

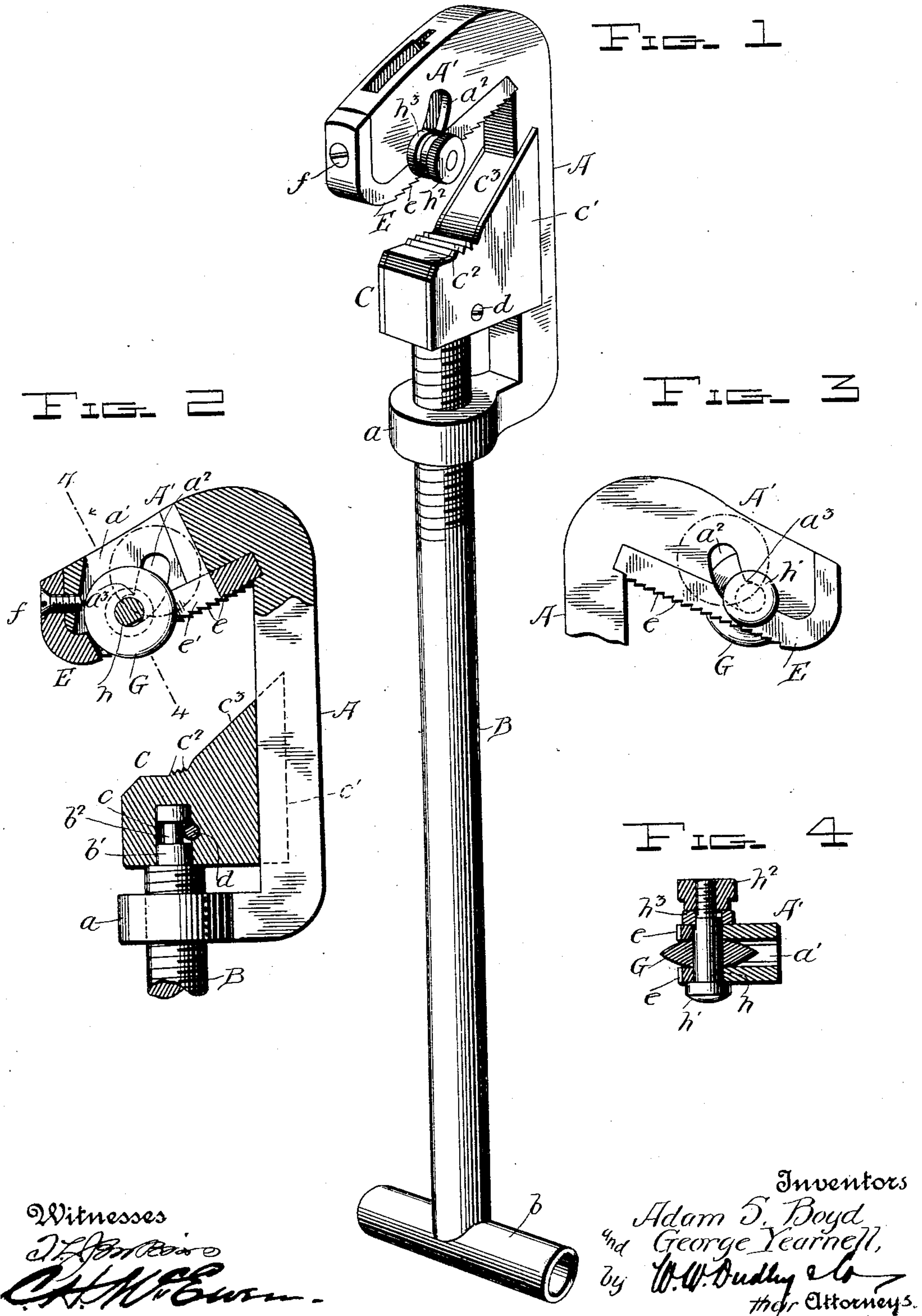
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Patented June 24, 1902.

A. S. BOYD & G. YEARNELL.
PIPE CUTTER AND WRENCH.

(Application filed Feb. 3, 1902.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

ADAM SIMPSON BOYD AND GEORGE YEARNELL, OF SHENANDOAH,
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PIPE CUTTER AND WRENCH.

SPECIFICATION forming part of Letters Patent No. 702,919, dated June 24, 1902.

Application filed February 3, 1902. Serial No. 92,435. (No model.)

To all whom it may concern:

Be it known that we, ADAM SIMPSON BOYD and GEORGE YEARNELL, citizens of the United States, residing at Shenandoah, in the county of Schuylkill and State of Pennsylvania, have invented certain new and useful Improvements in Pipe Cutters and Wrenches; and we do 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, 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 pipe cutters and wrenches, and contemplates the production of a simply and durably constructed device of this character which by a slight adjustment is converted from a pipe-cutter into a pipe-wrench, and vice versa, and which is adapted also for use as a nut-wrench.

Other novel features possessed by our invention are set forth in the following detailed description, in which reference is made to the accompanying drawings, illustrating the invention in its preferred form.

In the drawings, Figure 1 is a perspective view of a pipe cutter and wrench embodying our invention. Fig. 2 is an enlarged view, partly in section, of the upper portion of the device. Fig. 3 is an elevation of the opposite side of the fixed jaw. Fig. 4 is a sectional view on line 4 4 of Fig. 2.

Referring to the drawings by letter, A denotes the body of the device, which has at its upper end a fixed jaw A' and at its lower end an apertured projection a. The aperture of the extension is screw-threaded and receives the screw-threaded upper end of a handle-rod B, which terminates at its lower end in a cross-handle b and has at its upper end a reduced portion b', fitting a cylindrical recess c in a movable jaw C. The portion b' of the handle-rod has an annular groove b², engaging which is a screw d, passed transversely through the movable jaw, whereby said jaw is movable vertically with the handle-rod as the latter is turned. The movable jaw is guided by flanges c' c', which flank the body A.

The fixed jaw A' is preferably at an acute angle to the body A. The gripping-teeth or serrations e e are on a plate E, fitted to the under and outer faces of the fixed jaw and removably secured to the latter by a screw f, passed into the end of the jaw. This serrated or toothed plate, which coöperates with serrations or teeth c² c² on the movable jaw to grip a pipe or a nut, is easily removable to permit the sharpening of the serrations or teeth and when much worn may be replaced by a similar plate.

In the fixed jaw is an opening a', and in the plate E is a similar opening e', registering therewith. These openings are occupied by a cutter-wheel G, loosely mounted on an axle h, the ends of the latter passing through curved slots a² a² in the fixed jaw and plate. On one end of the axle is a fixed head h' of larger diameter than the width of the slots, and the other end of the axle is screw-threaded to receive a nut h², having a milled periphery.

h³ is a metal washer interposed between the nut h² and the side of the fixed jaw, the washer having a portion of its aperture squared to engage a squared portion of the axle, whereby they are rotated in unison.

In practice when the device is to be employed to cut a pipe the cutter-wheel is moved to bring its periphery through the opening e' and below the plate E, the axle in this position of the wheel resting in the lower end of the slots a². To permit of the described movement of the wheel, the nut h² is first loosened, and after the adjustment the nut is tightened to maintain the wheel in cutting position. The operation of cutting will be readily understood. The movable jaw is moved against the work by turning the handle-rod, this being done from time to time as the cut deepens. In the upper wall of the slots a² is an offset a³, providing a shoulder, which receives the thrust of the wheel-axle during the cutting operation. When the device is to be used as a pipe or nut wrench, the wheel is moved out of cutting position and entirely within the opening a² by first loosening the nut and then by moving the axle past the offset a³ and upwardly to the upper end of the slots, as

shown in dotted lines in Figs. 2 and 3, after which the nut is tightened. This adjustment of the wheel leaves the teeth or serrations of the plate E free to grip the pipe or nut, as
5 will be understood.

The movable jaw C is provided between the teeth or serrations c^2 and its flanged inner side with an upwardly-inclined plain or un-toothed surface c^3 . The function of this sur-
10 face is to allow of the ready turning of the device on the work to secure a new hold when the device is used as a wrench and when em-
ployed as a cutter to enable the turning of the device with the minimum of friction. In
15 the use of the device the work is wedged between the surfaces of the two jaws, the jaws having surfaces of different angles, and the work is thus readily released when the de-
vice is reversely turned.

20 We claim as our invention—

1. In a device of the class described, a body terminating in a fixed jaw, a removable ser-
rated plate seated at its inner end in a recess
25 in the body and having an upturned outer end secured to the outer end of the jaw, and

a movable jaw having flanges flanking the body.

2. A convertible pipe cutter and wrench consisting of a body, an upper jaw, a cutter-wheel in said jaw having axles movable in
30 curved slots to adjust the wheel into idle and cutting positions, and means for maintaining the adjustments.

3. A convertible pipe cutter and wrench consisting of a body, an upper jaw having an
35 opening and flanking curved slots, offsets in the slots near the lower end thereof, a wheel in said opening, a headed axle for the wheel passed through the slots, and a nut on the
threaded end of the axle whereby the wheel
40 may be adjusted and maintained in idle and cutting positions.

In testimony whereof we affix our signatures in presence of two witnesses.

ADAM SIMPSON BOYD.

GEORGE ^{his} × YEARNELL.
mark

Witnesses:

HARRY TEMPEST,
WILLIAM PATTERSON.