Jan. 29, 1924. 1,482,075

W. H. FISHER

SOCKET WRENCH

Filed April 18, 1922

Fig. 1.

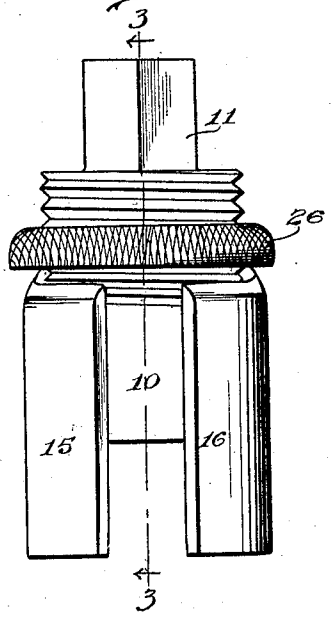


Fig. 2.

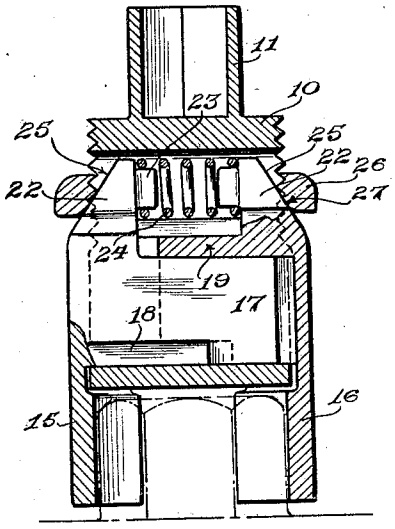


Fig. 3.

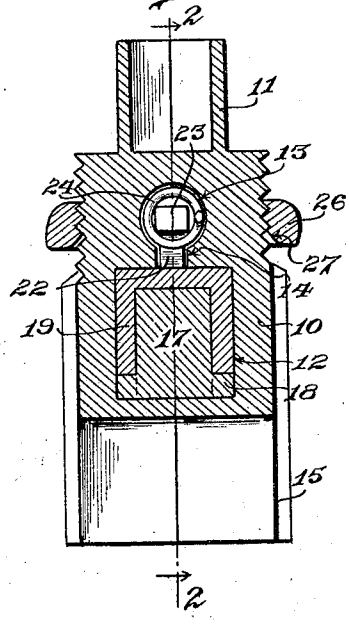
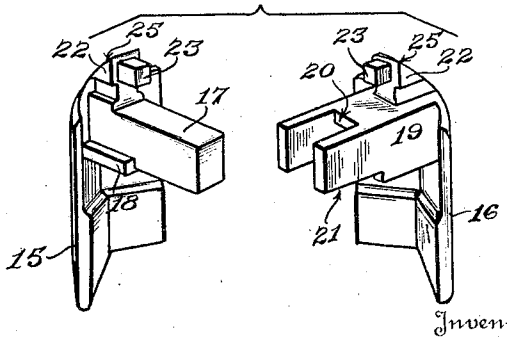


Fig. 4.



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By

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UNITED STATES PATENT OFFICE.

WILLIAM H. FISHER, OF ALTOONA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO ANDREW S. FISHER, OF ALTOONA, PENNSYLVANIA.

SOCKET WRENCH.

Application filed April 18, 1922. Serial No. 554,708.

To all whom it may concern:

Be it known that I, WILLIAM H. FISHER, a citizen of the United States, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented certain new and useful Improvements in Socket Wrenches, of which the following is a specification.

This invention relates to an improved wrench and seeks, as one of its principal objects, to provide a device of this character adapted for a wide range of use and wherein different sets of jaws may be employed in connection with the core of the wrench, thus enhancing the adaptability of the wrench.

A further object of the invention is to provide a device wherein the jaws may be readily adjusted and locked in adjusted position.

The invention has as a still further object to provide a device wherein the adjusting means for the jaws will also provide a locking means therefor adapted to automatically lock the jaws in adjusted position.

And the invention has as a still further object to provide a device which will be characterized by structural ruggedness and simplicity to the end that the wrench may prove entirely efficient and satisfactory in practical use

Other and incidental objects will appear hereinafter

In the drawing:

Figure 1 is a side elevation of the wrench;

Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 3, looking in the direction of the arrows;

Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 1, looking in the direction of the arrows; and

Fig. 4 is a perspective view showing the jaws of the wrench in detail.

In carrying the invention into effect, I employ a cylindrical core or stock 10 provided at its upper end with an upstanding squared boss 11 which is hollow so that a wrench or other tool may be inserted into the boss or may be engaged with the boss externally. Formed through the stock is a square diametric opening 12 above which is a transverse cylindrical opening 13 lying parallel to the opening 12 and connecting said openings is a slot 14. Overlying the lower end portion of the stock to project therebeneath are companion jaws which, for convenience, have been indicated at 15 and 16 respectively. These jaws are provided with angular inner faces for engagement with a nut or with the work and projecting laterally from the upper end of the jaw 15 is a squared guide member 17 provided at its base with longitudinally directed shoulders 18 extending from the side faces of the member flush with the lower side thereof. The jaw 16 is formed at its upper end with a mating channel-shaped guide member 19 which is open at its lower side and is adapted to slidably receive the guide member 17 therein. At its upper side the guide member 19 is provided with a notch 20 while the outer ends of the sides of said guide member are cut away at their lower edges, as indicated at 21, to ride over the shoulders 18 of the guide member 17. As shown in Fig. 2, the mating guide members 17 and 19 are snugly but slidably received in the opening 12 of the stock 10 so that the walls of said opening will coact with said guide members for locking the jaws 15 and 16 against rotation extending longitudinally of the stock while the sides of the guide member 19 will coact with the shoulders 18 of the guide member 17 and said guide members, in turn, coact with the top and bottom walls of said opening for sustaining the jaws against canting spreading movement at their free ends. Upstanding from the base ends of the guide members at their upper sides, are triangular shaped tail lugs 22 grooved at opposite sides thereof to project freely through the slot 14 in the stock into the opening 13 therein, it being observed that the lug upon the guide member 17 is received in the notch 20 of the guide member 19. Formed on the confronting faces of said lugs are centering studs 23 and freely fitting in the opening 13 of the stock to bear between the lugs is a spring 24 engaged at its ends over said studs and tending to separate the jaws. At their outer sides, the lugs 22 are, as most clearly shown in Figure 2, provided with inclined faces 25 and threaded upon the upper end portion of the stock to coact with said lugs is a nut 26 the lower inner corner of which is cut away to provide a beveled face 27 seating flat against the beveled faces 25 of the lugs, it being observed in this

connection, that the upper end edges of the jaws 15 and 16 are beveled so as not to interfere with downward adjustment of the nut.

As will now be readily understood in view of the preceding description, the spring 34 normally holds the lugs 22 in engagement with the nut 26 so that when the nut is turned in one direction, the spring will act to spread the jaws while, by rotating the nut in the opposite direction, the jaws may be adjusted toward each other. Adjustment of the jaws may thus be readily effected and by providing several sets of jaws of different sizes and shapes in connection with the stock 10, the range of use of the wrench may be greatly augmented. In this connection, it is to be noted that while I have described the device as a wrench, still the device may also be employed as a chuck for use in connection with lathes or the like, and such adaptations of the invention are accordingly contemplated herein.

Having thus described the invention, what is claimed as new is:

1. A device of the character described including a stock having an opening therethrough, coacting jaws adjustable upon the stock and having slidably mating guide members fitting in said opening coacting with each other, the guide member of one of said jaws being squared and provided with longitudinal shoulders and the guide member of the other of said jaws being channel-shaped to slidably fit the first guide member coacting with said shoulders, and means upon the stock for adjusting the jaws.

2. A device of the character described including a stock having a squared opening therethrough and provided in spaced relation to said opening with a second opening joined with the first opening by a connecting slot, coacting jaws adjustable upon the stock and provided with mating guide members fitting in the first opening of the stock, lugs upstanding from said guide members to project through said slot into the second mentioned opening of the stock, a spring bearing between said lugs tending to separate the jaws, the lugs being formed with inclined faces, and a nut adjustable upon the stock to coact with said inclined faces of the lugs for shifting the jaws toward each other.

3. A device of the character described including a stock, companion jaws carried thereby and provided with mating guide members one slidably fitting into the other and both coacting with the stock connecting the jaws thereto, and means upon the stock for shifting the jaws toward each other.

4. A device of the class described including a stock having an opening therethrough, companion jaws carried by the stock and provided with mating guide members fitting in said opening slidably connecting the jaws with the stock, one of said guide members being squared and the other of said members being channel-shaped to embrace said first-mentioned member, and means upon the stock for adjusting the jaws.

5. A device of the class described including a stock, coacting jaws adjustable thereon and provided with mating laterally-directed guide members slidably connecting the jaws with the stock, lugs upstanding from the jaws, the stock being provided with an opening, a spring disposed in said opening bearing between said lugs tending to separate the jaws, and means adjustable upon the stock for shifting the jaws toward each other.

In testimony whereof I affix my signature.

WILLIAM H. FISHER. [L.S.]