March 22, 1932. F. BROWNIE 1,850,916

VALVE GRINDER

Filed June 23, 1930

Fig. 1.

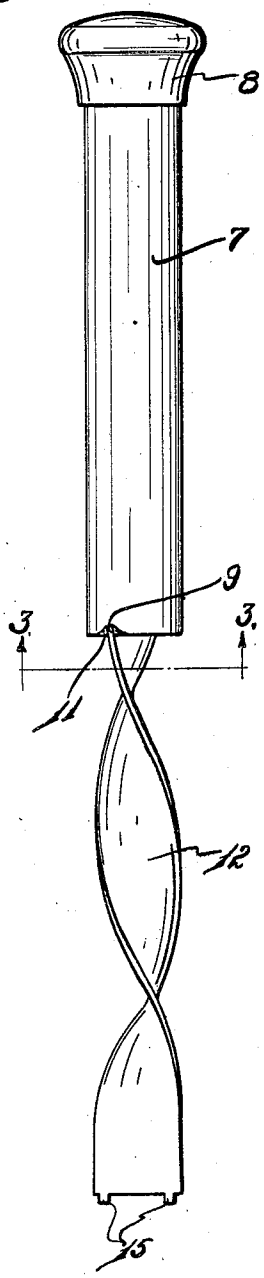


Fig. 2.

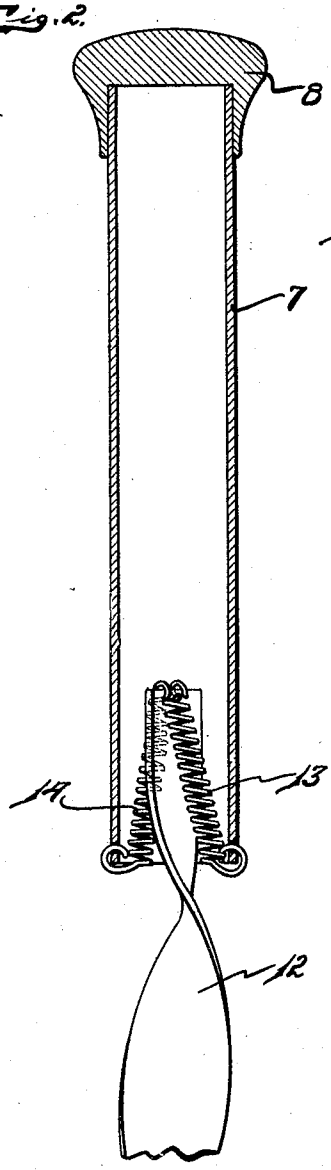


Fig. 3.

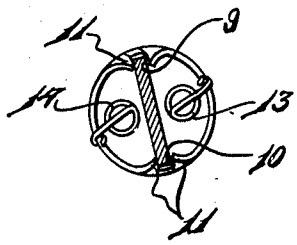
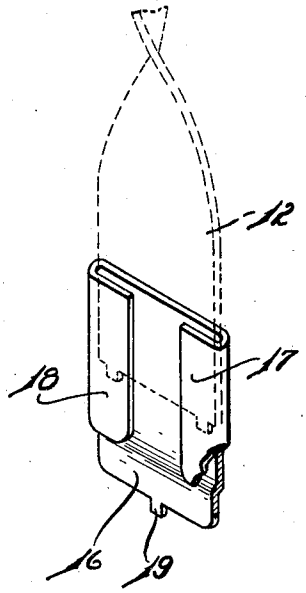


Fig. 4.



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UNITED STATES PATENT OFFICE

FRANK BROWNIE, OF DETROIT, MICHIGAN

VALVE GRINDER

Application filed June 23, 1930. Serial No. 463,033.

My invention relates to a new and useful improvement in a valve grinder adapted for use in oscillating or rotating a valve so that the same may be ground while positioned on its seat to effect a snug seating of the valve on the seat. In carrying on such a grinding operation it is customary to place between the valve and its seat suitable abrasive material or grinding compound and oscillate or rock the valve back and forth on its axis. To effectively accomplish this it is desirable that the valve be easily and quickly oscillated and it is an object of the present invention to provide a device which may accomplish such a result.

It is another object of the invention to provide a valve grinder of this class which will be simple in structure, economical of manufacture, and highly efficient in use.

Another object of the invention is the provision of an attachment for a valve grinder whereby it may be accommodated for valves of different types and sizes.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by a reference to the accompanying drawings which form a part of this specification, and in which,

Fig. 1 is a side elevational view of the invention.

Fig. 2 is a central longitudinal view of the invention with a part broken away.

Fig. 3 is a transverse sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a perspective view of an attachment adapted for use on the invention.

The invention comprises a tubular handle 7 having a knob 8 at one end and at its opposite end diametrically opposite slits 9 and 10 are formed and the end edge of the tube at opposite sides of these slits are bent inwardly to provide inwardly projecting burrs or contact members 11. A spirally formed arm 12 is slidably inserted in the handle 7, this arm being formed from flat material which is wound spirally as shown. The end edges of the arm 12 engage between the engagement members 11 so that as the arm 12 moves longitudinally of the handle 7, a rotation of the arm 12 is effected. Secured to the inner end of the arm 12 at one end are coil springs 13 and 14, the opposite ends of which are secured to the end of the handle 7 so that when the arm 12 is forced inwardly of the handle 7, the springs 13 and 14 tend to move the arm 12 outwardly. Projecting outwardly from the end of the arm 12 are tits or lugs 15 which, when the device is being used may engage in pockets or recesses formed in the outer surface of the valve head so that as the handle 7 is moved downwardly, the valve head will be rotated.

In Fig. 4 I have shown an attachment consisting of a plate 16 having the doubled over edges 17 and 18 to provide channels in which the end of the arm 12 may engage. A tit 19 projects centrally outwardly from the plate 16 although it is believed obvious that a plurality of these tits may be provided or a straight surface used where an elongated slot is formed in the valve head. By use of such an attachment, the device may be used on different types of valves and different sizes.

In use when the handle 7 is moved downwardly so as to oscillate or rotate the valve head through engagement with the arm 12 and the downward pressure on the handle 7 released, the springs will force the handle 7 upwardly thus effecting a reverse rotation of the arm 12. By this method of operating the grinding of the valves becomes a very simple operation which may be easily and quickly effected.

While I have illustrated and described the preferred form of my invention, I do not wish to limit myself to the precise details of structure shown but desire to avail myself of such variations and modifications as may come within the scope of the appended claim.

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

A device of the class described, comprising: a tubular handle, said handle having diametrically opposite slits formed in its open end and bent inwardly at opposite sides of each slit to provide, at each slit, a pair of

spaced engagement members; an elongated plate twisted into spiral formation insertable into said handle and engaging at its opposite edges between said engagement members; resilient means for resisting inward movement of said arm relatively to said handle and valve engaging means on the outer end of said plate.

In testimony whereof I have signed the foregoing specification.

FRANK BROWNIE.