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J. O. JOHNSON

1,808,660

SOCKET WRENCH

Filed May 21, 1929

Fig. 1.

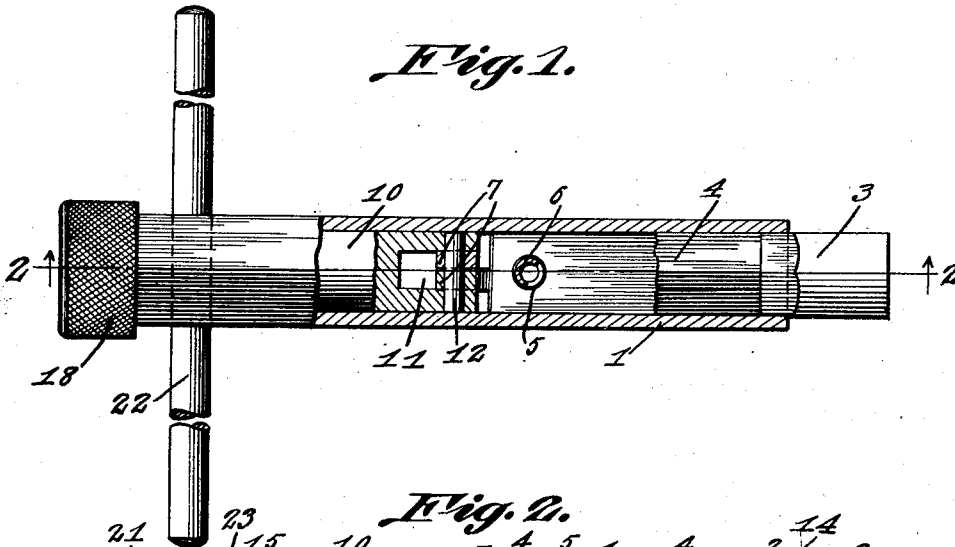


Fig. 2.

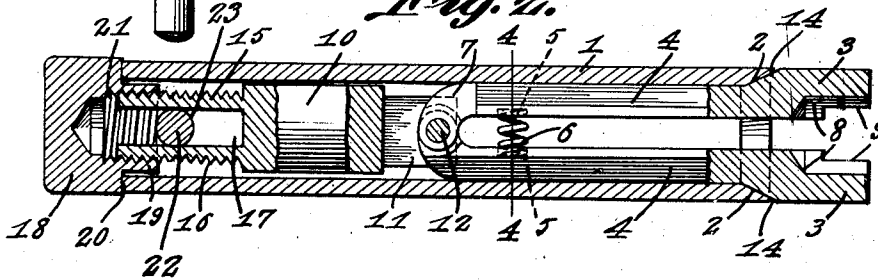


Fig. 3.

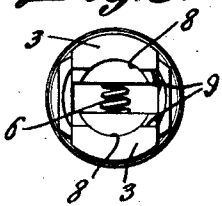
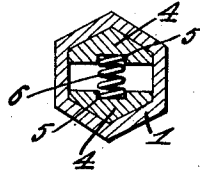


Fig. 4.



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SOCKET WRENCH

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This invention aims to provide a socket wrench which will hold articles of various kinds securely, it being possible to adjust the socket wrench to the size of the article, the grip of the jaws being enhanced as the twisted pressure of the jaws increase.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that a mechanic, working within the scope of what is claimed, may make such changes in the precise embodiment of the invention herein disclosed as his skill may suggest, without departing from the spirit of the invention.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

In the accompanying drawings:

Figure 1 shows in side elevation a wrench constructed in accordance with the invention, parts being broken away;

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is an end elevation; and

Figure 4 is a cross section on the line 4—4 of Figure 2.

The wrench forming the subject matter of this application includes a barrel 1, preferably of hexagonal cross section, and having a beveled mouth 2 at its forward end. The numeral 3 designates jaws, which are provided with rearwardly extended shanks 4 that are prolonged back into the barrel 1. The shanks 4 may be ribbed to correspond with the cross-section of the barrel, as shown in Figure 4. Intermediate their forward ends, the shanks 4 have seats 5 on their inner sides, the ends of an expansion spring 6 being mounted in the seats 5. At their inner ends, the shanks 4 of the jaws 3 have overlapping thinned fingers 7. The jaws 3 may have recesses, as at 8 in Figure 3, to receive round pieces, and they may be cut away, as at 9, to receive pieces which are not circular in cross section. In general, the jaws 3 may

be made as desired, depending upon the work in hand.

A slide 10, in the form of a block, is mounted for reciprocation in the barrel 1. The forward end of the slide 10 is reduced and is provided with a recess 11. The overlapping fingers 7 of the shanks 4 of the jaws 3 extend into the recess 11 of the slide. A pivot element 12 extends across the recess 11 and is mounted at its ends in the slide, as Figure 1 will show. The pivot element 12 passes through the fingers 7, and thus the jaws 3 are mounted for swinging movement on the slide 10. The jaws 3 have inclined portions 14 which cooperate with the inclined mouth 2 of the barrel 1. The slide 10 is provided at its rear end with a reduced extension 15 which is externally threaded, as shown at 16. The extension 15 of the slide 10 is provided with an elongated slot 17 which passes through the rear end of the extension 15.

The numeral 18 designates a foot having a reduced part 19 defining a shoulder 20 adapted to cooperate with the rear end of the barrel 1. The part 19 of the foot 18 has an internal chamber 21 into which the extension 15 of the slide 10 is threaded.

A removable handle 22, in the form of a bar, is provided. The bar or handle 22 passes through the slot 17 in the extension 15 of the slide 10 and is received in openings 23 in the barrel 1, the openings 23 being of approximately the same size as the cross section of the handle 22.

In practical operation, the foot 18 may be rotated, the slide 10 moving lengthwise of the barrel 1, because the extension 15 of the slide is threaded into the chamber 21 of the foot 18. When the slide 10 is moved lengthwise of the barrel 1, the jaws 3 will be moved in or out, the inclined parts 14 of the jaws cooperating with the inclined parts 2 of the barrel 1, to close the jaws together, as the jaws are drawn inwardly, and to permit the jaws to open as the jaws are carried downwardly, the jaws being spaced apart by the action of the spring 6, the shanks 4 of the jaws swinging on the pivot element 12 which is carried by the forward end portion of the slide. Owing to the fact that the slide 10

has an elongated slot 17, the slide can be moved lengthwise of the barrel, and independently of the handle 22. The handle 22, however, prevents the slide 10 from rotating, and, consequently, the slide will be advanced or retracted when rotation is imparted to the foot 18, as has been hereinbefore set forth. The general construction of the wrench is such that it will withstand hard use. The greater twist that is put upon the wrench, the more strongly will the jaws grip the object.

Having thus described the invention, what is claimed is:

1. In a wrench, a barrel made in one piece from its forward end to its rear end, the barrel having an internal beveled mouth at its forward end, the barrel being of polygonal cross section externally and being of a common cross section externally from end to end, the barrel being of polygonal cross section internally and being of a common cross section internally from end to end, excepting the mouth, a foot bearing directly against the rear end of the said one-piece barrel, a slide mounted to reciprocate in the barrel and having threaded connection with the foot, jaws having shanks pivoted to the slide, the shanks being so shaped in cross section as to correspond with the internal polygonal cross section of said barrel, said jaws bearing directly against the forward end of the said one-piece barrel, the jaws being inclined to fit in the beveled mouth of the barrel and having cooperating work-receiving recesses on their inner surfaces, the jaws being of such length that the recesses will be disposed externally of the barrel when the jaws are in parallelism, the points of engagement between the jaws and the forward end of the said one-piece barrel being close to the rear ends of the recesses.

2. In a wrench, a barrel made in one piece from its forward end to its rear end, the barrel having an internal beveled mouth at its forward end, the barrel being of polygonal cross section externally, and being of a common cross section externally from end to end, the barrel being of polygonal cross section internally, and being of a common cross section internally from end to end, excepting the mouth, a foot bearing directly against the rear end of said one-piece barrel, a slide mounted to reciprocate in the barrel and having threaded connection with the foot, the slide being so shaped in cross section as to correspond with the internal polygonal cross section of the barrel, jaws having shanks pivoted to the slide, the shanks being so shaped in cross section as to correspond to the internal polygonal cross section of said barrel, the jaws bearing directly against the forward end of the said one-piece barrel, the jaws being inclined to fit in the beveled mouth, and having cooperating work-receiving recesses on their inner sur-

faces, the jaws being of such length that the recesses will be disposed externally of the barrel when the jaws are in parallelism, the points of engagement between the jaws and the forward end of said one-piece barrel being close to the rear ends of the recesses.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

JAMES OSCOE JOHNSON.