

(No Model.)

2 Sheets—Sheet 1.

A. J. SMART.
TAP WRENCH.

No. 277,430.

Patented May 8, 1883.

Fig. 1.

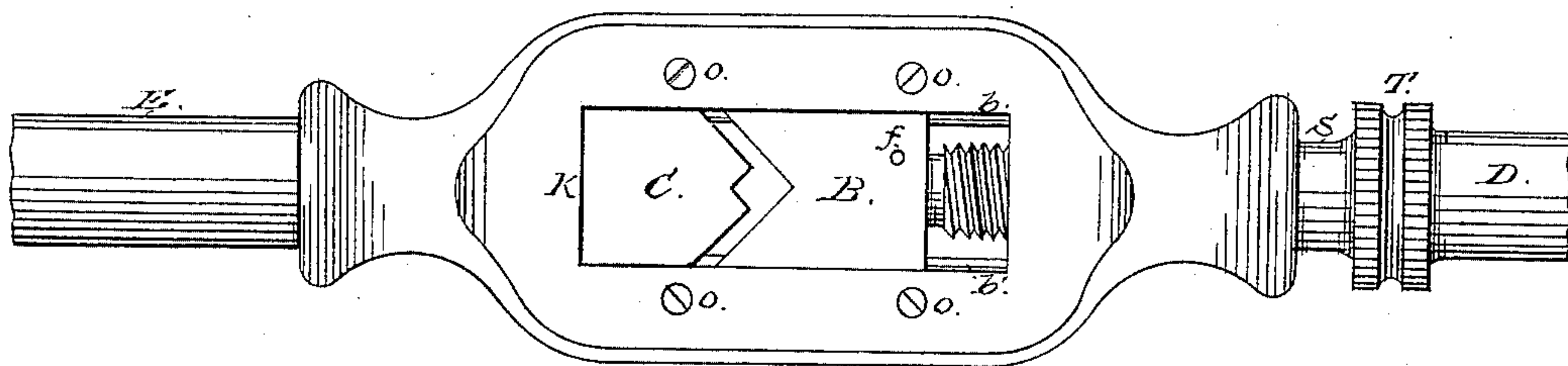


Fig. 2.

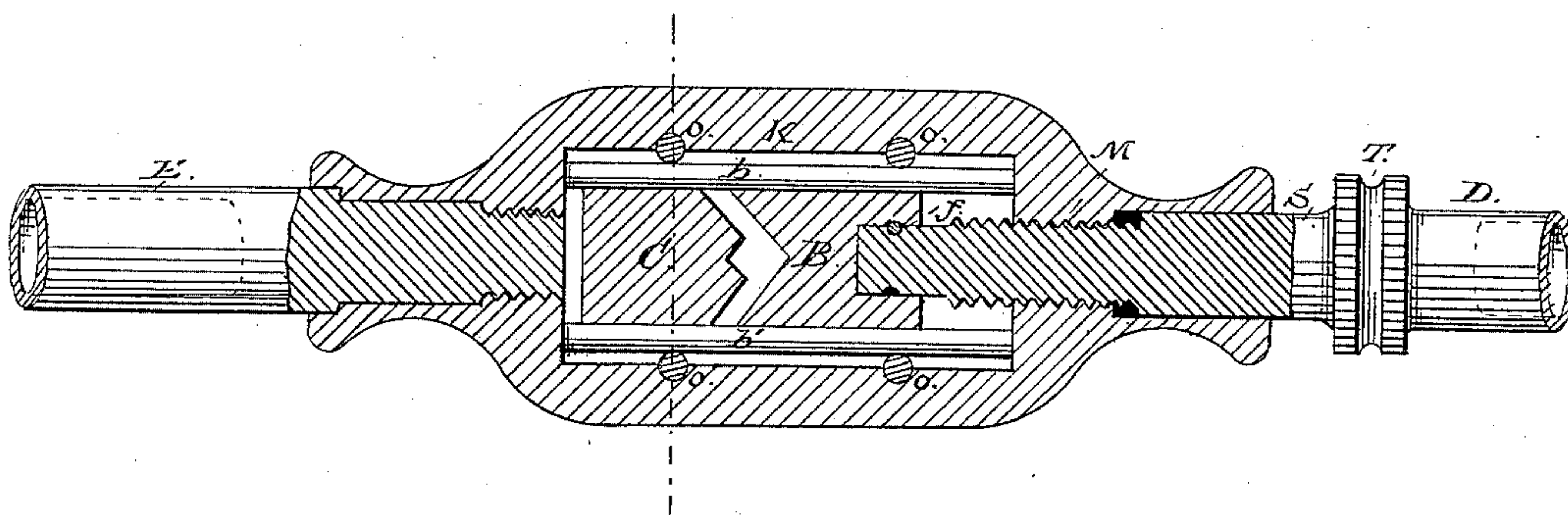


Fig. 3.

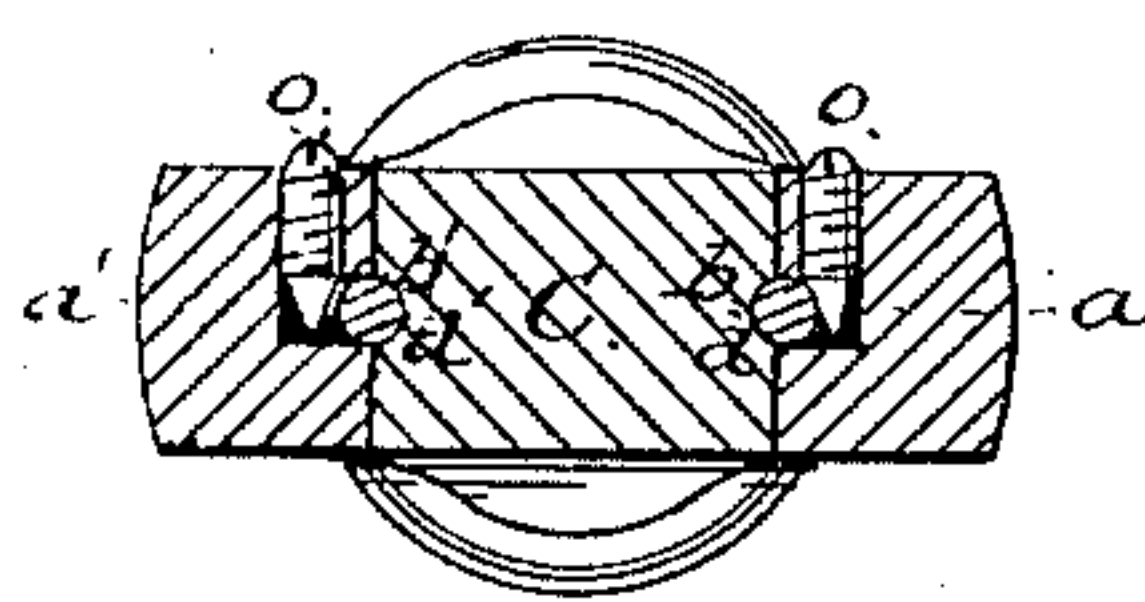


Fig. 4.

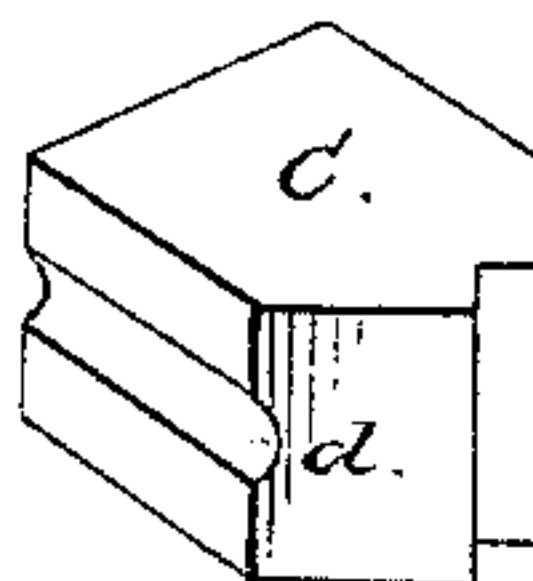
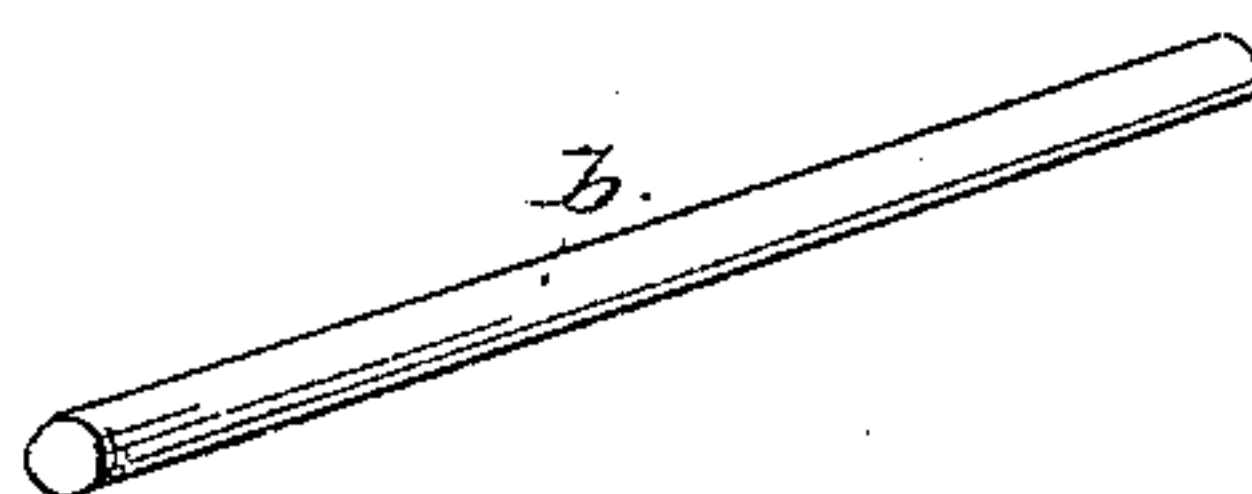


Fig. 5.



Attest;

H. W. Coward

Edw. H. Downs

Inventor;

Albert J. Smart

By C. S. Whitman

Atty.

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2 Sheets—Sheet 2.

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Fig. 6.

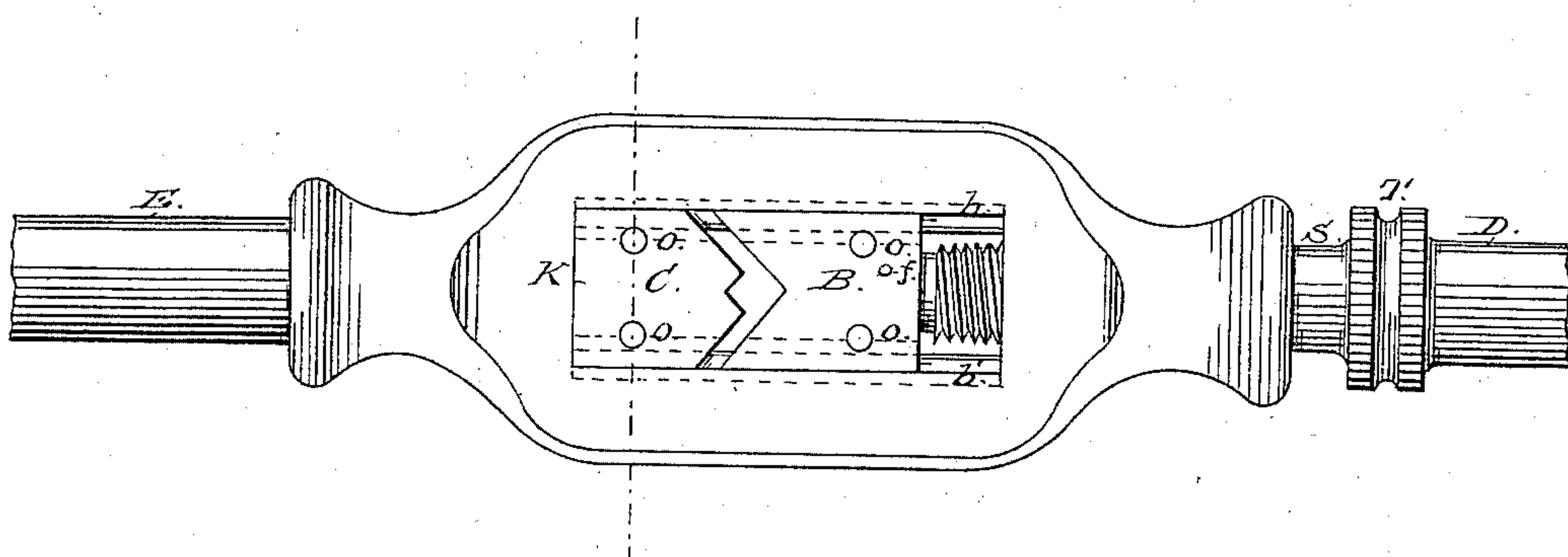
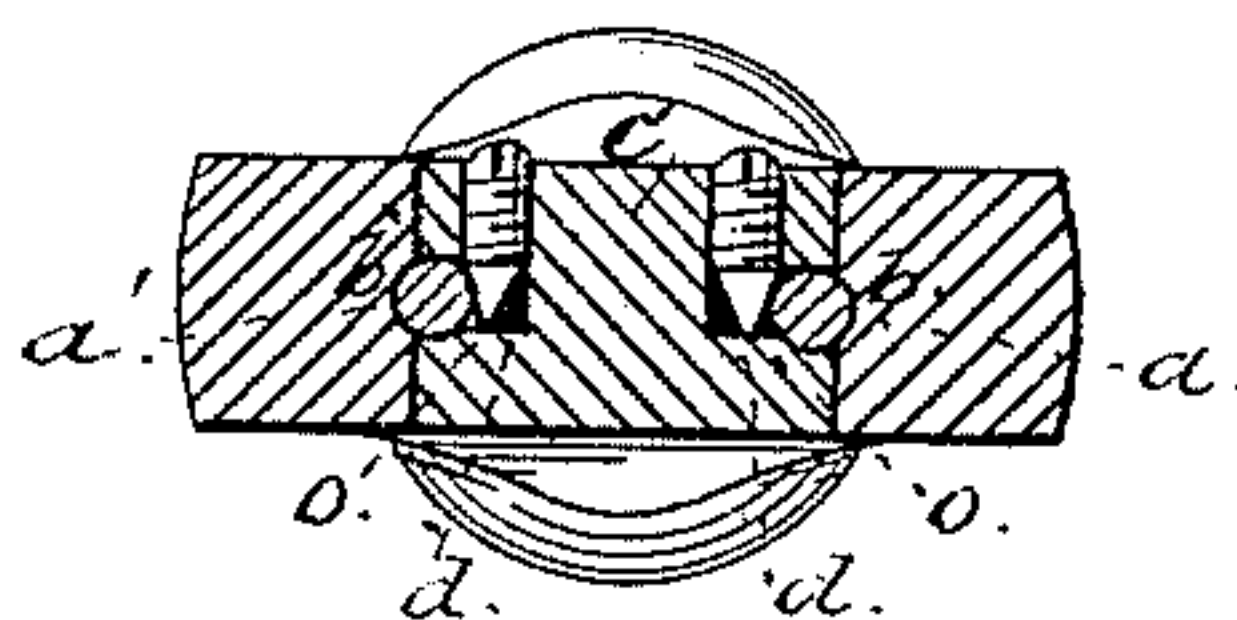


Fig. 7.



Attest;

H. W. Howard

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Inventor,

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By C. S. Whitman

Att'y.

UNITED STATES PATENT OFFICE.

ALBERT J. SMART, OF GREENFIELD, MASSACHUSETTS, ASSIGNOR TO THE
WILEY & RUSSELL MANUFACTURING COMPANY, OF MASSACHUSETTS.

TAP-WRENCH.

SPECIFICATION forming part of Letters Patent No. 277,430, dated May 8, 1883.

Application filed February 24, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALBERT J. SMART, a citizen of the United States, residing at Greenfield, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Tap-Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of tools which are made use of for rotating the tap used in forming an interior screw-thread, and which are commonly known as "tap-wrenches."

In tools of this class as heretofore constructed the shank of the tap is held between a fixed and a movable jaw, which are caused to approach by means of a screw, and are thus adapted to hold shanks of various sizes.

My present invention consists in the combination of a bearing-rod with a frame and a jaw, the jaw being provided with a groove, and the frame having a slot capable of entirely receiving the bearing-rod, and also means of adjusting the rod in the slot.

In the accompanying drawings, in which corresponding parts are designated by the same letters, Figure 1 is a plan view of a tap-wrench having my invention applied thereto. Fig. 2 is a view of the same taken partially in horizontal section. Fig. 3 represents the jaw and bearings detached from the frame, or holder, and Figs. 4 and 5 are respectively the jaw and bearing-rods detached from the holder. Figs. 6 and 7 illustrate in plan and section a modification.

The central part of the implement is provided with a rectangular aperture, K, in which are arranged the movable jaw B and the stationary jaw C, the faces of which are formed in the usual manner, so that the square shank of a tap or other tool may be readily secured and firmly held between them. The movable jaw B is moved backward and forward within the rectangular aperture K in the usual manner by means of the handle D, the end of which enters a cylindrical socket cut in the end of the movable jaw, and is provided with an annular groove for the reception of the feather-pin *f*. The handle D has a screw cut thereon, which fits a nut, M, formed in the frame in

such a manner that by the rotation of the handle it is made to travel either backward or forward, as may be desired, and thus actuate the movable jaw. Longitudinal slots *a a'* are formed in the frame or holder on each side of jaws, in which are placed the bearing-rods *b b'*, which may be of any desired shape, and grooves *d* and *d'* are cut in the sides of the jaws for the reception of these rods. The slots *a a'* are in depth made about the diameter of the rods, so that the latter may be contained entirely within them when it is necessary to remove the jaws from the frame or holder, and screws *o* pass through nuts cut in the frame and press against the rods in such a manner as to adjust them in any desired position. These screws I prefer to arrange as shown in the drawings—that is to say, in such a manner that the conical ends thereof will act as wedges and force the bearing-rods inward when they are turned in a downward direction; but it is obvious that such screws, instead of being placed as shown, may be arranged in any relative direction to the bearing-rods, or at any angle therewith, provided they perform the functions required of them.

It will be also apparent to those skilled in the art to which my invention relates that instead of causing the screws to pass through nuts cut in the frame, as shown in the drawings, they may be made to work in nuts formed in the jaws B and C in such a manner as to force the splines or bearing-rods outward from the grooves cut in the jaws into the longitudinal slots *a a'*, formed in the frame or holder. In this case the grooves *d* and *d'*, formed in the sides of the jaws, should be made about double the diameter of the splines or bearing-rods, so that the latter may be contained entirely within them when it is necessary to remove the jaws from the holder. Instead of the screws hereinbefore described, in some instances pins and in other cases wedges may be used; or wedges may be used in combination with screws.

The handle, capable of rotation, is made partly of solid iron and partly of pipe. The part *s*, made solid, extends into a tubular part D at the point where the serrated band T is placed, and is welded thereto in such a manner as to make a light and strong handle. The fixed handle E is also made partly of solid iron

and partly of pipe—that is to say, the tubular part E has a solid piece welded in it, which is screwed to the frame.

In order to place and adjust the jaws B and C, the screws *o* are drawn outward sufficiently to allow the bearing-rods *b b'* to be withdrawn entirely within the longitudinal slots *a a'*. The jaws are then placed in position, and the screws *o* turned inward in such a manner that their conical ends will press upon the sides of the rods and force them into the grooves *d d'*, cut in the sides of the jaws. The bearing-rods are thus made to hold the jaws evenly, rendered capable of adjustment after becoming worn, and so arranged that they may be withdrawn from the jaws when the latter are removed from the frame or holder.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

A bearing-rod, in combination with a frame and a jaw, one of the last-named parts having a groove, and the other having a slot capable of entirely receiving the bearing-rod, and means for adjusting the rod in the slot.

In testimony whereof I affix my signature in the presence of two witnesses.

ALBERT J. SMART.

Witnesses:

FREDERICK CLAPP,
DAVID S. SIMONS.