

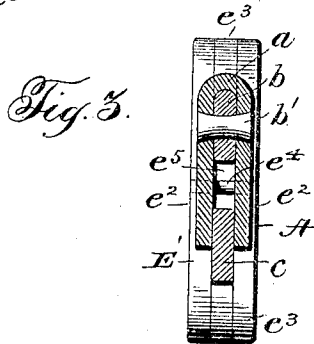
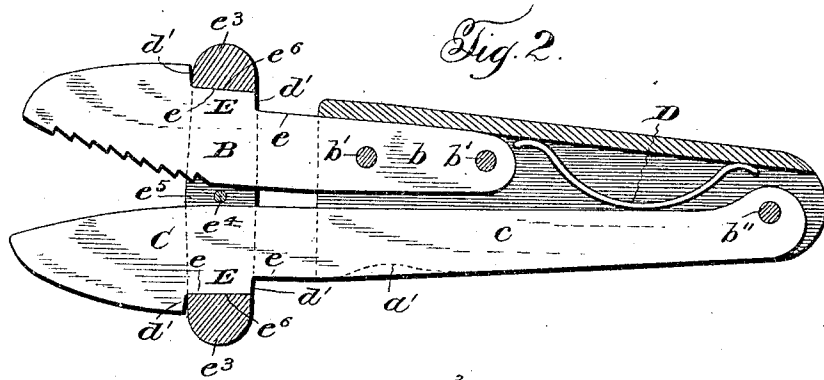
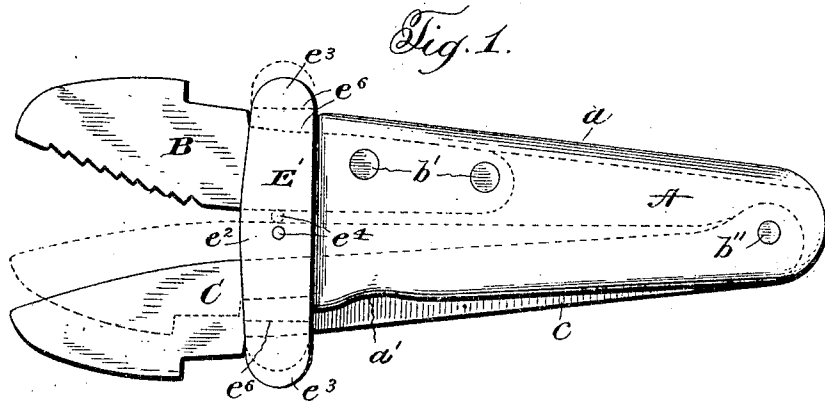
No. 856,660.

PATENTED JUNE 11, 1907.

F. H. SCHALL & M. PLUNKETT.

WRENCH.

APPLICATION FILED MAY 10, 1906.



Witnesses:

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# UNITED STATES PATENT OFFICE.

FRED H. SCHALL AND MARTIN PLUNKETT, OF GALESBURG, ILLINOIS; SAID  
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## WRENCH.

No. 856,660.

Specification of Letters Patent.

Patented June 11, 1907.

Application filed May 10, 1906. Serial No. 316,053.

*To all whom it may concern:*

Be it known that we, FRED H. SCHALL and MARTIN PLUNKETT, citizens of the United States, residing at Galesburg, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in wrenches and more particularly to wrenches of the alligator jaw type, and has for its object the provision of a wrench, the structure of which will be simple and strong, and one which may be manipulated to properly adjust the jaws by the use of but one hand of the operator.

The novel details in the construction and arrangement of the several parts of a wrench made in accordance with our present invention will be apparent from the detailed description hereinafter contained when read in connection with the accompanying drawings forming part hereof and wherein a convenient embodiment of the invention is illustrated.

In the drawings: Figure 1 is a side elevation of the wrench, Fig. 2 is a longitudinal sectional view, the parts being shown in a different position of adjustment as compared with Fig. 1, and Fig. 3 is a transverse sectional view.

Referring more specifically to the drawings wherein like reference characters refer to corresponding parts in the several views, A designates the handle or grip of the wrench which is preferably U-shaped in cross section having its rounded connecting edge *a* uppermost, B, the fixed jaw and C the opposing movable jaw. The fixed jaw has an elongated shank *b* projecting a considerable distance into the hollow of the handle A, where it is rigidly and permanently secured in place through the medium of rivets *b'*. The movable jaw C has a shank *c* substantially coextensive with the handle A, and loosely fits the hollow of said handle below the shank of the fixed jaw before referred to, and is pivotally secured at the end of said handle as indicated at *b''*, whereby it may shift toward or away from said fixed jaw. As shown the fixed jaw is provided with a number of teeth or serrations while the movable jaw is smooth, but it is obvious that both jaws may

be toothed if desired. Within the space on the interior of the hollow handle bordered by the connected edge *a* thereof, the end of the shank *b* of the fixed jaw, and the inner edge of the shank *c* of the movable jaw, a spring D is inserted, no other instrumentalities being afforded to secure said spring in place, whereby it has absolute freedom of movement in its expanding or contracting action. The spring normally tends to force the jaws apart, and the means for retaining the jaws against the action of said spring in either one of two positions of adjustment will now be described, although it is of course to be understood that the spirit of the invention comprehends any range of adjustment desired or found expedient in the particular use for which the wrench is to be employed. Between the jaws B and C and that portion of their shanks housed by the handle A are step-like portions E rising in a direction toward the outer ends of the jaws comprising longitudinally disposed straight, flat edges or treads *e* and shoulders or rises *d'*. Adapted to seat upon either pair of the edges *e* and in abutment with the corresponding shoulders *d'*, to lock the jaws closer together or farther apart as the case may be, is a sliding yoke E' comprising side bars *e<sup>2</sup>*, closed ends *e<sup>3</sup>* encompassing the jaw shanks, and a guiding pin *e<sup>4</sup>* arranged centrally of the open space therein and dividing the same into a passage for each of the jaw shanks. The walls of the yoke constituting the ends of the open space therewithin are flat and straight as represented at *e<sup>6</sup>* to be complementary to the formation of the flat edges *e*, of the shanks of the jaws.

The guide pin just referred to serves an important function in the adjustment of the yoke from the lowermost steps when the jaws are widely separated to the uppermost steps when the jaws are relatively close together, for it will be noted that the distance between the inner edges of the shanks of the jaws and said pin is substantially the same as the height of the shoulders or rises *d'*, so that when the jaws are spread apart and the yoke in its innermost position, a compression of the jaws against the action of the spring will bring the inner edge of the lowermost jaw into engagement with the pin about the time that the edge *d'* of the lowermost jaw has arisen beyond the lower wall of the opening in the

yoke and will thereby raise the yoke to throw the upper wall of the opening beyond the corresponding edge *d'* of the upper jaw when the yoke may be thrown forwardly toward the outer ends of the jaws by the thumb of the user onto the pair of foremost steps or edges, thereby locking the jaws closer together. This feature of the wrench will be clear from an inspection of Fig. 1, wherein the normal position of the yoke is shown in full lines and the manner of shifting the yoke under the compression of the jaws previous to forcing the same forwardly by dotted lines.

The end of the U-shaped handle A constitutes a stop or abutment limiting the inward movement of the yoke E'.

To accommodate the finger of the user when the lower or pivoted jaw is compressed against the spring, the sides of the handle A at the open edge thereof are depressed as indicated at *a'*.

The peculiar formation of the step-like portions of the jaws enables a long flat firm seating of the yoke when holding the jaws in adjusted position; affords an abrupt positive abutment preventing movement of the yoke, beyond the step to which it has been adjusted; enables the ready forward shifting of the yoke to an advanced pair of steps as the inner edges of the yoke are brought into alinement with the treads of the steps; and enables a solid formation and bracing of the steps whereby no thin or weakened edges or points are presented for wear or strain, the resultant breaking, ripping off, or wearing of which would correspondingly impair the efficiency of the adjusting instrumentalities.

I claim:

1. A wrench of the character described comprising two jaws, a substantially U-shaped handle, a shank on one of the jaws permanently secured within the hollow of said handle, a shank on the other of said jaws pivoted to said handle, means acting to force the pivoted jaw outwardly, and means for locking the jaws in various positions of adjustment including an adjustable yoke encompassing the shanks of the jaws and held against excessive inward movement by the end of the substantially U-shaped handle.

2. A wrench of the character described comprising two jaws, a substantially U-shaped handle, a shank on one of the jaws permanently secured within the hollow of said handle, a shank on the other of said jaws

pivoted in said handle, a spring freely inserted in the space in the handle intermediate the inner end of the permanently secured shank and the pivoted end of the other shank acting to force the pivoted jaw outwardly, and means for locking the jaws in various positions of adjustment.

3. A wrench of the character described comprising two jaws, a handle, a shank on one of the jaws permanently secured to said handle, a shank on the other of said jaws pivoted to said handle, means acting to force the pivoted jaw outwardly, and means for locking the jaws in various positions of adjustment including an adjustable yoke encompassing the shanks of the jaws and held against excessive inward movement by the end of the handle.

4. A wrench of the character described comprising two jaws, a handle, a shank on one of the jaws secured to the handle, a shank on the other of said jaws movably connected to said handle, means acting to force the movable jaw outwardly, and means for locking the jaws in different positions of adjustment including step-like edges on the jaw-shanks, a shiftable yoke encompassing said shanks adapted to engage corresponding treads of the step-like edges and held against excessive inward movement by the end of the handle.

5. A wrench of the character described comprising two jaws, a handle, a shank on one of the jaws secured to the handle, a shank on the other of said jaws movably connected to said handle, means acting to force the movable jaw outwardly, and means for locking the jaws in different positions of adjustment including step-like edges on the jaw-shanks, a shiftable yoke encompassing said shanks adapted to engage corresponding treads of the step-like edges and held against excessive inward movement by the end of the handle, said yoke having a part arranged to effect the shifting of the same from an initially adjusted position into registration with advanced step-like edges.

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

FRED H. SCHALL.  
MARTIN PLUNKETT.

Witnesses:

PAUL A. TYLER,  
WM. ROBERT COYNER.