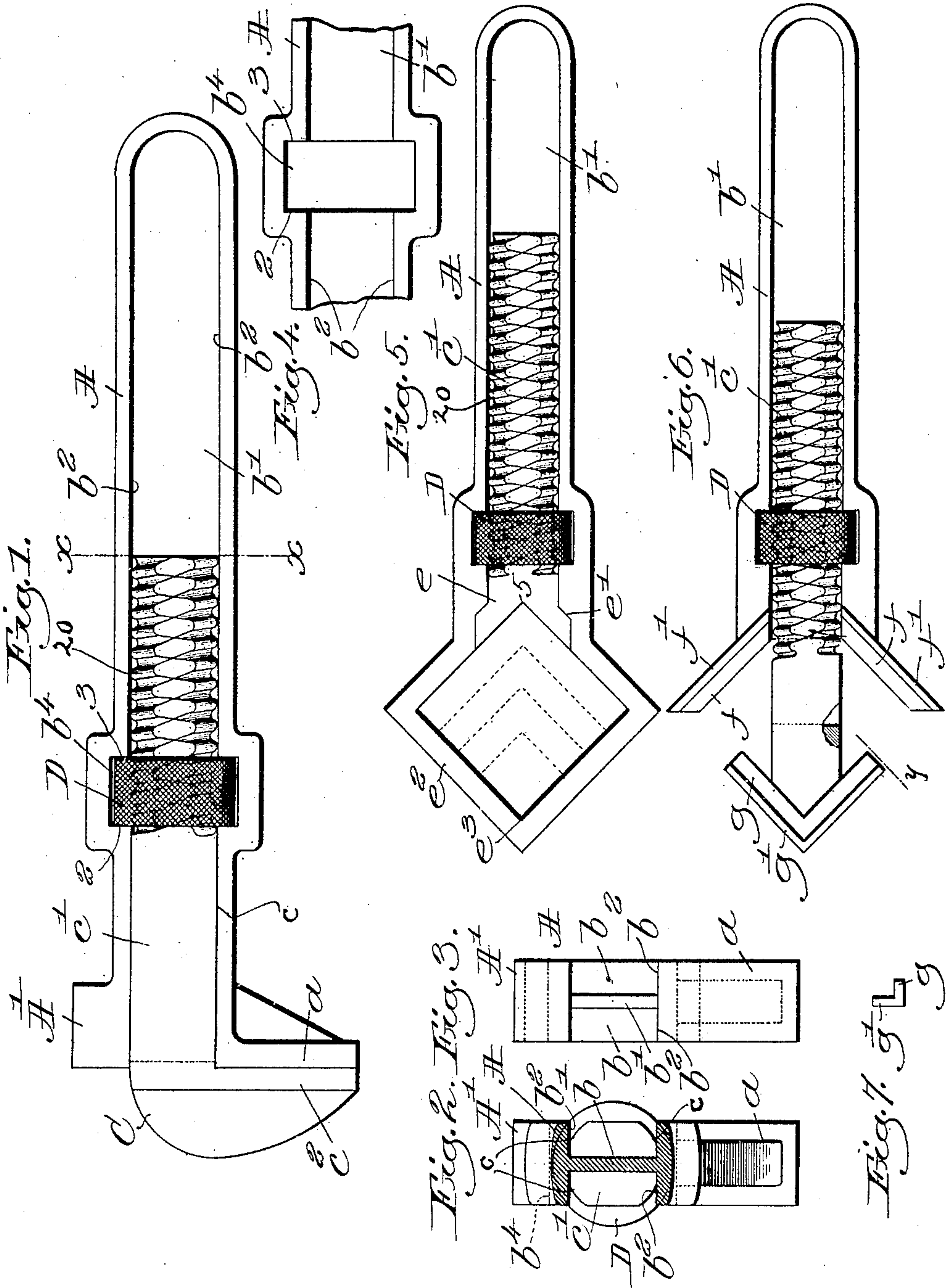


No. 875,702.

PATENTED JAN. 7, 1908.

A. G. ELY.
WRENCH.

APPLICATION FILED NOV. 14, 1904.



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UNITED STATES PATENT OFFICE.

ALFRED G. ELY, OF NEW YORK, N. Y.

WRENCH.

No. 875,702.

Specification of Letters Patent.

Patented Jan. 7, 1908.

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To all whom it may concern:

Be it known that I, ALFRED G. ELY, a citizen of the United States, and a resident of New York, in the county and State of New York, have invented an Improvement in Wrenches, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawings representing like parts.

10 This invention is an improvement on the class of wrench shown and described in United States Patent, No. 765569, dated July 19, 1904.

The wrench to be described and claimed 15 comprises a movable jaw having a split shank and a hand piece having at one end a stationary jaw, opposite sides of the hand piece being reduced in thickness centrally from the end having the jaw in the median 20 line in the direction of the length of the hand piece, the reduction forming channels at both sides and presenting a thin web that is located in the median or central line of the hand piece and parallel with the length of the 25 jaw or width of the hand piece. This web is embraced by the split shank of the movable jaw to be described. The channels made by reducing centrally the thickness of the hand piece in the formation of the thin web leave 30 side walls that serve as guides for and receive between them the legs of the split shank of the movable jaw. The movable jaw is threaded and embraced by a nut which is sustained by the hand-piece against move- 35 ment longitudinally thereof. The thin central web of the hand-piece is cut out to receive a nut.

Figure 1 in side elevation shows a wrench embodying my present invention; Fig. 2 is a 40 section on the line x looking toward the left. Fig. 3 shows the jaw end of the hand piece; Fig. 4 shows part of the hand piece illustrating the nut receiving notch; Fig. 5 shows a modified form of wrench embodying my in- 45 vention; Fig. 6 shows yet another modified form of my invention; and Fig. 7 is a view to the right of line y , Fig. 6.

The hand piece A has at one end a projecting jaw a , and as illustrated I have provided the same end with a lump A' that may 50 be used as a hammer. The hand piece commencing at its end having the jaw is reduced in thickness in its median line in the direction of its length for a part of its width, this 55 being done by forging or otherwise leaving channels b , b the bottoms of which are sepa-

rated by a thin web b' , each side wall b^2 of the channels presenting a guiding surface for the edges c of the split shank c' of the movable jaw C having a projection c^2 to coact 60 with the jaw a and grasp a nut or other thing to be turned by the wrench. The channel shown is of sufficient depth to receive the legs of the forked shank of the movable jaw as shown in Fig. 2.

The movable jaw is substantially the same 65 as shown in said patent and it straddles the thin web b . The web of the hand piece is cut through between the edges of the hand piece as shown at b^4 for the reception of a nut D which is applied to the threaded parallel 70 legs of the split shank of the movable jaw. The hand piece, Fig. 1, is somewhat wider in the line of the notch b^4 to leave shoulders 2—3 that maintain the nut in operative po- 75 sition and prevent it from being moved longitudinally when being rotated about the threaded shank of the loose jaw.

The wrench shown comprises but three 80 pieces, is greatly reduced in weight owing to the formation of the channels longitudinally of the hand piece on opposite sides, and the thin ribs or vertical walls constituting the edges of the hand piece add great strength thereto.

The movable jaw, including the projection 85 c^2 and the split shank are in one piece and are formed by forging, the thread on the shanks of the jaw being cut therein, the threads presenting a rounded bottom and top.

This invention is not limited to the particular shape shown of the jaw, Fig. 1, as the 90 parts of the wrench to contact with the nut may be varied to correspond in shape with jaws commonly used in nut wrenches where 95 the jaws are movable or adjustable one with relation to the other in adapting the jaws to grasp nuts of various sizes.

Figs. 5 and 6 show modified forms of 100 wrenches embodying the invention to be herein claimed. In Fig. 5 the jaw e having the slotted shank fitting the central thin wall of the hand piece is represented as notched at 5 and adapted to be retracted for the 105 largest nut into the space e' of the hand piece, and the hand piece has a stationary or loop-shaped jaw e^2 presenting a corner e^3 opposite the notch 5 of the movable jaw e . The dotted lines, Fig. 5 show the positions that may be occupied by the sides of four 110 different sized nuts.

In the modification, Figs. 6 and 7, the

movable jaw having the slotted and threaded shank is provided with a jaw *g* having a flanged lip *g'*, while the jaw *f* at the end of the hand piece and opposed to and coacting with the movable jaw *g* is right angular in shape and has a flange *f'*. In a wrench of this kind the flanged lips may be readily inserted in the recess of a hub-band of a wheel to grasp the nut on an axle.

10 Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A wrench comprising a hand piece having at one end a fixed jaw and having channels open at the opposite sides of the hand piece in the median line thereof, said channels being separated by a thin web extended in a direction parallel with the length of said jaw, said web having a transverse opening, a nut sustained in said opening, and a jaw having a slotted and threaded shank, the legs of the shank entering said open channels and being exposed along the sides of the hand piece, the threaded ends of the legs entering the nut, as and for the purpose described.

2. A wrench comprising a hand piece having a jaw at one end and provided at each side thereof with channels that start from the face of the jaw and extend along the median line of the hand piece toward the opposite end, said two channels having side walls, one channel being separated from the other by a thin web constituting a common bottom for both the channels, said web being provided with a notch, a nut located in the notch of the web and sustained by shoulders of the

hand piece, and a jaw having two parallel legs extended therefrom, said legs being threaded and entering the open longitudinal channel of the hand piece and the nut, the side edges of the legs coacting with and being guided by the side walls of the hand piece, said legs constituting the exposed sides of the hand piece.

3. A wrench comprising a hand piece having a jaw at one end and provided at its opposite sides with channels that start from the face of the jaw and extend along the median line of the hand piece toward the opposite end thereof, said two channels having side walls, one channel being separated from the other by a thin web constituting a common bottom for both channels, said web being provided with a notch extended into said side walls, a nut located in said notch and sustained by the shoulders of the side walls of the hand piece, and a jaw having two parallel legs extended therefrom, said legs being threaded and entering the open longitudinal median channels of the hand piece and being extended through said nut, the side edges of said legs co-acting with and being guided by the side walls of the hand piece, the threaded sides of said legs being exposed at opposite sides of the hand piece.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ALFRED G. ELY.

Witnesses:

HENRY L. CONKLIN,
THOS. A. MULLIGAN.