

UNITED STATES PATENT OFFICE.

ROBERT FREDRICK THOMSON AND GEORGE DESPOND, OF TORONTO,
CANADA.

WRENCH.

No. 796,371.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, ROBERT FREDRICK THOMSON and GEORGE DESPOND, subjects of the King of Great Britain, residing at Toronto, in the county of York, Province of Ontario, Canada, have invented certain new and useful Improvements in Wrenches; and we do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in wrenches of the class wherein a plurality of nut-engaging sockets are provided; and it consists in certain features of novelty in the construction, operation, and arrangement thereof, all as hereinafter more fully described, and specifically pointed out in the claims.

The object of the invention is to produce a device of the character described which will include a plurality of sockets, one of which is of fixed size and contour and other sockets which may be made of any convenient size within the limits of the wrench, some of said sockets being adapted for relatively large nuts and other of said sockets being especially adapted for use upon other nuts of a much smaller size.

A further object of the invention is to produce the chief component parts thereof of cast metal of as few parts as possible to accomplish the desired result.

Referring to the annexed drawings, in which similar numerals of reference indicate corresponding parts in all the figures, Figure 1 is a plan view of the wrench shown partly in section. Fig. 2 is a broken view illustrating in plan the opposite face of the wrench from that shown in Fig. 1. Fig. 3 is a side elevational view of the wrench partly broken away for convenience of illustration. Fig. 4 is a broken sectional view taken on line 4 4 of Fig. 1. Fig. 5 is a perspective view illustrating a portion of the shank with the head attached thereto. Fig. 6 is a perspective view illustrating the slidable clip and slidable jaw integral therewith, which member is adapted to slide longitudinally of the wrench-shank; and Fig. 7 is a transverse sectional view taken on line 7 7 of Fig. 1 looking in the direction indicated by the arrow.

Referring to the parts, 1 is a shank provided with the usual handle 2 or not, as may

be desired, which handle may be secured upon the screw-threaded end 3 of the shank by means of the nut 4 and washer 5. The shank 1 is provided with serrations or teeth 6, which extend transversely of said shank, as best shown in Figs. 1 and 4. The end of the shank opposite the handle terminates in a head 7, which head is provided at one side (which for convenience will be called the "lower" side) with a fixed jaw 8, which is substantially rectangular in form, as shown in Fig. 2, said jaw from its apex 9 being outwardly beveled and terminating in the faces 10, which extend transversely of the longitudinal axis of said shank 1. The opposite or upper side of the wrench is provided with a fixed socket 11, comprising the upward extension of the fixed jaw 8 and the side and end wall 12, so that a non-adjustable wrench is provided upon one—that is, the upper—face of the shank 1. As will be noted in Fig. 5, guides 13 are provided on the head 7, which guides extend parallel to the longitudinal axis of the shank 1 and preferably at both sides thereof, channels 14 being provided between the guides 13 and the shank 1 for the purpose hereinafter described.

Slidable upon the shank 1 is a clip 15, which, like the shank 1, with its appurtenant parts comprises a single unitary casting having the vertical (as shown) arms 16, top plate 17, which is provided with the orifice 18, supporting-ears 19, which are provided with the pintle-bearings 20, bottom plate 21, which terminates in the angular jaw 22, faces 23, which are parallel with the faces 10, before referred to, and longitudinally-extended guides 24, as best shown in Fig. 6.

Supported between the ears 19 is a pawl 25, pivoted at 26 and provided with the downwardly-projecting stud 27, which serves as a spring-seat for the coil-spring 28, which is adapted to bear upon the cap-plate 17 of such clip, thereby forcing the opposite end 29 of such pawl normally into engagement with the ratchet-teeth 6, formed on said shank 1, so that the slidable jaw carried by said clip may be locked in any predetermined position by means of the said pawl and ratchet.

In uniting the several parts of our improved wrench it is evident that the guides 24 should be brought into coincidence with the channels 14 and ride in such channels for the purpose of preventing torsional disturbance of such slidable jaw, after which the handle 2

may be secured in position, if desired, to prevent said slidable clip being accidentally removed from the shank. With the pawl and ratchet cooperating and the pawl being connected with said slidable jaw and clip it is evident that a fixed wrench is provided at one side of the tool thus provided. Upon the opposite side of such tool a wrench with a slidable jaw is formed, which is capable of taking in a relatively large nut, the size of such nut being determined by the size of the tool, and between the faces 10 and 23 is formed an opening in which a nut, as 30, may be held, as shown in Fig. 3, and the faces 10 and 23 may be brought into such close proximity that nuts of a very small size may be controlled thereby when the slidable jaw is set in the proper position. Thus a wrench is provided in a single structure which is capable of being used as a fixed socket of relatively large size, an adjustable socket of relatively large size, and a plurality of adjustable sockets which may be adjusted to fit very small nuts.

While we have shown in the accompanying drawings the preferred form of our invention, it will be understood that we do not limit ourselves to the precise form shown, for many of the details may be changed in form or position without affecting the operativeness or utility of our invention, and we therefore reserve the right to make all such modifications as are included within the scope of the following claims or of mechanical equivalents to the structures set forth.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a wrench of the class described, the combination of a stock or handle-bar comprising a shank, fixed members forming a fixed socket on one side of said handle-bar, and a fixed angular jaw on the opposite side of same both extending beyond the plane of the shank, a slidable member upon the shank of said handle-bar, a fixed angular jaw upon said slidable member adapted to cooperate with the fixed angular jaw upon the said handle-bar, and spring-actuated means for holding the said slidable member in position.

2. In a wrench of the class described, the combination of a stock or handle-bar compris-

ing a shank, fixed members forming a fixed socket on one side of said handle-bar, and a fixed angular jaw on the opposite side of same both extending beyond the planes of the shank, the said handle-bar being provided with guide-channels arranged longitudinally thereof in juxtaposition to the said fixed jaw, a fixed angular jaw upon said slidable member adapted to cooperate with the fixed angular jaw upon the said handle-bar, longitudinally-arranged offset guides upon the said slidable member, adapted to cooperate with the said guide-channels, and spring-actuated means for holding the said slidable member in position.

3. In a wrench the combination comprising a shank, a head thereon composed of beveled end walls and side walls integral therewith, extending beyond the planes of the shank and forming a socket on one side of the shank, in which walls are provided longitudinal channels, a slidable member on the shank, offset guides formed on the slidable member and working in said channels, serrations on said shank, a pawl pivoted on said slidable member, a stud on said pawl, and a coiled spring seated around said stud and constructed to keep said pawl in engagement with said serrations.

4. In a wrench the combination of a shank, a head thereon extending beyond the shank on either side, side walls integral with the shank and said head and provided with channels therein, a slidable jaw disposed on the shank and comprising a top plate, provided with an orifice, vertical arms and a bottom plate, formed with longitudinal, offset guides working in the said channels, a pawl pivoted intermediate of its ends, and disposed on said top plate adjacent said orifice, a stud on one end of said pawl integral therewith, and a coiled spring around said stud, adapted to keep said pawl normally in engagement with serrations formed on said shank.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

ROBERT FREDRICK THOMSON.
GEORGE DESPOND.

Witnesses:

CHARLES WISE, Sr.,
ARTHUR WOODLEY.