No. 799,432. PATENTED SEPT. 12, 1905.

H. AUE.

WRENCH.

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Fig. 1.

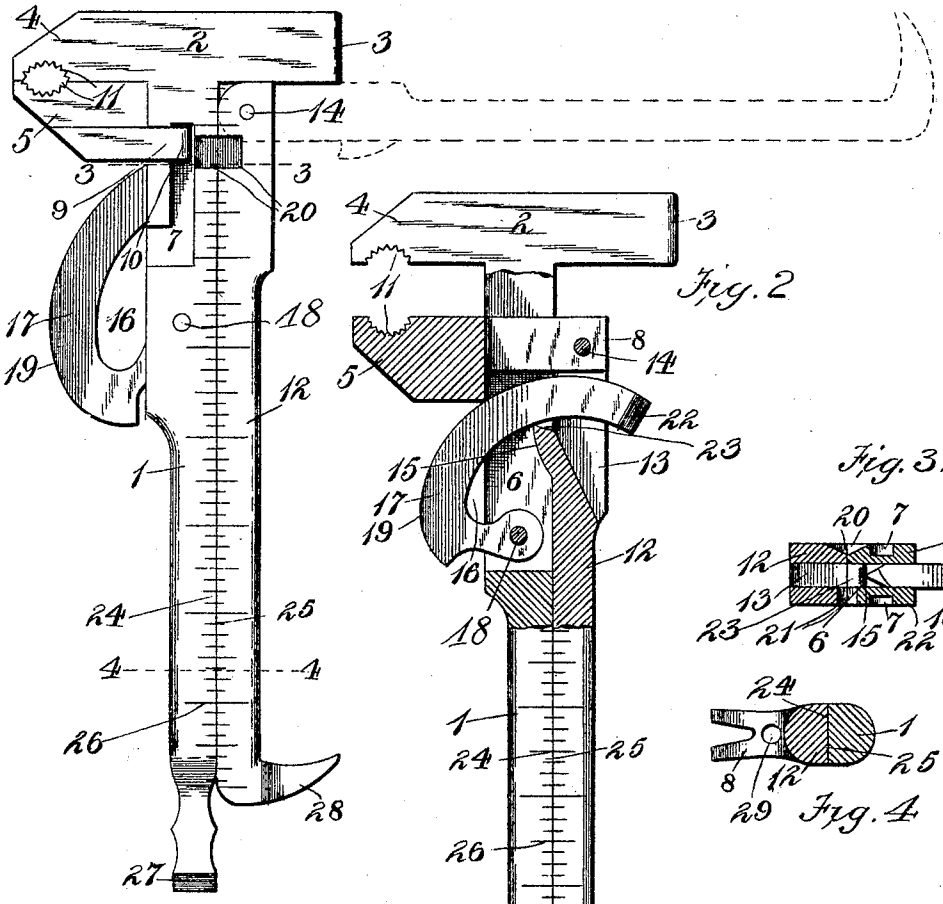

Fig. 2

Fig. 3.

Fig. 4

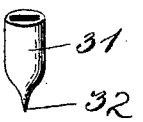

Fig. 5.

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UNITED STATES PATENT OFFICE.

HENRY AUE, OF GRADATIM, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO VALENTIN KLEIN, NICKOLAUS KLEIN, AND IGNAZ STAUFFER, OF CECIL, PENNSYLVANIA.

WRENCH.

No. 799,432. Specification of Letters Patent. Patented Sept. 12, 1905.

Application filed June 5, 1905. Serial No. 263,825.

To all whom it may concern:

Be it known that I, HENRY AUE, a subject of the Emperor of Germany, residing at Gradatim, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches; and I 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.

My invention relates to improvements in wrenches.

The object of the invention is to improve and simplify the construction and operation of devices of this character, and thereby render the same more efficient and durable in use and less expensive to manufacture.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of my improved tool in its closed position. Fig. 2 is a similar view with parts in section, showing the jaws of the wrench separated. Figs. 3 and 4 are transverse sectional views taken, respectively, on the lines 3 3 and 4 4 in Fig. 1; and Fig. 5 is a detail perspective view of a cap which may be secured upon the tool when it is desired to use the same as a compass.

Referring to the drawings by numerals, 1 denotes a shank having at one end a cross-head 2, which is formed with a hammer-head 3 and a fixed wrench-jaw 4. The latter coacts with a movable wrench-jaw 5, which is slidably and adjustably mounted upon the shank 1. The sliding connection between the movable jaw and the shank is preferably effected by forming the latter with a longitudinally-disposed slot 6 and longitudinally-extending grooves 7, disposed in the outer faces or sides of the shank, and by forming the jaw 5 with a reduced portion or tongue 8, adapted to project through and slide in the slot 6, and with parallel side arms 9, which engage the opposite sides of the shank 1 and are formed with enlargements 10, adapted to slide in the grooves or recesses 7, as clearly shown in Fig. 3 of the drawings. The coacting wrench-jaws 4 5 have the outer portions of their opposing faces formed with corrugated or serrated recesses 11 to adapt the wrench to engage pipes, rods, or the like, as well as the heads of nuts or bolts. The jaw 5 is held in an adjusted position by means of a lever 12, which has its upper bifurcated end 13 pivoted by a pin or bolt 14 upon the projecting end 8 of the jaw 5. This lever 12 is formed upon its inner face at the inner end of its slot or recess with a projecting lug or tooth 15, which is adapted to enter the slot 6 and to engage the inner face 16 of a pivoted cam 17. This cam 17 has one of its ends pivoted, as shown at 18, in the lower end of the slot 6 in the shank, and its opposite end is adapted to project through and swing in the slot 6 and the slot in the end 13 of the lever 12, as clearly shown in Fig. 2 of the drawings. The outer face 19 of this cam is adapted to engage the lower edge of the sliding jaw 5 when the projection or tooth 15 engages its inner face or edge, so as to hold the jaw 5 in an adjusted position. It will be seen that this cam 17 is of the same width throughout, so that when the lever 12 is swung inwardly against the shank 1, as shown in Fig. 1 of the drawings, the cam will exactly fit the space between said projection and the bottom of the jaw 5 without regard to the position of said jaw upon the shank.

In order to permit wires or small rods to be cut by the tools, the shank 1 and the lever 12 have portions 20 of their opposing faces beveled or tapered, as clearly shown in Fig. 3 of the drawings, to form opposing cutting edges. The remaining portions of the shank and lever in transverse alinement with these cutting edges 20 are recessed, as shown at 21. The outer or free end of the cam 17 is also beveled, as shown at 22, to form a cutting-head, which coacts with the angularly-disposed end 23 of the projection or tooth 15.

Owing to the swiveled connection 14 of the lever 12, the latter may be swung outwardly, as shown by the dotted lines in Fig. 1, until its outer face engages the hammer-head 3, and when in this position the straight opposing faces 24 25 of the shank and lever, respectively, will be at right angles to each other to permit the tool to be used as a square. I also preferably graduate the edges of the shank and lever, as shown at 26, to permit the tool to be used as a rule.

The lower end of the shank 1 is formed with a reduced beveled portion 27, adapted for use as a screw-driver, and the corresponding end

of the lever 12 has a right-angularly-projecting portion 28, formed with a tapered slotted end adapted for use as a tack or nail extractor. To permit the tool to be used as a compass, the portion or end 28 of the lever 12 is formed with an opening 29, as clearly shown in Fig. 4 of the drawings, so that a pencil may be passed therethrough and secured to the lever. I also provide upon the end 27 of the shank 1 a removable cap or tip 31, having a point 32 to serve as a pivot when a circle or curve is being drawn by the pencil attached to the lever 12.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

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

1. The combination of a shank having a fixed jaw, a coacting jaw slidably mounted upon said shank, a curved or cam-shaped element of equal width throughout pivoted upon said shank and adapted to have its outer edge engage said slidable jaw, a lever pivoted upon said slidable jaw and formed with a projection or tooth adapted to engage the inner edge of said element to clamp the latter against said slidable jaw, substantially as described.

2. The combination of a shank formed with a longitudinal slot and longitudinal grooves in its outer side faces, a fixed jaw at one end of said shank, a coacting slidable jaw having a reduced portion projecting through said slot and arms to engage and slide in said grooves, a lever pivoted upon said reduced portion of said slidable jaw and formed with a longitudinal slot, a cam-shaped element pivoted in the slot in said shank and adapted to project therethrough and through the slot in said lever, said element being of equal width throughout and having its outer edge adapted to engage the under side of said slidable jaw, and a projection upon the inner face of said lever adapted to engage the inner face of said cam for the purpose of retaining said slidable jaw in an adjusted position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY AUE.

Witnesses:
ALPHONSE OBEISSIER,
C. J. MATHEWS.