A. E. ASHLIMAN.

WRENCH.

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1,068,960. **Patented July 29, 1913.**

Fig. 1

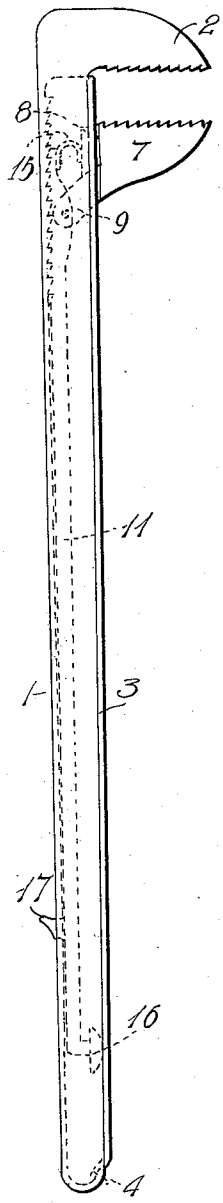


Fig. 2

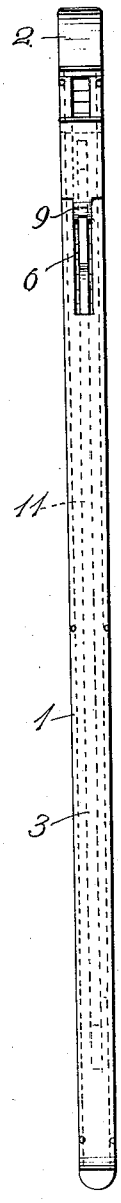


Fig. 3

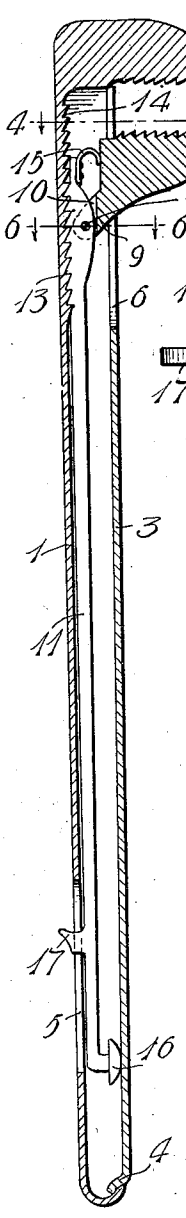


Fig. 4

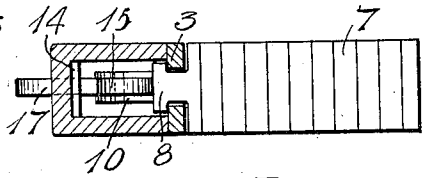


Fig. 5

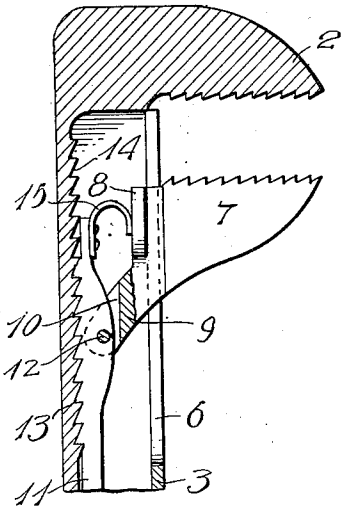
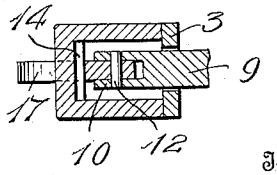


Fig. 6



Witnesses

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WRENCH.

1,068,960. Specification of Letters Patent. Patented July 29, 1913.

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To all whom it may concern:

Be it known that I, ADOLPH E. ASHLIMAN, a citizen of the United States, residing at Haskell, in the county of Haskell and State of Texas, 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.

This invention relates to improvements in wrenches.

One object of the invention is to provide a wrench having an improved construction and arrangement of adjustable jaw and means whereby the same may be readily adjusted by the same hand which operates the wrench, thereby leaving the other hand free to be employed for other purposes and greatly facilitating the use of the wrench.

Another object is to provide a wrench of this character which will be simple, strong, durable and inexpensive in construction, efficient and reliable in operation and in which the jaw adjusting mechanism is inclosed in the handle of the wrench.

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

In the accompanying drawings; Figure 1 is a side view of my improved wrench; Fig. 2 is a front edge view thereof; Fig. 3 is a longitudinal sectional view of the wrench; Fig. 4 is a cross sectional view taken on the line 4—4 of Fig. 3; Fig. 5 is an enlarged vertical section of the outer end of the wrench showing more clearly the construction and arrangement of the removable jaw operating mechanism; Fig. 6 is a cross sectional view taken on the line 6—6 of Fig. 3.

My improved wrench comprises a hollow handle 1 which may be of any suitable size and length and which is provided on its outer end with a stationary jaw 2. The jaw 2 is preferably formed integral with the handle 1 and the front edge of the handle is preferably open and is closed by a plate 3 which is riveted or otherwise rigidly secured to the handle after the operating members of the movable jaw have been assembled in the handle. The inner end of the plate 3 is preferably offset inwardly to form a lug 4 which is engaged with the edge of the inner end of the open side of the handle as clearly shown in Fig. 3 of the drawings. In the rear edge of the handle near the inner end thereof is formed a longitudinal slot 5, while in the plate 3 at the outer end thereof is formed a longitudinal slot 6. Co-acting with the stationary jaw 2 is an adjustable jaw 7 having on its inner end a T-head 8 and a stem 9 which has on its inner end a pair of apertured ears 10. The head 8 and shank 9 are projected through the slot 6 and into the upper portion of the hollow handle, and said T-head has a sliding engagement with the slotted outer end of the plate 3 and holds the jaw 7 in operative engagement with the handle. The working faces of the stationary and adjustable jaws are preferably serrated whereby said jaws may obtain a firm grip on a pipe or other cylindrical object when applied thereto.

The shank 9 of the adjustable jaw 7 is pivotally connected to the outer end of a jaw adjusting rod 11 which is arranged in the hollow handle 3 and extends from the jaw 7 to a point near the inner end of the handle. The outer end of the rod 11 to which the shank 9 is connected is preferably enlarged or offset and this portion of the rod is engaged between the lugs 10 and receives a pivot bolt 12 which is inserted therethrough and through the lugs as shown. On the rear edge of the outer end of the rod 11 are formed a series of ratchet teeth 13 which are adapted to be engaged with a rack 14 formed on the inner surface of the adjacent edge of the handle whereby the adjusting rod 11 and the jaw 7 are firmly held in their adjusted positions.

Secured to the inner edge of the extreme outer end of the operating rod 11 is a bowed spring 15 the free end of which is engaged with the inner side of the T-head 8 of the adjustable jaw 7 whereby the head 8 is held in yielding engagement with the inner surface of the slotted end of the plate 3 and the jaw 7 held in position to co-act with the stationary jaw 2. The inner end of the rod 11 is offset at right angles to a slight extent and has on said end a segmental head 16 which bears against the inner surface of the inner end of the plate 3 and forms a fulcrum for the operating rod 11 whereby the upper portion of the rod may be pushed inwardly to disengage the ratchet teeth 13 thereon from the rack 14 in the handle to permit the rod 11 and jaw 7 to be retracted and the jaws of

the wrench thus opened. In order to facilitate the operation of the rod 11 I provide the same with an operating lug 17 which projects outwardly through the slot 5 in the inner end of the handle to a sufficient extent to be engaged by the thumb or finger of the hand which holds and operates the wrench. The lug 17 is preferably shaped as shown to facilitate the engagement thereof by the thumb or fingers.

When it is desired to shift the adjustable jaw 7 toward the stationary jaw it is simply necessary to push outwardly on the operating rod by means of the lug 17 which will shift the jaw 7 toward the stationary jaw 2 as the arrangement of the ratchet teeth on the rod 11 and the teeth of the rack 14 are beveled in the proper direction to permit the teeth 13 of the rod to slip over the teeth of the rack against the pressure of the spring 15 which yieldingly holds the teeth of the rod in engagement with the rack teeth. When it is desired to shift the adjustable jaw in the opposite direction or away from the stationary jaw it is first necessary to press inwardly on the lug 17 thereby rocking the operating rod on its fulcrum head 16 and thus disengaging the teeth 13 of the rod from the teeth of the rack 14 whereupon the rod may then be drawn outwardly toward the end of the handle and the adjustable jaw shifted to the desired distance from the stationary jaw. As soon as the adjustable jaw has been shifted to the desired position the operating rod 11 is released, whereupon the spring 15 will force the teeth 13 of the rod into engagement with the teeth of the rack thereby securely locking the adjustable jaw in its adjusted position.

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.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim as new is:

A wrench comprising a hollow handle having in its inner and outer edges longitudinal slots, a stationary jaw on the outer end of said handle, an adjustable jaw having an inwardly extending shank and a T-head engaged with the slot in the inner edge of the handle whereby said adjustable jaw is held in operative engagement with the handle, a jaw operating rod slidably mounted in said hollow handle and having its outer end pivotally connected to the shank of said adjustable jaw, ratchet teeth on the outer end of said rod and adapted to engage the rack in said handle whereby said rod and adjustable jaw are locked in their adjusted positions, a spring secured to said rod and having an operative engagement with the adjustable jaw whereby the teeth of the rod are held in yielding engagement with said rack, a fulcrum head on the inner end of said operating rod and adapted to bear on the inner surface of the handle whereby the operating rod may be rocked to disengage the teeth thereof from the rack in the handle to permit the operation of the adjustable jaw and an operating lug on said operating rod and adapted to project through the slot in the outer edge of the handle in position to be gripped and operated by the hand which holds and operates the wrench.

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

ADOLPH E. ASHLIMAN.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."