

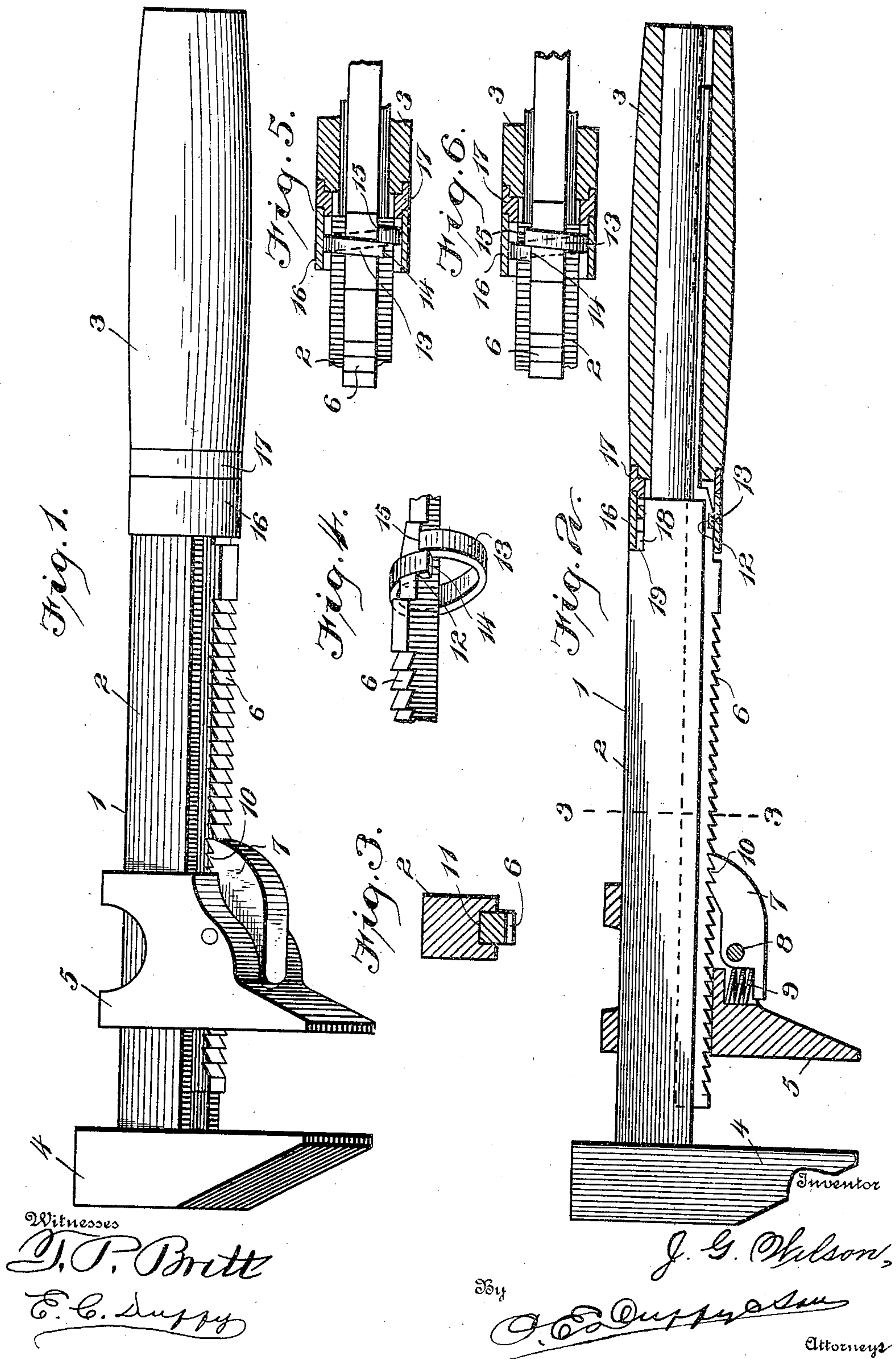
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PATENTED MAR. 27, 1906.

J. G. WILSON.

WRENCH.

APPLICATION FILED JULY 11, 1905.



UNITED STATES PATENT OFFICE.

JOSEPH GOULD WILSON, OF NEOSHO FALLS, KANSAS.

WRENCH.

No. 816,203.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH GOULD WILSON, a citizen of the United States, residing at Neosho Falls, in the county of Woodson and State of Kansas, have invented certain new and useful Improvements in Wrenches; and I do declare the following to be 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to wrenches, and has for its object to provide a device of this class wherein the movable jaw is adjusted on a rack, which rack is also capable of being moved in order to effect a neat adjustment of the wrench on the nut or other object to be engaged by the wrench.

With this object in view my invention consists in the novel construction of the means for moving the rack; and my invention also consists in certain combinations of parts, which will be first fully described, and afterward specifically pointed out in the appended claim.

Referring to the accompanying drawings, Figure 1 is a perspective view of the wrench. Fig. 2 is a vertical longitudinal section through the same. Fig. 3 is a horizontal section taken on line 3-3 of Fig. 2. Fig. 4 is a fragmentary perspective view of the lower portion of the rack and the rack-moving ring. Fig. 5 is an elevation, partly in section, of the lower portion of the rack, showing portion of handle in section, rack-moving ring in elevation, and outer band of rack-moving ring in section. Fig. 6 is a similar view showing rack-moving ring in different position.

Like numerals of reference indicate the same parts throughout the several figures, in which—

1 indicates the wrench, which comprises the shank 2, handle 3, fixed jaw 4, movable jaw 5, rack 6, and pivoted pawl 7. As shown in Fig. 2, the pawl 7 is pivoted at 8, and a spring 9 is employed to hold the teeth 10 in engagement with the rack 6. As also shown in Fig. 2, the rack 6 extends along the shank 2 and down into the handle 3, and the said shank 2 is provided with a groove 11 to accommodate said rack, as shown in Fig. 3.

Referring particularly to Fig. 4, it is seen that the lower portion of the rack 6 is pro-

vided with a groove 12, said groove being also shown in Fig. 2. 13 indicates the rack-moving ring, which is in the nature of a thread, said ring being provided with a flat face 14 at one end and a flat face 15 at its other end. As shown in Figs. 2, 5, and 6, an outer band 16 is provided, to which said rack-moving ring is secured in any convenient manner, and below said band 16 and in contact therewith is a stationary ring 17, upon which said band 16 rotates, and referring again to Fig. 2 it will be seen that the rear portion of the shank 2 is cut away at 18, forming a shoulder 19, which is engaged by the upper edge of said band 16, as clearly shown, the said band 16 being thus held against vertical movement by the stationary ring 17 of the handle 3 and the shoulder 19 of the shank 2.

Referring now to Fig. 4, it will be seen that the flat face 15 on one end of the ring 13 is in engagement with the side of the rack 6. In Fig. 5 the ring is also shown in this position. Consequently the rotation of the ring 13 in the direction contrary of the hands of a watch is limited by the face 15 of the ring 13, impinging the side of the rack 6, as shown in Figs. 4 and 5. In Fig. 6, however, the flat face 14 on the other end of the ring 13 is shown in engagement with the opposite side of the rack 6. Consequently the rotation of the ring 13 in the direction of the hands of a watch is limited by the flat face 14 on the end of the ring 13, impinging the side of the rack 6. Consequently the rotation of the ring 13 in either direction is slightly less than one complete revolution.

Having thus described the several parts of my invention, its operation is as follows: In order to adjust the movable jaw 5 to a nut or other object, the thumb is placed on the pawl 7 in front of the spring 9, which raises said pawl out of engagement with the rack 6. The said movable jaw 5 can then be raised or lowered to the desired position. The adjustment of the jaw, however, by this means by moving the jaw one tooth on the rack can never be closer than the distance between two of the teeth on the rack. Consequently it frequently happens that the movable jaw cannot be moved to tightly engage the nut or other object, and in such a case it becomes necessary to move the rack until a neat adjustment is effected. The movement of the rack need never be more than the distance between two teeth of the rack, and in my construction the rack cannot be moved more

than the distance between two teeth of the rack for the reason that any adjustment greater than the distance between two teeth of the rack can be effected by sliding the movable jaw, as of course is obvious. Referring now particularly to the construction for moving the rack, which is illustrated in Figs. 4, 5, and 6, we will suppose that it is necessary to lower the rack in order to secure a neat adjustment of the wrench-jaws, and we will suppose that the rack-moving ring 13 is in position as shown in Figs. 4 and 5. In order to lower the rack, the outer band 16, to which the ring 13 is secured, is rotated in the direction of the hands of a watch until the face 14 of one end of the ring 13 impinges the side of the rack 6, as shown in Fig. 6. The pitch of the ring 13 is such that the rotation of the ring, as described, will move the rack the length of one tooth of the rack, and when therefore the flat face 14 on the end of the ring 13 is in engagement with the side of the rack as shown in Fig. 6 the said rack is at its lowest point. In order therefore to effect a neat adjustment of the movable jaw 5, the said jaw is moved upwardly as close as possible to the nut or object to be engaged, and if the movable jaw 5 does not come in close contact with the nut or object to be engaged the band 16, carrying the ring 13, is rotated in the direction contrary to the hands of a watch, and said ring 13, rotating in the groove 12 of the rack 6, forces said rack upwardly and carries with it the movable jaw 5 until a neat adjustment of the jaws is effected on the nut or object to be engaged. Thus it is seen that the movement of the rack 6 need never be greater than the length of one tooth of the

rack. Consequently in order to effect a neat and close adjustment of the jaws of the wrench said adjustment cannot be effected under any circumstances by more than a complete revolution of the band 16 and ring 13.

I am aware that devices of this character have been used before, and I lay no claim, broadly, to a wrench provided with a movable rack; but I am not aware that a construction which provides for moving the rack the distances of a single tooth only and no more has been used, and I therefore lay claim to my construction for moving the rack the distance of one tooth.

Having thus fully described my invention, I do not wish to be understood as limiting myself to the exact and precise construction herein set forth, as various slight changes may be made therein which would fall within the limit and scope of my invention, and I consider myself clearly entitled to all such changes and modifications.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

In a wrench, the combination of a sliding jaw, a rack-bar associated therewith, a ring for moving said rack-bar, the ends of said ring being constructed to impinge said rack-bar to limit the rotation of said ring, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH GOULD WILSON.

Witnesses:

MORGAN WILSON,
W. M. BLOGG.