10 formed upon the chuck member 4. Normally the chuck 3 is projected downwardly or away from the clutch jaw 9 by the spring 5.

When the bit 2 is placed into operative engagement with the valve or other body to be moved and pressure is applied through the spiral shaft 7, the jaw member 9 moves into engagement with the complementary clutch teeth 10 to the clutch section 4 and

when the spiral shaft 7 is oscillated a similar motion is transmitted to the bit 2.

For the purpose of actuating or oscillating the spiral shaft 7, I have provided a slidable sleeve 11 internally formed to embrace the shaft 7 and which is adapted to be reciprocated by a link member 12 connected at 13 to the sleeve 11, and which has formed upon its upper end a crosshead 14 having a transverse slot 15.

The link 12 and the screw embracing sleeve 11 are guided in an appropriate frame 16, upon which is journaled a shaft 17 carrying a momentum wheel 18, provided with a radial slot 19 in which is adjustable a polygonal nut 20. Projecting outwardly from the momentum wheel 18 and threaded in the adjustable nut 20 is a crank member 21 upon which is mounted an antifriction device 22, in the form of a roller which travels in the transverse slot 15 of the link crosshead 14. Motion may be transmitted to the wheel carrying shaft 17 by any appropriate means, as a crank, not shown, which may be secured upon the polygonal end of the shaft, or by means of a train of gears, represented at 23 and 24, the latter of which is shiftable upon an intermediate shaft 25 on which is fixed an intermediate gear 26. Meshing with this intermediate gear 26 is a pinion 27 loosely mounted upon a driving shaft 28 and which pinion is driven by means of a clutch 29 adapted to be shifted into cooperative engagement with the driving pinion 27.

An important and distinctive feature of the present invention is in the provision of means whereby the transmission of power from the driving shaft 28 to the wheel 17 may be instantly interrupted during the operation of the valve grinder and this means in the present instance comprises a bell crank 30 pivoted at 31, to one arm of which is pivoted at 32 a link 33 which is led upwardly through the supporting frame 16 and provided at its upper end with a handle 34.

The handle 34 is preferably positioned closely to a controlling handle 35 which is secured to the upper portion of the frame 16 in such position that the operator can control the device during its operation by pressure of one hand upon the knob or handle 35 and also by the same hand actuate the clutch releasing handle 34 when he

desires to shift the clutch 29 out of engagement with its complementary driving gear 27. This is an important provision for it allows the operator to have the free use of one hand about the machine or parts being operated upon, while the other hand can entirely and perfectly control the valve grinder. There is provided upon the handle 35, a suitable electric switch 36 whereby the operator may cut out the current to the motor 37, when the valve grinder is to be put out of operation for any length of time. Having thus described my invention what I claim and desire to secure by Letters Patent is—

1. A valve grinder comprising a valve engaging tool, a spiral shaft, an automatic clutch mounted upon said shaft, an actuator embracing the shaft, and means for operating the actuator, said means including a rotatable member having an adjustable crank.
2. A valve grinder comprising a valve engaging tool, a spiral shaft, an automatic clutch mounted upon said shaft, an actuator embracing the shaft, means for operating the actuator, said means including an adjustable crank, a momentum wheel on which said crank is mounted and transmission devices for operating said wheel.
3. A valve grinder comprising a valve engaging tool, a spiral shaft, an automatic clutch mounted upon said shaft, an actuator embracing the shaft, means for operating the actuator, said means including an adjustable crank, a momentum wheel on which said crank is mounted and transmission de-

vices for operating said wheel, said devices including a normally closed clutch and a train of gears.

4. A valve grinder comprising a valve engaging tool, a spiral shaft, an automatic clutch connecting said shaft and said tool, instrumentalities including a momentum wheel and a crank adjustable thereon for oscillating said shaft, driving mechanism connected to said instrumentalities, a frame upon which said instrumentalities and said driving mechanisms are mounted, and a handle secured to said frame whereby the valve grinder may be controlled.

5. A valve grinder comprising a valve engaging tool, a spiral shaft, an automatic clutch connecting said shaft and said tool, instrumentalities for oscillating said shaft, driving mechanism connected to said instrumentalities, a frame upon which said instrumentalities and said driving mechanisms are mounted, a handle secured to said frame whereby the valve grinder may be controlled, a normally closed clutch mounted upon a motor driven shaft of the driving mechanism, and a device mounted in juxtaposition to said handle whereby the operator may disengage said clutch.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

PETER RECÇONI.

Witnesses:

W. R. CASTAGNETTO,
JAS. P. KANE.