

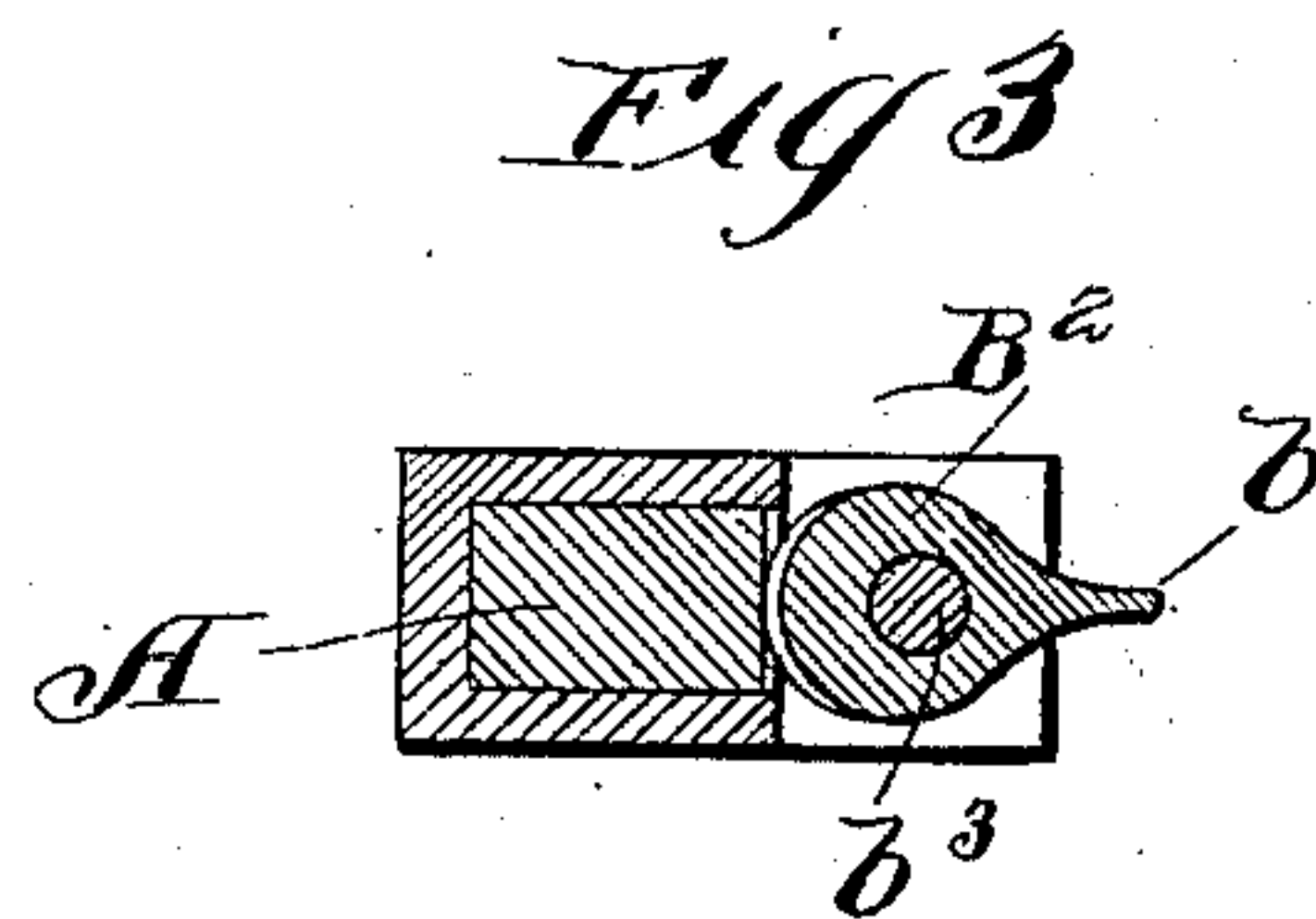
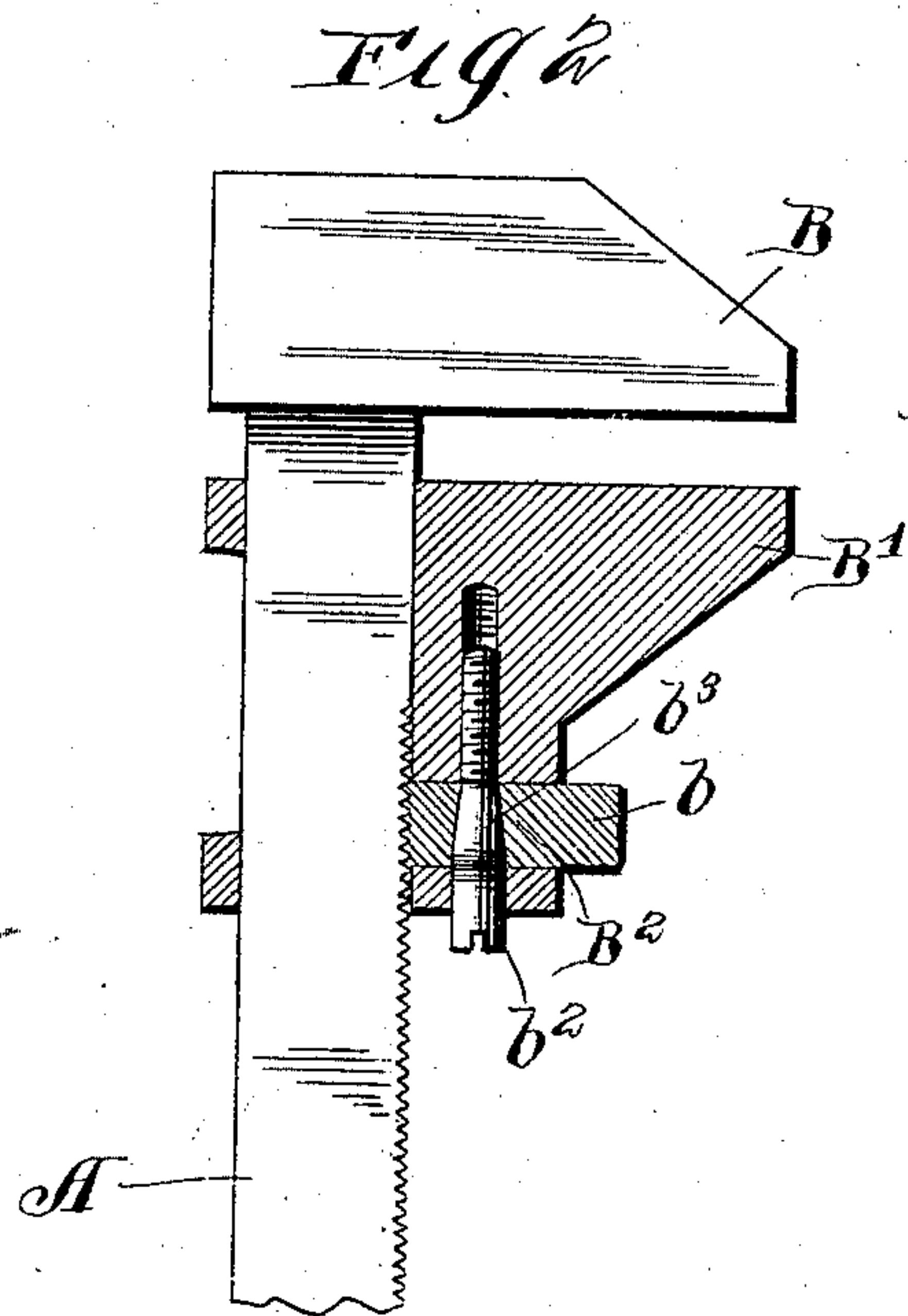
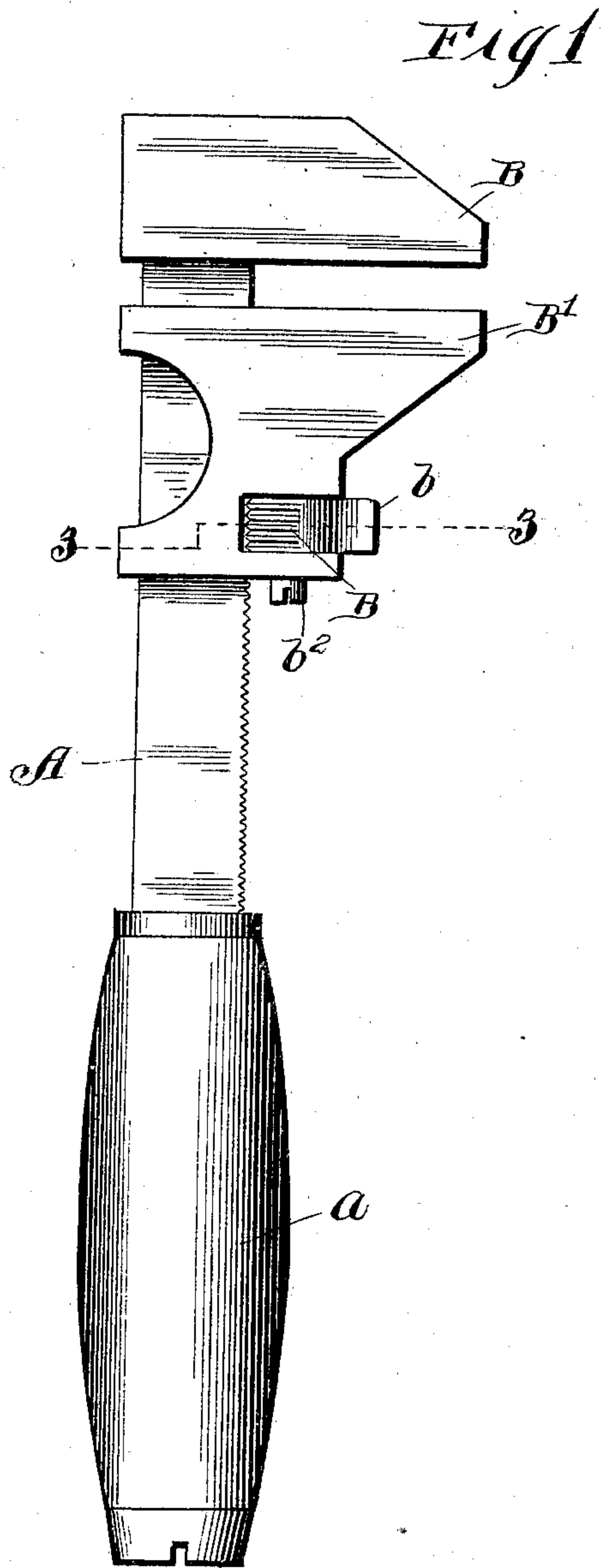
No. 665,987.

A. E. ABRAHAMSON.
WRENCH.

Patented Jan. 15, 1901.

(Application filed Mar. 17, 1900.)

(No Model.)



Witnesses:-
Carl A. Crawford
C. W. Hice

Inventor:-
Axel Edward Abrahamson
by Poole & Brown
his Attorneys

UNITED STATES PATENT OFFICE.

AXEL EDWARD ABRAHAMSON, OF CHICAGO, ILLINOIS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 665,987, dated January 15, 1901.

Application filed March 17, 1900. Serial No. 9,037. (No model.)

To all whom it may concern:

Be it known that I, AXEL EDWARD ABRAHAMSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wrenches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in wrenches of that class in which one of the jaws is movable with respect to the other to admit of the wrench being adjusted to nuts of different sizes.

The object of the invention is to provide a wrench in which the adjustment can be made quickly and in which the adjustable jaw may be positively locked in its operative position.

The invention consists in the matters hereinafter described, and more fully pointed out and defined in the appended claim.

In the drawings, Figure 1 is a view in side elevation of a wrench embodying my invention. Fig. 2 is a fragmentary view in side elevation, showing the adjustable jaw and locking means in section. Fig. 3 is a section taken on line 3 3 of Fig. 1.

In the said drawings, A indicates the shank or bar of the wrench, provided at one end with a handle a and having at its other end a fixed head or jaw B in a familiar manner. B' indicates a movable jaw having its face adjacent to the face of said fixed jaw parallel thereto. The said movable jaw is provided with the usual aperture to receive the said bar A, upon which said movable jaw is adapted to slide. B² indicates an eccentric locking-cam pivoted to said movable jaw to turn on an axis parallel with the shank, so as to swing in a plane transverse to said bar A and adapted to engage the bar, thereby locking the movable jaw in any desired position. The said bar A is provided on its side adjacent to the cam with a plurality of transverse corrugations, teeth, or ridges, as illustrated in Figs. 1 and 2. The said cam B² is likewise provided upon its peripheral surfaces, which engage the said bar, with ridges or corrugations complementary to and adapted to register with the ridges of said bar. The said cam is also

provided with an integral thumb-piece or lever b , whereby the cam can be rotated into binding engagement with the bar. The cam and its lever are preferably made symmetrical in form, and the cam is arranged for engagement with the bars when in its central position, so that the lever can be actuated in either direction from its central position in locking and releasing the movable jaw. As a further improvement I have provided means for taking up the wear of said cam upon its pivot b^2 , as follows: The said cam is located in a recess in the jaw, and the said pivot, as illustrated in Fig. 2, passes through said recess, is screw-threaded, and is seated in said movable jaw parallel to the bar A. Said pivot is provided near its outer end with a tapered or conical section b^3 , and the pivot-aperture in the cam is provided with a complementary taper. The said pivot is also provided at its outer end with a slot or other means of rotating or driving the same.

In assembling the parts of the wrench, the movable jaw having been placed upon the bar, as shown, the cam is placed in the recess, and the pivot-pin is inserted there-through and tightened therein to a desired degree. If through wear the aperture in the pivot shall become enlarged, the pivot reduced in size, if the pivot be screwed farther into the movable jaw the conical section thereof fitting into said tapered aperture will effect the adjustment of the pivot with respect to the cam to any desired degree, thereby insuring that the said cam will be accurately held in operative condition with respect to the bar.

While I have shown the said invention as applied to a wrench adapted to engage only nuts or the like, it may obviously be applied to wrenches designed to engage pipes or tubes or the like, the only change necessary being to provide the engaging faces of the jaws with gripping-teeth in a familiar manner.

Obviously a wrench constructed as shown and described possesses great strength, inasmuch as the contact between the cam and the bar is on the inner side of the latter. Clearly in a wrench so constructed the greater the strain upon the wrench the more firmly the cam will bind upon the bar, thereby insuring the movable jaw from slipping thereon.

I claim as my invention—

A wrench comprising a bar having at one end a fixed jaw or head, a movable jaw sliding on said bar, a cam pivoted on said movable jaw to swing in a plane transverse to said bar, and adapted to engage the same, and means for taking up the wear of said cam on its pivot, comprising a pivot-pin having screw-threaded engagement with said jaw
10 and provided with a conical section having

interfitting relation with a corresponding conical aperture in said cam.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 10th day of March, A. D. 15 1900.

AXEL EDWARD ABRAHAMSON.

Witnesses:

C. CLARENCE POOLE,
C. W. HILLS.