Aug. 25, 1959 W. B. BURNETTE 2,900,857

DOUBLE ENDED WRENCH WITH ADJUSTABLE SOCKETS

Filed March 3, 1958

2 Sheets-Sheet 1

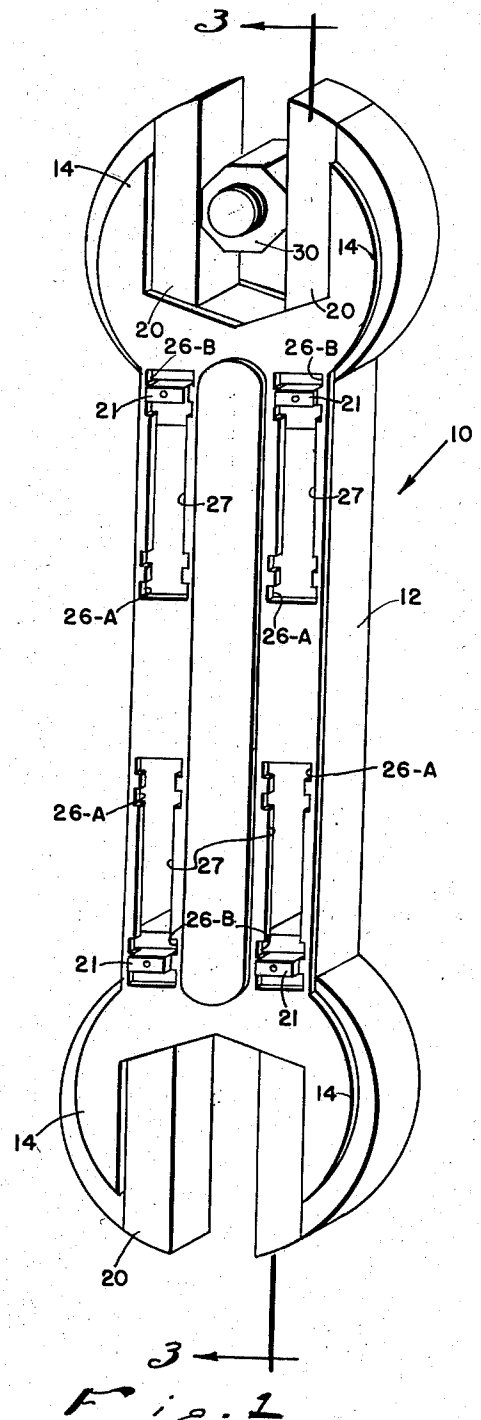
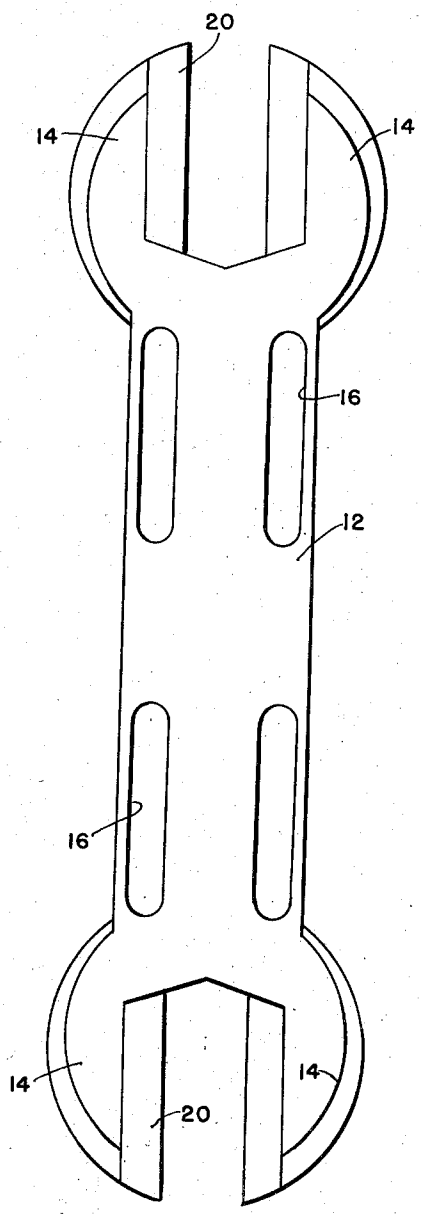



Fig. 1

Fig. 2




INVENTOR.
WAYNE B. BURNETTE
Wayne B. Burnette

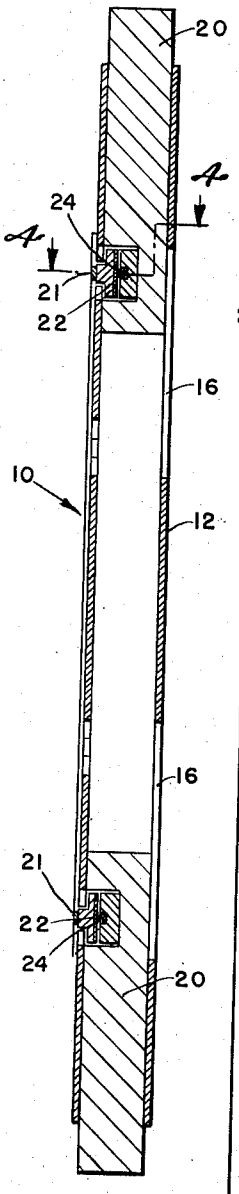
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Fig. 3



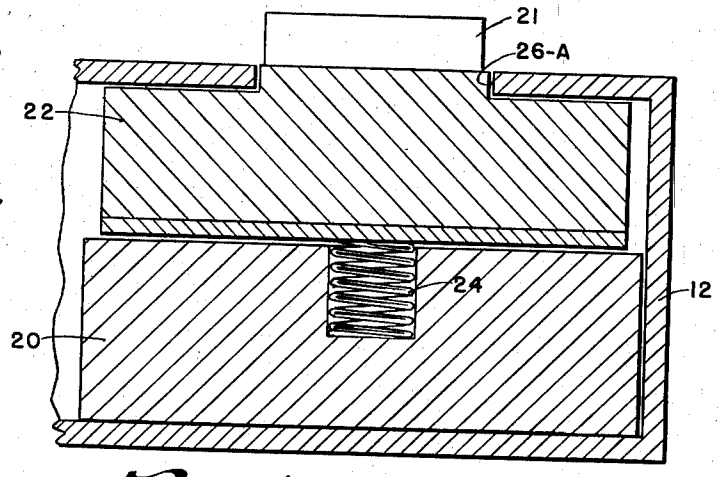




Fig. 4

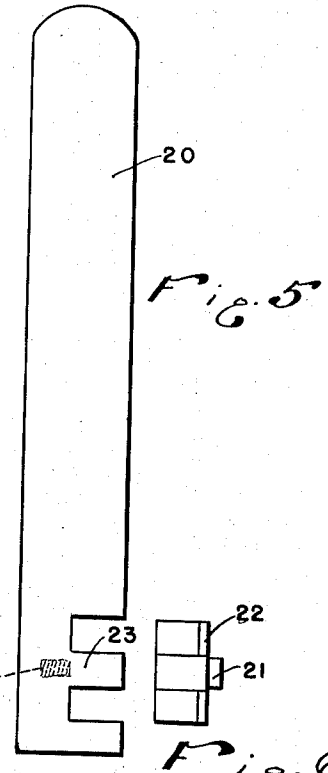



Fig. 5

Fig. 6

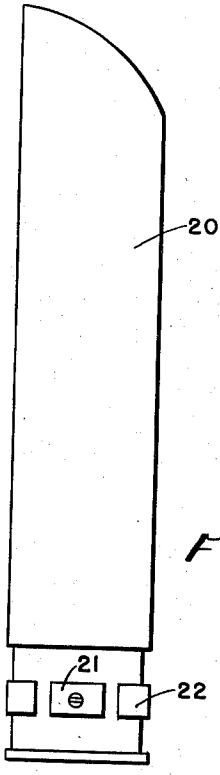



Fig. 7

INVENTOR.
WAYNE B. BURNETTE
Wayne B. Burnette

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2,900,857

# DOUBLE ENDED WRENCH WITH ADJUSTABLE SOCKETS

Wayne B. Burnette, Gladys, Va.

Application March 3, 1958, Serial No. 718,797

3 Claims. (Cl. 81—185)

This invention relates to hand tools and more particularly to a wrench.

It is an object of the present invention to provide a wrench having a plurality of selective settings for accommodating up to eight different size nuts or bolts, in which the jaws in all settings are secured against relative movement.

Another object of the present invention is to provide a wrench in which there is no provision for lateral movement of the jaws with respect to each other, whereby the engagement with the nut or bolt is positive and unyielding.

Still another object of the present invention is to provide a wrench of the above type in which there is absolutely no slippage between the opposite sides of the jaws, each of the jaw elements being secured in the designated position for positive engagement with the respective nut or bolt.

Other objects of the invention are to provide a wrench bearing the above objects in mind which is of simple construction, has a minimum number of parts, is inexpensive to manufacture and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in conjunction with the accompanying drawing, in which:

Figure 1 is a perspective view of a wrench made in accordance with the present invention in operative use;

Figure 2 is a bottom plan view of the wrench shown in Figure 1;

Figure 3 is a longitudinal cross sectional view taken along line 3—3 of Figure 1;

Figure 4 is an enlarged transverse cross sectional view taken on line 4—4 of Figure 3 of certain parts of the apparatus shown in Figure 1;

Figure 5 is a side elevational view of a spacer element forming a part of the present invention;

Figure 6 is a side elevational view of a detent member forming another part of the present invention; and

Figure 7 is a top plan view of the spacer element shown in Figure 5.

Referring now more in detail to the drawing, a tool **10** made in accordance with the present invention is shown to include a hollow casing **12** having a central main body portion and a pair of fixed jaw guides **14** at each opposite end. The bottom side of the casing **12** is provided with a plurality of elongated slots **16** for facilitating the cleaning of the tool and removal of foreign matter from the interior thereof that might otherwise interfere with the proper operation of the parts.

The actual nut or bolt engaging jaws of this tool are defined by independently movable spacer elements **20** that are slidably supported within the casing **12** for longitudinal movement. A pair of such spacer elements **20** are slidably supported at each end of the casing for independent longitudinal movement.

As is more clearly shown in Figures 3 to 7 of the drawings, each such spacer element includes upwardly extending detents **22** that are slidably received within longitudinally extending slots **27** in the top of the casing. These detents **22** are engageable with indents **26***a*, *b* at opposite ends of the slots **27** for locking the respective spacer element against longitudinal movement. Small compression springs **24** normally urge the detents **22** upwardly toward locking engagement with the respective indents **26***a*, *b* for selectively securing the spacer elements **20** in the normally retracted position and an extended position, respectively. Buttons **21** extending upwardly from the central portion of the detents provide means for manually releasing the spacer elements for movement from one position to another.



In actual use, one or more of the spacer elements **20** may be slidably extended into an operative position by depressing the button **21** to release the detent **22** from engagement with the inner indent **26***a*, whereby the spacer element may be moved outwardly toward the extended position, following which pressure upon the button **21** is released so that the detent will engage the outermost indent **26***b* to lock it in place. The number of spacer elements so moved depends upon the size of the polygonal nut or bolt **30** with which the tool is to be used. In certain cases, both of the spacer elements will be retained in the retracted position, in other cases both of the spacer elements will be moved to the extended position, and in still other cases, only one such spacer element at each side will be extended. In any event, it will be noted that there is no provision for relative lateral movement between the spacer elements, whereby they cannot yield during extreme torque pressures exerted on the nut or bolt. This prevents slippage which not only damages the respective nut or bolt, but also can scrape or injure the hand or knuckle of the operator. Actually, a sufficient number of size adjustments is possible with this construction to accommodate any standard size nut or bolt. However, it is also possible to provide tools of this type in three or four different ranges of sizes, such as for extremely small nuts and bolts, medium size nuts and bolts, or for extra large nuts and bolts, depending upon the type and character of use to which the tool is ordinarily put.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

What I claim as new and desire to protect by Letters Patent of the United States is:

1. A wrench comprising, in combination, a one piece hollow casing having a central body portion and integral jaws at each end having parallel sides conformable to a polygonal nut, a plurality of independently movable spacer elements slidably supported within said central body portion for longitudinal movement, said spacer elements capable of being moved longitudinally of said hollow casing to extend into said jaws to affect the spacing therebetween, each of said spacer elements having a detent assembled adjacent the upper side thereof, spring means inserted between each of said spacer elements and adjacent detents to normally urge the detents upwardly into locking engagement with longitudinally extending slots arranged in the upper walls of said central body portion, each of said detents releasably locking the spacer element assembled therewith in one of said openings for use within the jaws, and in another opening for non-use within the hollow casing.

2. A wrench comprising, in combination, a one piece hollow casing having a central body portion and integral jaws at each end having parallel sides conformable to a polygonal nut, a plurality of independently movable spacer elements slidably supported within said central body portion for longitudinal movement, said spacer ele-

ments being capable of being moved longitudinally of said hollow casing to extend into said jaws to effect the spacing therebetween, all of said spacer elements being selectively movable within said casing between an inwardly retracted storage position and an outwardly extended operative position, each of said spacer elements having a detent means assembled adjacent the upper side thereof, said detent means comprising retractable stops carried by the inner end of each one of said spacer elements, spring means inserted between each of said spacer elements and adjacent detents to normally urge the detents upwardly into locking engagement with longitudinally extending slots arranged in the upper walls of said central body portion, each of said detents releasably locking the spacer element assembled therewith in one of said openings for use within the jaws, and in another opening for non-use within the hollow casing, wherein the top side of said casing defines laterally spaced apart and longitudinally extending slots for slidably receiving said detents, and a restricted indent at each end of each of said slots for releasably and lockingly receiving said detents to secure said spacer elements in an adjusted position.



3. The combination according to claim 2, further comprising clean out holes in the bottom side of the casing, said holes being located directly below the longitudinally extending slots arranged in the upper wall of said casing and being of substantially the same size as said slots.

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