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J. B. M. WINBURN.

WRENCH.

APPLICATION FILED FEB. 23, 1906.

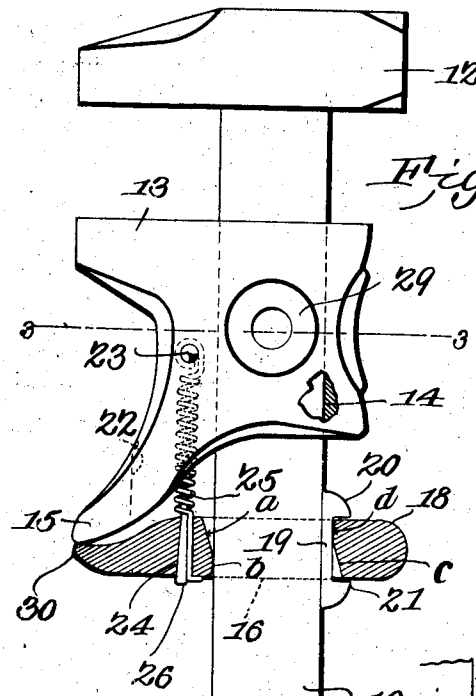


Fig. 1.

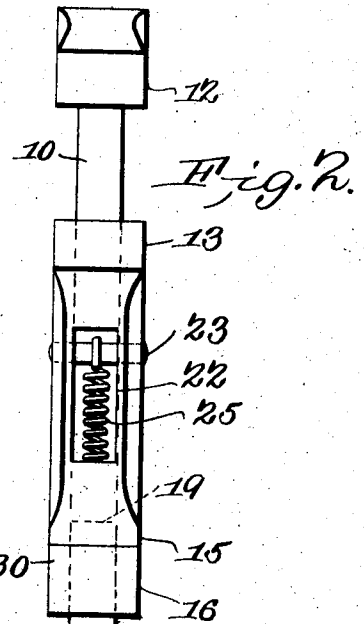


Fig. 2.

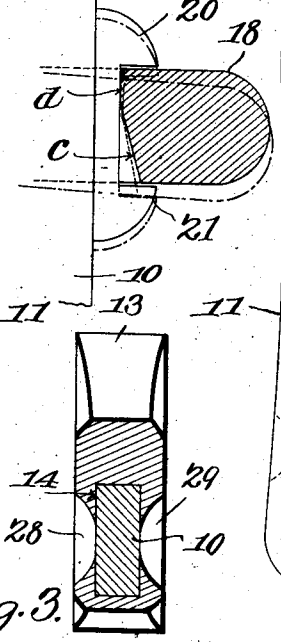


Fig. 4.

Fig. 3.

WITNESSES:

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WRENCH.

No. 834,545. Specification of Letters Patent. Patented Oct. 30, 1906.

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To all whom it may concern:

Be it known that I, JAMES B. M. WINBURN, a citizen of the United States, residing at Gainesville, in the county of Hall and State of Georgia, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to wrenches of that class wherein the movable jaw is slidable upon the stock of the wrench.

The prime object of the invention is to obtain a quick adjustment of the movable jaw in a simple and improved manner.

Heretofore in wrenches of this class there has been a biting action between a sharp element of the movable jaw and the stock of the wrench, whereby the latter becomes roughened to such an extent as to present well-defined teeth or notches into which the sharp element of the jaw engages, thereby limiting the adjustment of the movable jaw to the successive positions defined by the notches or teeth. Furthermore, the sharp element becomes worn and dull and instead of effecting a prompt and positive interlocking of the jaw and the stock it slips thereon and renders the adjustment of the jaw difficult and fails to hold the same to the work.

In view of the objections noted it is the purpose of the present invention to obviate the employment of a biting element and to secure a clamping or clutching action which does not roughen the stock nor otherwise impair the gripping action between the locking element and the stock.

A still further object of the invention is to enable the quick adjustment of the movable jaw in either direction by the hand which grasps the handle or the stock of the wrench, thereby obviating the necessity of using the other hand of the operator to adjust the wrench. However, both hands may be employed to adjust the movable jaw whenever such method of adjustment is desired.

Another object of the invention is to insure the prompt locking of the movable jaw upon the stock when set to any position and to positively preclude any setting back of the jaw from the work after it has been pushed thereagainst.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the features of the invention.

In the drawings, Figure 1 is a side elevation of a wrench embodying the features of the present invention, the locking or clutch member being broken away to disclose the locking or clutching engagement between said member and the stock of the wrench. Fig. 2 is a front elevation of the wrench. Fig. 3 is a detail cross-sectional view on the line 3 3 of Fig. 1. Fig. 4 is a detail fragmentary view illustrating the locked and released positions of the clutch or locking member.

Like characters of reference indicate corresponding parts in each of the several views of the drawings.

The present wrench has any approved or conventional form of stock 10, which is preferably rectangular in cross-section and smooth throughout its four faces. One end of the stock is provided with a suitable handle 11, while its other end terminates in a fixed transverse jaw 12.

Slidably mounted upon the stock between the jaw 12 and the handle 11 there is the movable jaw 13, which is pierced from end to end by a rectangular passage 14, through which the stock is received. What will be termed the "forward" lower corner of the movable jaw is provided with an outwardly-inclined extension or heel 15, which is rounded or convexed upon its rear face which is directed toward the handle 11.

Located between the movable jaw 13 and the handle 11 is the clutch or locking element 16, which is preferably in the form of a cross-head pierced by a rectangular passage receiving the stock. The forward portion *a* of the front wall of this passage is obliquely disposed with respect to the stock and inclines away from the latter toward the fixed jaw 12. This obliquely-disposed wall portion extends for about two-thirds of the length of the passage, the remaining one-third (designated *b*) is disposed normally in substantial parallelism with the stock and preferably convexed. The rear wall portions of the passage are disposed reversely to those of the front wall—that is to say, the rear back wall portion *c* is disposed obliquely to the stock in substantial parallelism with the inclined front wall portion *a*, while the front portion *d* of the back wall is slightly convexed or in substantial

parallelism with the stock. The space between the planes of the faces *b* and *d* exceeds the width of the stock, so as to insure the free sliding of the element 16 upon the stock. The element 18 is separate from the slidable jaw except for the yieldable connection therebetween afforded by a helical spring 25, which enters a recess 22, formed in the jaw, with the outer end of the spring hooked around a pin 23, which pierces the jaw. The other end of the spring enters an opening 24 in the clutch or locking member 16 and is held therein by a wedge or key 26. The forward end of the clutch member is reduced upon its forward side and formed into a rounded toe portion 30 to bear against and rock upon the heel 15 of the movable jaw as a fulcrum-bearing. Interposed between the back of the stock and the back wall of the passage through the clutch member is a shoe 19, having a straight flat front face projecting at opposite sides of the clutch member so as to have a relatively long bearing against the stock. This shoe is provided with terminal rearwardly-directed shoulders 20 and 21, defining a seat receiving the rear portion of the clutch member, the back of the seat normally bearing against the back of the wall portion *d* of the passage through the clutch member.

In practice the movable jaw is normally locked, in which condition the clutch 18 is substantially at right angles to the stock 10, and whatever rearward pressure is applied to the jaw 13, as when turning a nut or the like, such rearward pressure will be transferred to the forward end of the clutch member 18 through the medium of the heel 15, riding upon the toe 30, whereupon the forward portion of the clutch will be swung rearwardly upon the rocking or fulcrum engagement between the stock and the wall portion *d* of the clutch. This rocking movement of the clutch member swings its rear end forwardly, thereby drawing the shoe 19 inwardly into frictional engagement with the back of the stock, thus gripping the latter between the wall portion *b* of the clutch and the relatively long face of the shoe 19, which snugly grips the clutch upon the stock. As the clutch member is fixed upon the stock and forms an abutment against which the toe 15 of the movable jaw bears, said movable jaw will be held against rearward movement upon the stock. The tendency of the spring 24 is to draw the clutch member toward the movable jaw upon the heel portion 15 as a fulcrum, whereby the movable jaw is always locked against movement away from the fixed jaw.

To release the movable jaw and move the same away from the fixed jaw, pressure is applied upon the rear end portion of the clutch member in a direction away from the fixed jaw, whereby the clutch member is rocked upon its toe 30 as a fulcrum from the full-line position in Figs. 1 and 4 to the dotted position in Fig. 4, whereby the oblique wall portions *a* and *c* of the opening through the clutch member 18 approach parallel relations with respect to the stock 10, the wall portions *b* and *d* thereby moving away from the stock which loosens the shoe 19, further pressure of course sliding the clutch and the movable jaw away from the fixed jaw. Immediately upon relieving pressure from the clutch the latter is snapped back into its locked position by the tension of the spring 25, and the movable jaw will thereby be locked without any setting back thereof from the work or the position to which the jaw has been set. To move the slidable jaw toward the fixed jaw, it is merely necessary to push forwardly upon any portion of the jaw—say, for instance, by engaging a thumb and a finger with the seats or recesses 28 and 29, formed in the opposite sides of the movable jaw. The recesses 28 29 are formed with curved sides and extend entirely through the side portions of the movable jaw, thus exposing portions of the side faces of the stock 10, so that when the thumb and finger of the operator enter the recesses they bear not only against the inclined walls of the recesses, but may also be pressed against the sides of the stock, and thus materially assist in holding the movable jaw at any desired point upon the stock while the wrench is being adjusted. This is an important advantage and materially increases the value and utility of the implement. The movable jaw can thus be readily moved toward the fixed jaw by reason of the fact that the clutch tends to trail from the slidable jaw when the latter is being moved forwardly.

From the foregoing explanation it will be apparent that with the handle of the wrench held in the hand in the usual manner the movable jaw may be quickly moved away from the fixed jaw by placing the thumb upon the rear end portion of the clutch member 16 and drawing the same toward the hand, while the movable jaw may be moved toward the fixed jaw merely by pressing the fore finger against the toe portion of the clutch member without removing the hand from the handle of the wrench.

Among the several features of the present invention it will be noted that the walls of the passage through the clutch member 16 do not bite into or otherwise roughen the stock 10, while the shoe 19 has a long flat bearing against the stock to avoid biting into the same and to insure a prompt clutching of the stock by the clutch member without any slipping or setting back of the latter. The clutch member is constructed in one single piece and preferably of steel, and is therefore very strong and durable, and being entirely outside of the movable jaw may be

readily replaced and at small expense when worn or broken.

Having thus described the invention, what is claimed is—

A wrench comprising a stock, a jaw fixed to said stock, a jaw slidably mounted upon said stock and having a heel located below its work-engaging edge, a clutch slidably mounted upon said stock, said clutch having a toe which engages the heel of the slidable jaw, a spring attached at its end to said clutch and said slidable jaw, a seat arranged to slide against the edge of the stock and having laterally-extending shoulders which embrace the edges of said clutch.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES B. M. WINBURN.

Witnesses:

ANDREW THOMPSON,

HOWELL SMITH.