

No. 745,886.

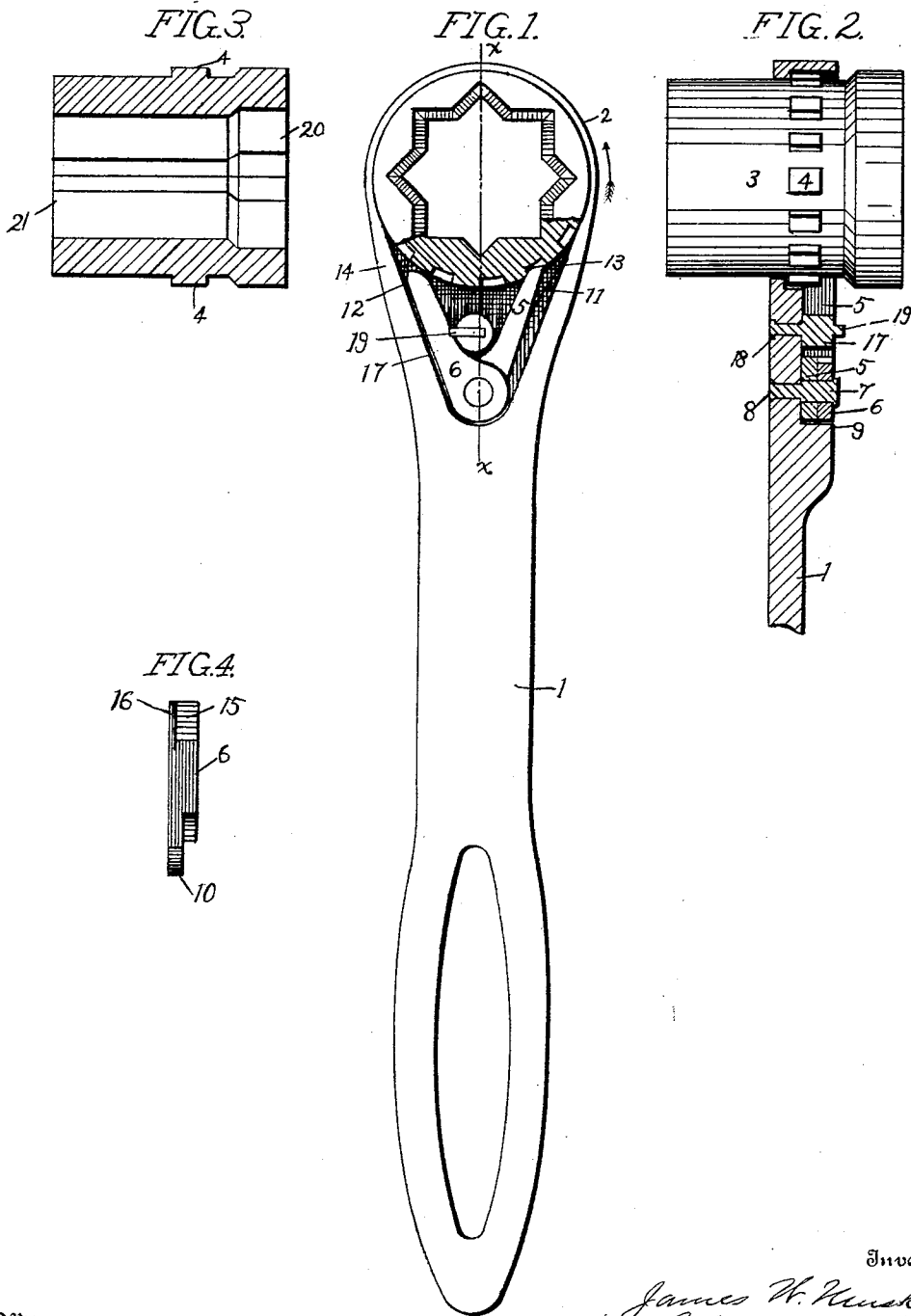
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J. W. MUSKETT & C. FLINT.

RATCHET WRENCH.

APPLICATION FILED SEPT. 22, 1902.

NO MODEL.



Witnesses

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# UNITED STATES PATENT OFFICE.

JAMES W. MUSKETT AND CHARLES FLINT, OF SCRANTON, PENNSYLVANIA;  
SAID FLINT ASSIGNOR OF PART OF HIS RIGHT TO SAID MUSKETT.

## RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 745,886, dated December 1, 1903.

Application filed September 22, 1902. Serial No. 124,338. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES W. MUSKETT and CHARLES FLINT, both citizens of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Ratchet-Wrenches, of which the following is a specification.

Our invention relates to ratchet-wrenches such as are suitable for turning nuts, bolts, collars, and the like; and the objects of the invention are to provide a wrench of the kind light in construction with interchangeable sockets, whereby it is adapted to use with various sizes and locations of nuts and bolts, to render such wrenches reversible without inverting the same, to lock the parts together solidly when the ratchet feature is not to be utilized, and other objects, as pointed out in the specification and claims.

To these ends our invention consists of the construction, arrangement, and combination of the parts, as herein specified, and illustrated in the drawings, in which—

Figure 1 is a side elevation, with part of the socket broken away, illustrating one of our wrenches complete. Fig. 2 is a cross-section, taken on the line  $x x$  of Fig. 1, not cutting the socket member. Fig. 3 is a cross-section taken on the line  $x x$  of Fig. 1, cutting the socket member of the wrench. Fig. 4 is a detail view of one of the pawls used in the device.

Similar characters of reference denote like and corresponding parts throughout the several views.

Referring to the drawings, 1 designates the handle of a wrench made according to our invention, having integrally made therewith a ring 2 on one end thereof, the said ring adapted and arranged to encircle the ratchet-wheel socket member 3, provided with ratchet-stubs 4, which are arranged to permit of turning the wheel in either direction by the pawls 5 and 6, which are pivoted to a common pivot 7, extending through the handle 1 aforesaid and riveted at 8. The pawls 5 and 6 have their pivoted ends rounded at 10 and resting against a shoulder or bridge 9 on the handle of the wrench, the shoulder 9 being utilized

to reinforce the rivet 7 in case it should yield somewhat under heavy pressure. The pawls 5 and 6, respectively, are normally compressed into engagement by flat springs 11 and 12, which are respectively riveted to the handle member at 13 and 14. The ends of each of the pawls are beveled off, as shown at 15, and are provided with lips 16, which project over the stubs 4 in such a way as to prevent the socket member 3 from slipping out of the ring 2 during ordinary handling of the wrench.

The pawls 5 and 6 are arranged to be controlled by a cam member 17, which is eccentrically pivoted to the handle 1 at 18. The said cam is provided with a fret 19, by which it is readily revoluble with the thumb or finger, and its purpose is obvious. When the cam is turned in the position shown in Fig. 1, the pawl 6 is held out of engagement, while the pawl 5 remains in engagement and is adapted to revolve the socket member in the direction indicated by the arrow, whereas if the cam be reversed, so that its enlarged side compresses against the pawl 5, the said pawl 5 is compressed out of engagement and the pawl 6 is dropped into engagement, so as to permit of turning the socket member 3 aforesaid in a direction opposite to that of the arrow.

As a further explanation of the use of the device it should be noted that when the cam 17 is turned with its enlarged portion directly upward or toward the socket 3 both pawls 5 and 6 will be left into engagement, so that the socket aforesaid is rigidly locked from turning in either direction, whereas if the cam 17 be reversed from the last position mentioned, so that its enlarged portion presses against both of the pawls 5 and 6, the said pawls are both compressed out of engagement with the stubs 4 of the socket member, and thereby permit of its easy removal or insertion into the handle of the wrench.

The socket member may be constructed, as is indicated, with one end having a larger socket, as 20, and the other end having a smaller socket, as 21. As each of these ends will accommodate two sizes of square nuts, it is evident that the sockets constructed to accompany and constitute parts of our wrench

each have a scope or capacity of four sizes of nuts, while any desired number of such sockets may of course be constructed to accompany the handle member.

5 Having thus described our invention, we do not wish to be confined to the exact description, as many of the details may be varied without departing from the general spirit of the invention.

10 What we claim, and desire to secure by Letters Patent, is—

1. In a ratchet-wrench of the kind described, a handle member having a ring on one end thereof, a stub-toothed ratchet-wheel socket member insertible into said ring from one side and revoluble therein, a pair of spring-actuated pawls pivoted to a common point on said handle on the side from which said socket member is insertible, the said pawls having 20 their outer ends arranged to engage with opposite sides of the stubs on the ratchet aforesaid, a lip on the engagement end of each of said pawls arranged to extend laterally over the stubs on the socket member, an eccentric cylindrical cam pivoted intermediate of the ratchet and the pivotal connection of the pawls aforesaid, the cylindrical face thereof arranged to engage with the inner sides of said pawls in one of its positions, and with

each pawl separately in two other positions, 30 substantially as specified.

2. In a ratchet-wrench of the kind described, a handle member having an annular-seated ring on one end thereof, a stub-toothed ratchet-wheel socket member revolubly fitted into 35 said ring, the stubs thereof resting on the annular seat of said ring, a pair of spring-actuated pawls pivotally attached to the handle aforesaid, and having engagement ends in engagement with the stubs of said ratchet 40 member on opposite sides, lips on the outer sides of the ends of said pawls extending over the stubs of the ratchet member, and an eccentric cam pivoted intermediate of the pivotal point of the pawls aforesaid and the 45 socket member, the said cam adapted to engage with the inner faces of the pawls jointly in one position, and with each pawl separately in each of two other positions, substantially as and for the purpose specified. 50

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES W. MUSKETT.  
CHARLES FLINT.

Witnesses:

THOMAS J. FITZSIMMON,  
H. E. SULLIVAN.