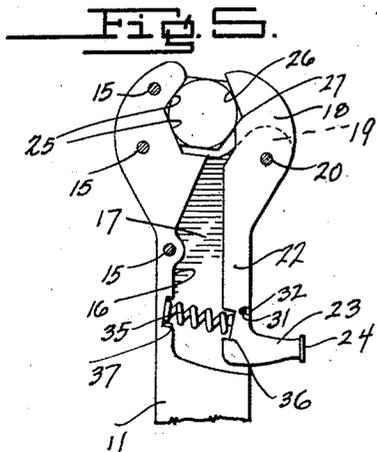
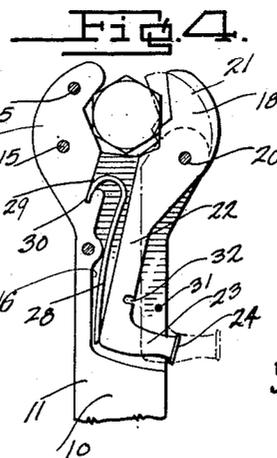
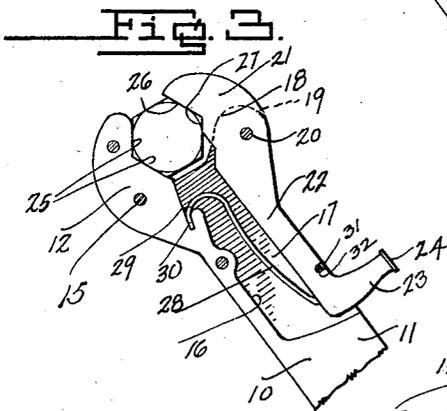
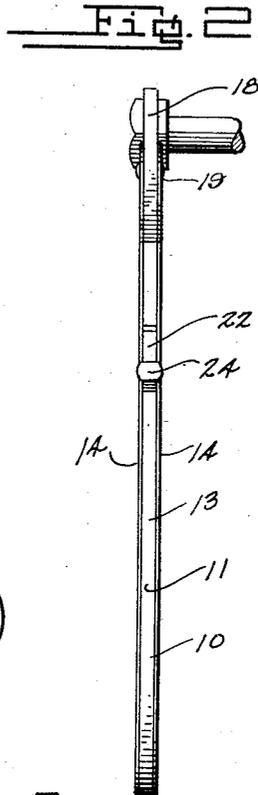
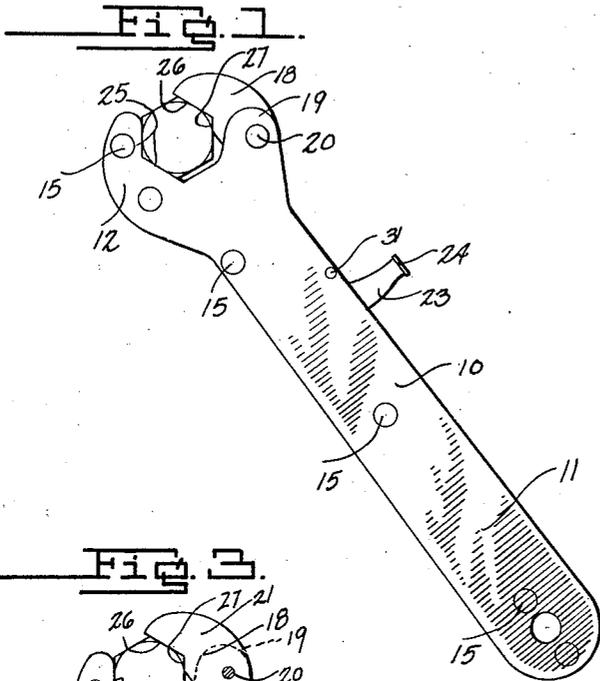


S. MATTHEY.
 RATCHET WRENCH.
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S. Matthey
 Inventor

By *Launcester and Alvine*
 Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL MATTHEY, OF SEATTLE, WASHINGTON.

RATCHET WRENCH.

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To all whom it may concern:

Be it known that I, SAMUEL MATTHEY, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Ratchet Wrenches, of which the following is a specification.

This invention relates to wrenches, and the primary object of the invention is to provide an improved wrench of the ratchet type which is so constructed as to permit the wrench to be used in narrow corners or other confined places, thereby permitting a nut or bolt to be tightened or loosened which could not be turned by the ordinary type of wrench.

Another object of the invention is the provision of an improved ratchet wrench embodying a shank having a rigid jaw formed thereon, and a pivoted jaw secured thereto, the said pivoted jaw being normally held in engagement with the work and so constructed as to firmly grasp the work when the shank is turned in one direction and to swing on its pivot when the shank is turned in the other direction, so as to release the work, said pivoted jaw having means formed thereon whereby the operator can swing the same to an inoperative and nut receiving position.

A still further object of the invention is to provide an improved wrench of the above character which is durable and efficient in use, one that is simple and easy to manufacture, and one which can be placed upon the market at a reasonable cost.

Other objects of the invention will appear in the following detailed description taken in connection with the drawings, forming a part of this specification, in which drawings:

Figure 1 is a top plan view of the improved wrench.

Figure 2 is a side elevation of the same.

Figure 3 is a fragmentary elevation of the wrench showing one of the side plates removed and the jaws of the wrench in operative position on a bolt head.

Figure 4 is a similar view showing the pivoted jaw in its ratcheting position on a bolt head, and

Figure 5 is a fragmentary elevation of the modified form of wrench showing one of the side plates removed.

Referring to the drawings, in detail,

wherein similar reference characters designate corresponding parts throughout the several views, the numeral 10 generally indicates the improved wrench, which includes the shank 11 having the rigid jaw 12 formed on the forward end thereof. The jaw 12 extends arcuately beyond one longitudinal edge of the shank and terminates inward of the central longitudinal axis of the shank. The shank 11 and the jaw 12 can be formed of one solid piece of metal, or as shown, out of an intermediate relatively thick plate 13, and side plates 14, which are rigidly or otherwise secured together as at 15. The intermediate plate 13 adjacent the forward end thereof is provided with an inwardly extending cut out or notched portion 16 which extends from the forward end of the shank inward along one longitudinal edge of the plate opposite to the jaw 12 and the side plates 14 overlie the notch or cut out portion and form a pocket 17 in the shank which is adapted to receive the pivoted jaw 18. The side plates 14 at the forward ends thereof opposite to the rigid jaw 12 are provided with the forwardly and outwardly directed pair of ears 19 which engage the outer surfaces of the pivoted jaw 18, and these ears carry the pivot pin 20 on which the jaw 18 is mounted. The pivoted jaw 18 includes the enlarged outer end 21 and the reduced rearwardly extending shank 22 which extends rearwardly beyond the pivot pin 20 and has formed on its rear end a right angular outwardly projecting arm 23 which normally protrudes out of the notched portion 16 of the intermediate plate 13. The outer end of the arm 23 is provided with a flat thumb piece 24, for permitting the convenient operation of the pivoted jaw by the operator when necessary.

The rigid jaw 12 is provided with a pair of angular related working faces 25, which are located opposite to the angular related working faces 26 and 27 of the pivoted jaw 18. The inner working face 27 of the pivoted jaw 18 is formed relatively short so as to permit the easy riding of the wrench on the bolt or nut when turned in one direction. The working faces 26 and 27 of the pivoted jaw 18 are normally held in engagement with the work by means of a leaf spring 28 which has its inner end engaging the rear end of the shank 22 of the jaw. The outer forward end of the leaf spring is bent arcuately as at 29 and fitted

into a socket or groove 30 formed in the inner wall of the notch or recess portion 16. To limit the outward movement of the shank in the pocket 17 by the influence of the leaf spring 28, a pin 31 is provided which is carried by the side plates 14, and is adapted to be received in a notch 32 formed in the outer longitudinal face of the shank 22 of the pivoted jaw 18.

10 When the shank of the wrench is turned in a clockwise direction, the stress will be exerted on the jaw face 26, which is located beyond the pivot pin 20 which will swing the jaw outwardly and permit the ratcheting of the wrench on the work. The jaw face 27 is formed relatively short so as to permit the work to slide by the same when the jaw is swung on its pivot.

20 When the shank of the wrench is turned in a contra-clockwise direction, the stress is directed on the jaw face 27, which is located inward of the pivot pin 20, which owing to the engagement of the jaw with the work prevents the swinging of the jaw on its pivot and thereby permits the rotation of the work.

By turning the wrench over, the same can be ratcheted on a nut or bolt in a counter-clockwise direction.

30 In operation of the improved wrench, when it is desired to grasp a nut or bolt the thumb is placed on the thumb piece 24 and pressed inwardly which will swing the pivoted jaw outwardly and permit the convenient insertion of a nut or bolt head between the rigid and pivoted jaws. The thumb is then removed from the thumb piece and the leaf spring will swing the jaw 18 into engagement with the work and the nut or bolt is then ready for turning.

40 As shown in Figure 5 the leaf spring 28

may be dispensed with if so desired, and an expansion coil spring 35 used in lieu thereof, and in this instance, the inner face of the shank 22 of the pivoted jaw 18 is provided with a socket 36 and the inner wall of the cut out portion 16 is provided with a similar socket 37 and the terminals of the expansion spring 35 are fitted in the sockets which prevents displacement thereof. The wrench in this form is operated in identically the same manner as described above for Figures 1 to 4.

Changes in details may be made without departing from the spirit or scope of my invention; but,

I claim:

A ratchet wrench comprising a shank, a forwardly extending rigid jaw formed on the shank having working faces formed on its inner surface, a movable jaw extending forwardly of the shank having a pair of working faces formed on its inner surface, the working faces of the jaws being disposed facing each other, the inner working face of the movable jaw being formed relatively shorter than the outer working face, a rearwardly extending handle formed on the movable jaw, an outwardly extending thumb piece formed on the free end of the handle, a pivot pin securing the movable jaw inwardly of the working faces thereof to the shank, spring means engaging the handle for normally urging the movable jaw toward the rigid jaw, the outer face of the handle having a notch formed therein, and a stop pin carried by the shank and arranged to fit in said notch for limiting the swinging movement of the pivoted jaw in one direction.

SAMUEL MATTHEY.