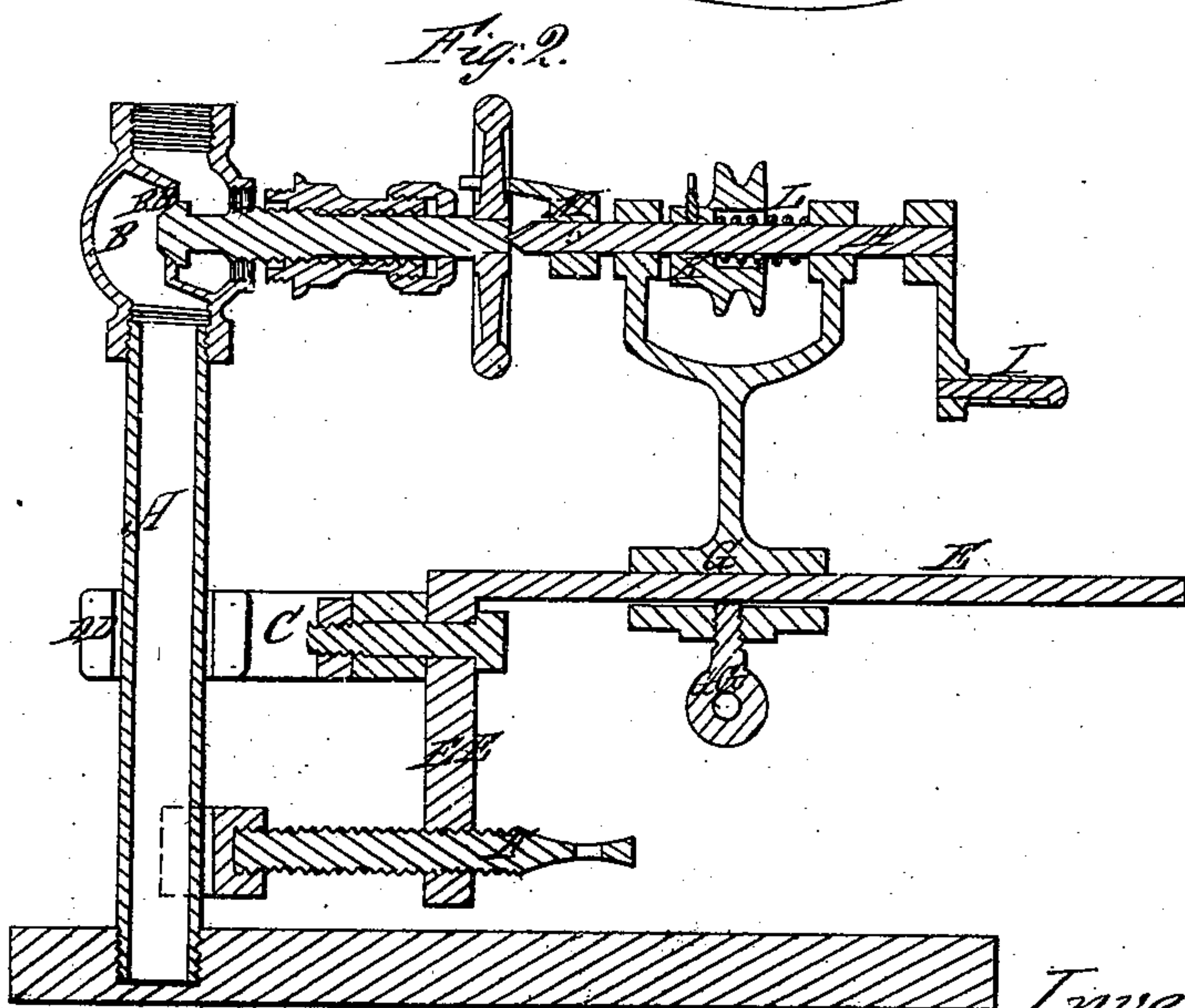
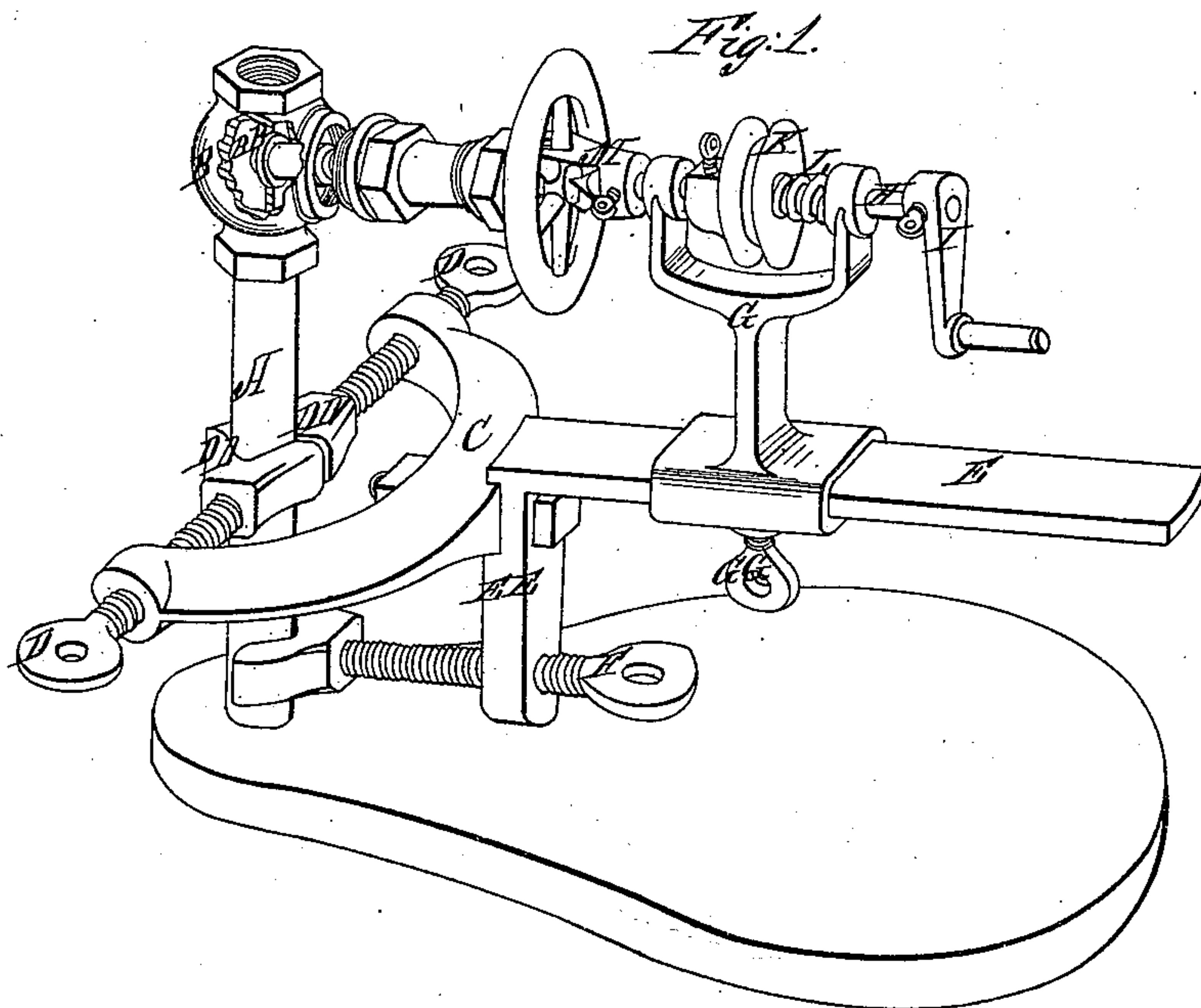


*W. H. Anderson.*  
*Grinding Machine.*

*N<sup>o</sup> 96,378.*

*Patented Nov. 2, 1869.*



*Witnesses:*  
*A. H. O'Leary*  
*Frank A. Jackson*

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# United States Patent Office.

WILLIAM H. ANDERSON, OF BROOKLYN, NEW YORK.

*Letters Patent No. 96,378, dated November 2, 1869.*

## IMPROVEMENT IN MACHINE FOR GRINDING SEATS OF VALVES.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern :*

Be it known that I, WILLIAM H. ANDERSON, of the city of Brooklyn, county of Kings, in the State of New York, have invented a new and useful Machine for Grinding the Seats of Valves, Cocks, Faucets, &c.

My invention consists in the novel construction, arrangement, and operation of certain mechanical devices, by means of which the seats of valves, and other similar articles, may be rapidly and accurately ground to a perfect bearing; and I do hereby declare that the following specification, taken in connection with the drawings furnished, and forming a part of the same, is a true, clear, and exact description thereof.

Reference being had to the drawings—

Figure 1 represents one of my machines in perspective.

A represents a pipe, to which the cock to be ground is attached, by means of its screw-connections. When the machine is used upon new work, a bolt or rod, with a suitable screw-thread thereon, would take the place of the pipe, as shown in the drawings.

B is the valve-cock, with a portion of its shell removed. Its parts are well known, and too common to require special explanation.

B B represent the seat of the valve.

C is a clamp, by means of which the machine is attached to the pipe A. It is in the form of a crescent, and is provided with two clamp-screws, passing through tapped holes in the ends of the horns of the crescent.

On the ends of these clamp-screws D are forked holders D D, the two coming together near the centre. The holders D D are attached to the clamp-screws D, by means of a socket-joint, so that they may readily adapt themselves to the surface of the pipe, regardless of any variations which may exist in the form or surface of the pipe.

E is a slide-bar, firmly attached to the clamp C. At the point of connection therewith, it is provided with an arm, E E, extending at right angles to the bar.

F is an adjusting-screw, passing through a tapped hole at the lower end of the arm E E. It is provided with a foot similar in form to the holders D D, already described.

G is a lathe-head, fitted and secured to the slide-bar E, by means of a slot in its foot. It can be adjusted longitudinally, by means of a set-screw, G G, passing through the under side of the foot, and bearing against the under side of the slide-bar.

H is a lathe-spindle, fitted to revolve freely in the lathe-head.

I is a crank, attached to the spindle H.

K is a pulley, mounted loosely upon the spindle. It is provided with a hub, through which a set-screw passes, to admit of longitudinal adjustment.

L is a pressure-spring, encircling the spindle, and arranged to press at one end against the pulley K, and against one of the ears of the lathe-head at the other end. It is obvious, that by moving the pulley toward or from the spring, and securing it to the spindle, pressure, longitudinally, more or less, is effected.

M is a set-screw dog, of peculiar construction. It is provided with a double or pronged finger, in order that it may grasp or embrace either the spoke of a stem-wheel of a cock or the lever of a faucet, and securely hold it while revolving in any direction.

Figure 2 represents one of my machines in longitudinal vertical section.

The respective parts are lettered, as in fig. 1.

The operation of my machine is as follows:

Supposing, by way of illustration, that a valve-cock, from being long in use, should require regrinding, and that it were neither desirable nor convenient to remove it from the pipe to which it was attached. The machine would be placed upon the pipe, at a proper distance from the cock, by means of the clamp C, screws D, and holders D D. The point or centre of the lathe-spindle is then placed in a proper relation with the centre of the valve-stem. Should the valve-stem be out of line with the screw-connections in the body of the cock, the centres may be adjusted thereto, by elevating or depressing the slide-bar E, by means of the adjusting-screw F, after which the set-screw G G should be turned up tightly, to secure the lathe-head in proper position. The dog M should then be adjusted to a spoke of the stem-wheel. The screw-coupling of the cock should then be turned outward upon the spindle or stem, so that the stem may be permitted to freely revolve. A proper quantity of oil and emery, or other suitable grinding-material, should then be placed upon the valve-seat, and the surfaces ground, by turning the hand-crank, or by means of the pulley, to which a bow-cord should be applied.

The degree of pressure upon the grinding-surfaces can be readily varied, by adjustment of the pulley, relatively to the pressure-spring, so that it may bear, more or less forcibly, against it.

It is well known to persons skilled in the art, that the screw-connections of valve-cocks and faucets are seldom cut at true right angles to or parallel with the stems of the cocks. It is therefore necessary to have a valve-grinding apparatus adjustable in such a manner, that the frequent variations therein can be thoroughly compensated, by adjusting the lathe-spindle, so that it will be, when operated, on a true line with the outer end of the valve-stem, and its proper seat.

This adjustment may be effected by having a lathe-head mounted upon a stationary slide-bar, but arranged to tilt up and down, longitudinally, in a socket-joint, and secured, by set-screws, in any desired position.



I prefer, however, the arrangement of the adjustable slide-bar.

It might, however, be deemed advisable to construct both slide-bar and lathe-head so as to be capable of vertical longitudinal adjustment, in which case it could be readily accomplished, by modifications clearly within the spirit of my invention.

Although the drawing exhibits, and I have described, a portable grinding-machine, it is obvious that changes, involving a mere matter of construction, are only requisite to adapt it to general use, by rass-finishers, in the manufacture of new cocks, &c.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. In combination with a vertical or horizontal stand or pipe, A, the slide-bar E, to which is fitted a lathe-head and spindle, substantially as shown and described.

2. In combination with the sliding bar, lathe-head, and spindle H, the pressure-spring L, arranged to act upon the spindle longitudinally, substantially as shown and described.

3. In combination with an adjustable sliding bar, lathe-head, and spindle, the clamp C, with its clamp-screws D, substantially as shown and described, for the purposes specified.

WILLIAM H. ANDERSON.

Witnesses:

WILLIAM R. TAYLOR,

GEORGE W. HALL.