

(No Model.)

J. MURPHY.

TOOL FOR OPERATING UPON VALVE SEATS.

No. 442,818.

Patented Dec. 16. 1890.

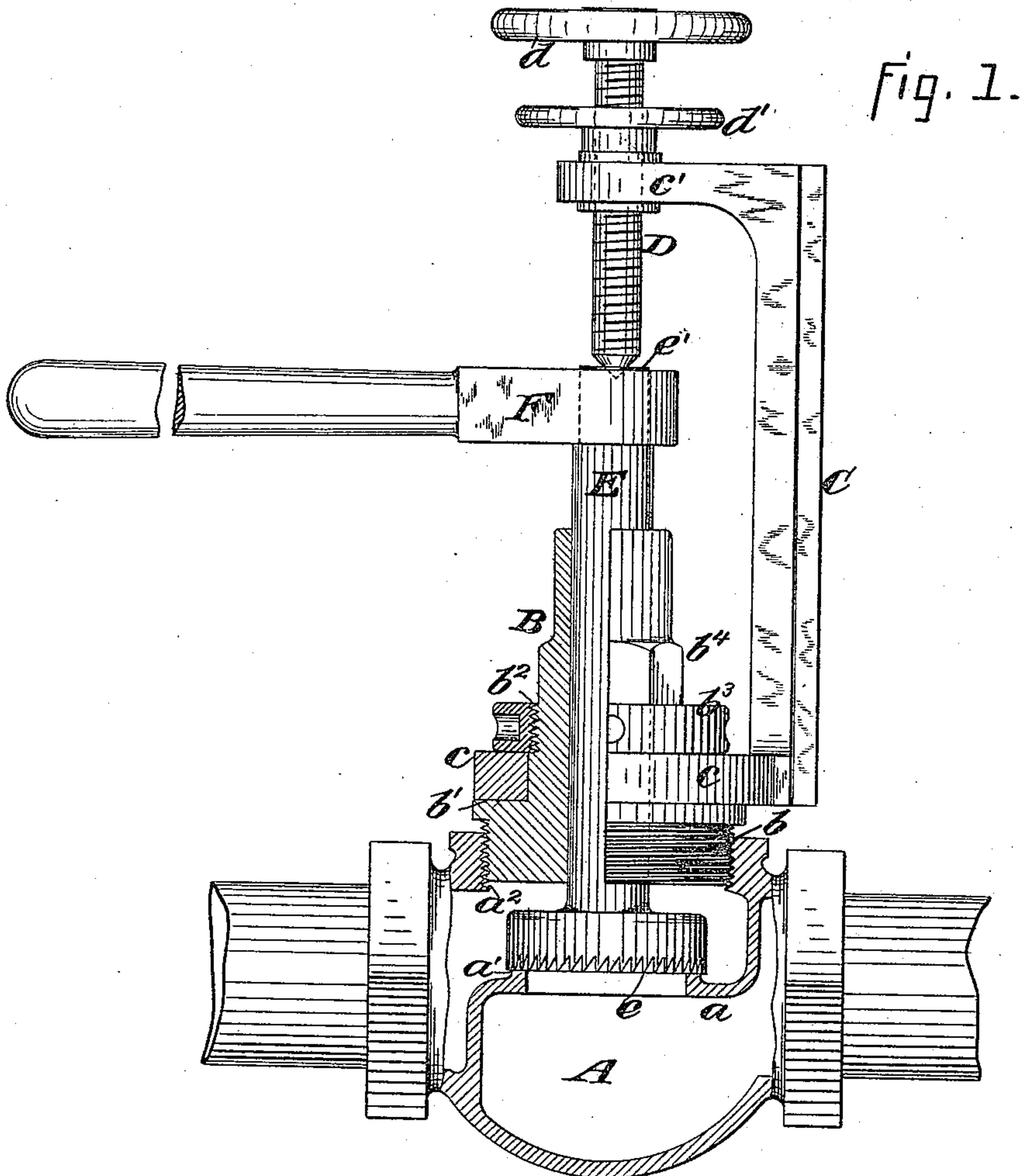


Fig. 1.

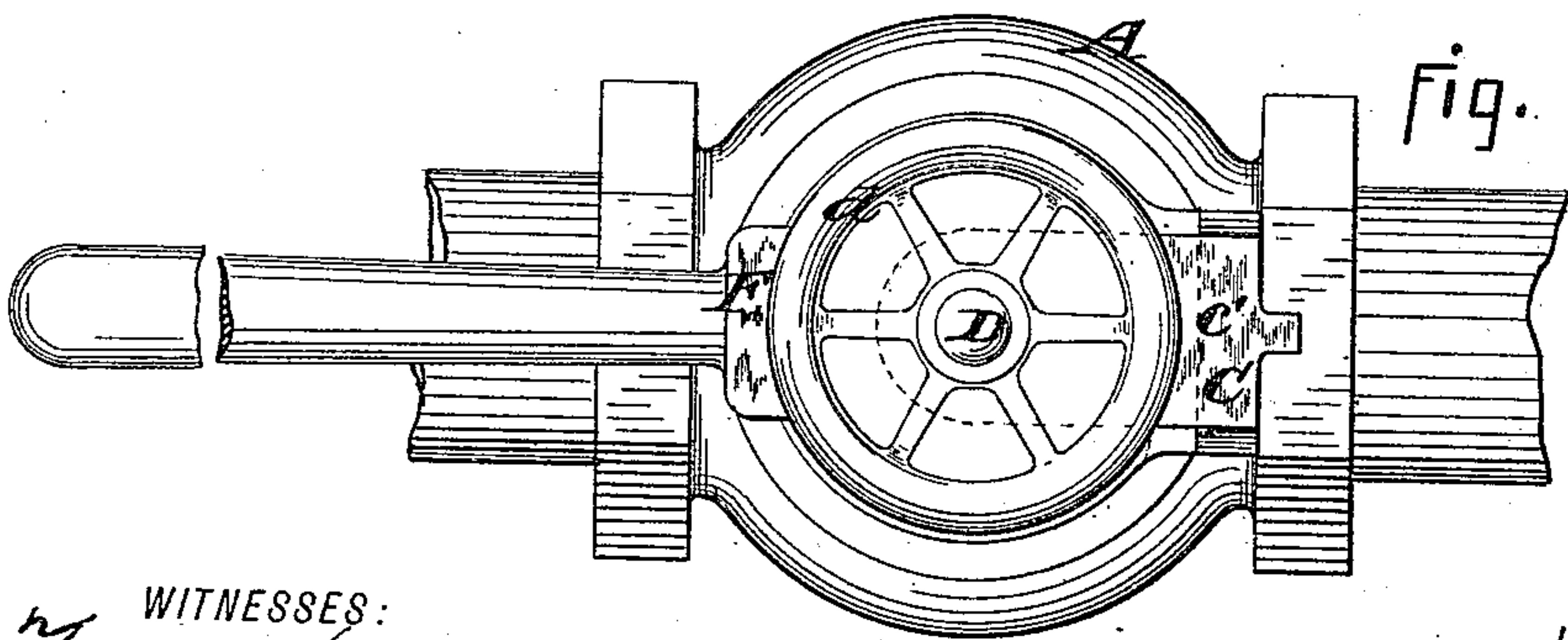


Fig. 2.

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TOOL FOR OPERATING UPON VALVE-SEATS.

SPECIFICATION forming part of Letters Patent No. 442,818, dated December 16, 1890.

Application filed October 13, 1890. Serial No. 368,029. (No model.)

To all whom it may concern:

Be it known that I, JAMES MURPHY, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Tools for Operating upon Valve-Seats, of which the following is a specification.

My invention relates to an improvement in tools for operating upon valve-seats, and more particularly to tools adapted to operate upon the valve-seat without removing the valve from its position in a line-pipe.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents the tool in position for use, a portion of the tool-support being broken away to show the position of the tool therein; and Fig. 2 is an end view.

In carrying out my invention I provide a tool-supporting socket-piece with an exterior inverted end adapted to fit within the threaded opening, in which the cap of the valve-chamber is commonly secured. To this end socket-pieces having threaded extensions of different diameters, corresponding to the standard sizes of openings, may be provided, each socket-piece having an interior bore for the reception of a tool of the same size, and also provided with a seat for the feed-screw frame and a threaded portion for the reception of a frame-securing nut. A simple U-shaped frame is provided, one branch of which is intended to fit a seat upon the socket-piece and the other to support a feed-screw for the purpose of forcing the cutting-tool into contact with the valve-seat.

In the form which I have chosen to illustrate my invention A represents the valve-chamber across which a diaphragm a extends. The diaphragm a is provided, as usual, with an opening, around which the valve-seat a' is located. The interior threaded opening for the reception of the cap of the valve-chamber is represented by a^2 .

B represents the socket-piece, provided at its lower end with an external screw-threaded projection b , adapted to register with the opening a^2 of the valve-chamber. Above the threaded extension b the said socket-piece is provided with a seat b' for the reception of

the perforated lower branch c of the feed-screw-supporting frame C. The opening in the branch c of the supporting-frame C is intended to be sufficiently large to admit of the adjustment of the branch c over the top of the socket-piece and down onto its seat, and the said branch is intended to fit upon the socket-piece sufficiently loose, so that the frame may be swung around to accommodate itself to different positions in which the valve-casing secured to the line-pipe may be locked. Above that portion which is surrounded by the branch c the socket-piece B is provided with an external screw-threaded portion b^2 , adapted to receive a nut b^3 , for securing the frame in position on its seat. The upper branch c' of the frame C is also perforated for the reception of a feed-screw D in the line of the longitudinal axis of the opening in the socket B. The feed-screw D is provided with a wheel d for operating it and with a jam-nut d' , as is common for locking it in the desired adjustment.

The shank of the tool is represented by E and its cutting-face by e . It is intended that its shank shall have an easy sliding and rotary fit within the opening in the socket B. The upper end of the shank of the tool is conveniently squared, as shown at e' , for the reception of a ratchet-wrench F, of a well-known or approved construction.

For the purpose of adjusting the socket-piece B, hereinbefore referred to, within the opening a^2 in the valve-casing I provide the said socket-piece with a squared portion b^4 to receive the jaws of a wrench.

The operation of the device is as follows: The shank E of the tool is inserted within the socket-piece B, and the socket-piece is then screwed into the opening a^2 in the valve-casing. Either before or after adjusting the socket-piece to the valve-casing the lower branch c of the frame C is slipped over the top of the socket-piece down onto its seat, and is there secured by means of the nut b^3 . The feed-screw D is then turned down into engagement with the top of the shank E, forcing the cutting-face e of the tool into contact with the valve-seat to be worked upon. The ratchet-wrench F is then applied to the head e' of the tool and the latter rotated. As fast

as the tool cuts its way the feed-screw D may be forced into contact with it to hold it in cutting contact.

It will be observed that the device is a simple one and that it is capable of being employed in corners of rooms or where the line-pipe runs in close proximity to one or more surfaces, the swing of the frame C and the small transverse diameter of the device admitting of its use without removing the valve-casing from the pipe.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a tool-holding socket adapted to engage a valve-casing opposite the seat to be worked upon, of a frame secured to the socket-piece at one end in rotary adjustment and provided with a feed-screw at its opposite end in position to force the tool to its work, substantially as set forth.

2. The combination, with a tool-holding socket having a threaded projection to engage the opening in the valve-casing opposite the valve-seat, and further provided with a seat for the reception of one end of a feed-screw-supporting frame, and with a screw-threaded portion for the reception of a nut to hold the feed-screw-supporting frame in position, of a feed-screw-supporting frame, one end of which is adapted to embrace the socket-piece, a feed-screw support in the opposite end of the supporting-frame in position to force the tool to its work, and a nut to secure the supporting-frame in position, substantially as set forth.

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Witnesses:

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