

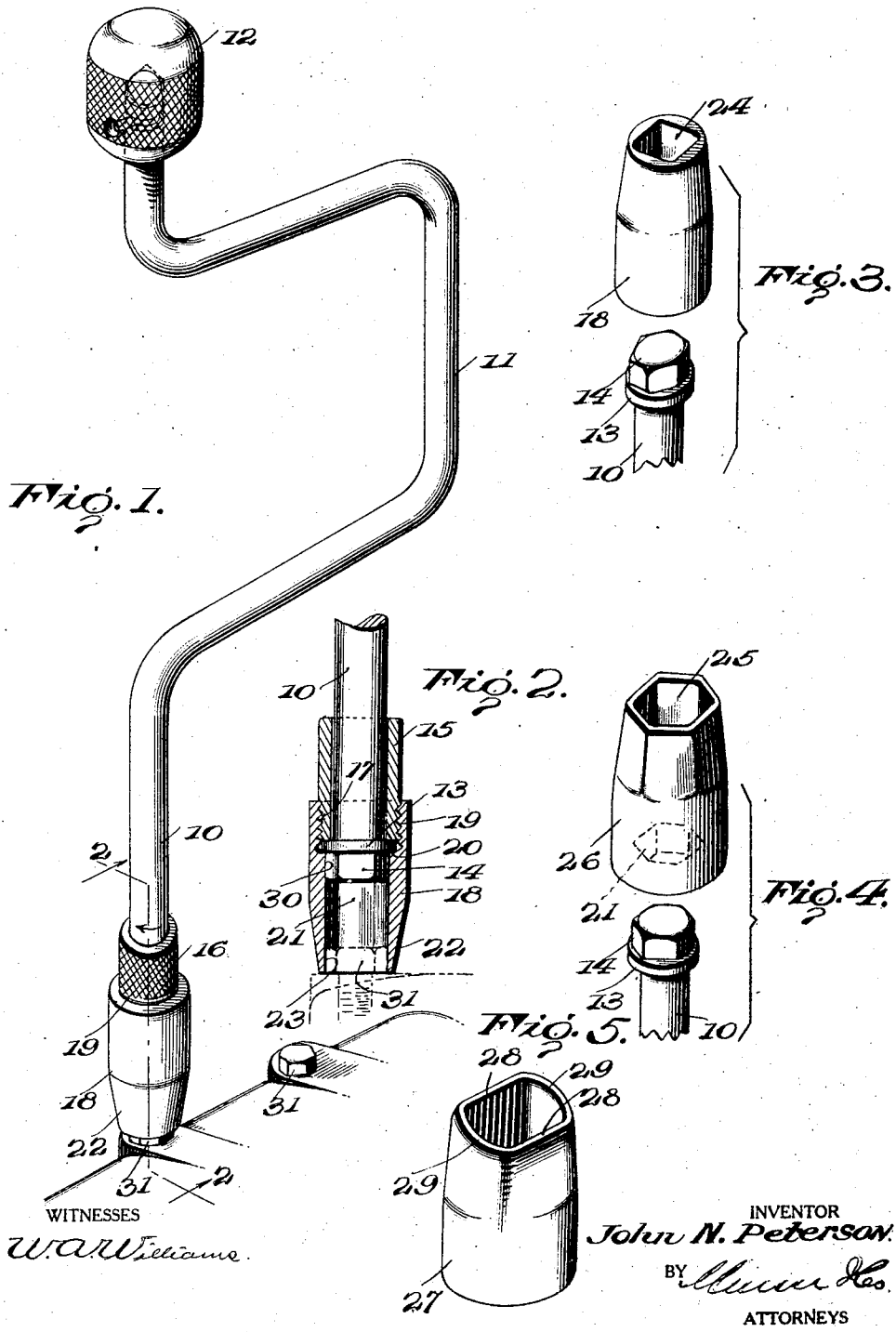
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SOCKET WRENCH

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SOCKET WRENCH.

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This invention relates to socket wrenches and has for its object the provision of a wrench in which any one of a plurality of sockets may be adjustably screwed, on the shank of the wrench, the sockets being adapted for use in speed wrenches, T-wrenches and offset wrenches.

Another object of the invention is the provision of a wrench in which a handle is provided with an integrally formed head and shoulder, the head being polygonally faced which is adapted to be received within a similarly formed socket of a tap, with the shoulder on the handle being engaged between a shoulder in the tap and one end of a sleeve threaded into the upper end of said tap, whereby the tap is rigidly locked against movement on the handle.

This invention will be best understood from a consideration of the following detailed description in view of the accompanying drawing forming a part of the specification; nevertheless it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications which shall define no material departure from the salient features of the invention as expressed in the appended claim.

In the drawings:—

Figure 1 is a view in perspective of a wrench constructed in accordance with the principles of my invention.

Figure 2 is a vertical section taken along the line 2—2 of Figure 1.

Figure 3 is a view in perspective of a square shaped socket of tap shown in detached relation with the end or shank of the operating handle.

Figure 4 is a view in perspective of a hexagonally shaped socket shown in detached relation with the end or shank of the operating handle.

Figure 5 is a view in perspective of another form of socket adapted to be employed in conjunction with my wrench.

Referring more particularly to the drawings, 10 designates the shank of an operating handle 11 which has the usual rotatably mounted knob 12. The lower end of the shank is provided with an annular shoulder 13 and below said shoulder is provided an hexagonally shaped head 14 which is of slightly larger diameter than the shank 10.

Slidably mounted on the shank 10 is a sleeve 15 having an externally knurled por-

tion 16 above the lower threaded end 17 of said sleeve. The extreme lower end of said sleeve is adapted to abut the upper edge of the annular shoulder 13.

Any one of the sockets shown in Figures 3, 4 and 5 may be applied to the lower end of the shank 10 and locked to said shank by means of the sleeve 15. Each of the taps or sockets 18 has an internally threaded portion 19 located above a shoulder 20 formed within the central passage 21 of the socket 18. The internally threaded portion 19 is of larger diameter than the central passage 21 and is adapted to be engaged by the threads 17 on the lower end of the sleeve 15. The outer face of the socket 18 as shown at 22, is sheared off at an angle to the vertical to provide a reduced lower open end of said socket. A portion of the socket indicated by the numeral 23 may be square shaped as shown at 24 in Figure 3 of the socket 18, or hexagonally shaped as shown at 25 of socket 26 disclosed in Figure 4. The socket as shown in Figure 5 and designated by the numeral 27 has two flat faces 28 and two curved faces 29 which may be useful in engaging the heads of bolts or nuts having a shape to neatly fit the outer end of the socket 27.

In all of the forms shown the internal construction by which the sockets are connected to the lower end of the shank 10 is identical with the structure shown in Figure 2 for the socket 18 so that a slidable sleeve with its threaded lower end 17 will engage the internal threads of any of the sockets to securely lock said sockets to the end of the shank.

In order to fasten the sockets to the shank 10 a sleeve 15 is removed sufficiently above the annular shoulder 13 in order that the socket 18 may be moved upwardly on the shank until said shoulder engages the shoulder 20 in the socket. The sleeve 15 is then lowered and revolved in the direction indicated by the arrow in Figure 1 so that the threads on the lower end of said sleeve will engage the internal threads of the socket until the extreme inner end of said sleeve is locked in engagement with the annular shoulder 13. The inner wall as shown at 30 has a hexagonal conformation to correspond to the hexagonal construction of the head 14 so that the head will positively be locked to the socket, so that when the handle 11 is rotated the socket will likewise be posi-

tively rotated for turning bolts 31 or nuts, as the case may be.

In order to remove the socket from the shank 10 it is only necessary to rotate sleeve 5 15 in a direction which is reverse to that indicated by the arrow in Figure 1 and when the threads of the sleeve 15 have become disengaged from the internal threads carried by the socket 18 or any of the other sockets 10 shown the socket will drop from the lower end of the shank.

What I claim is:—

15 A wrench comprising a shank, a socket having a passage therethrough and having one end of greater internal diameter than the

other and with the portion of greater internal diameter being threaded, the other portion having a plurality of flat faces and providing a shoulder between such portion and the portion having the diameter of 20 greater extent, said shank having a shoulder adapted to engage the shoulder in the socket and a portion beyond the shoulder having a plurality of flat faces adapted to engage the 25 flat faces in the socket, a nut received by the shank and having an internally threaded portion engaging the internal threads of the socket.

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