No. 842,039. PATENTED JAN. 22, 1907.

W. B. WALT.

RATCHET WRENCH.

APPLICATION FILED OCT. 31, 1906.

3 SHEETS—SHEET 1.

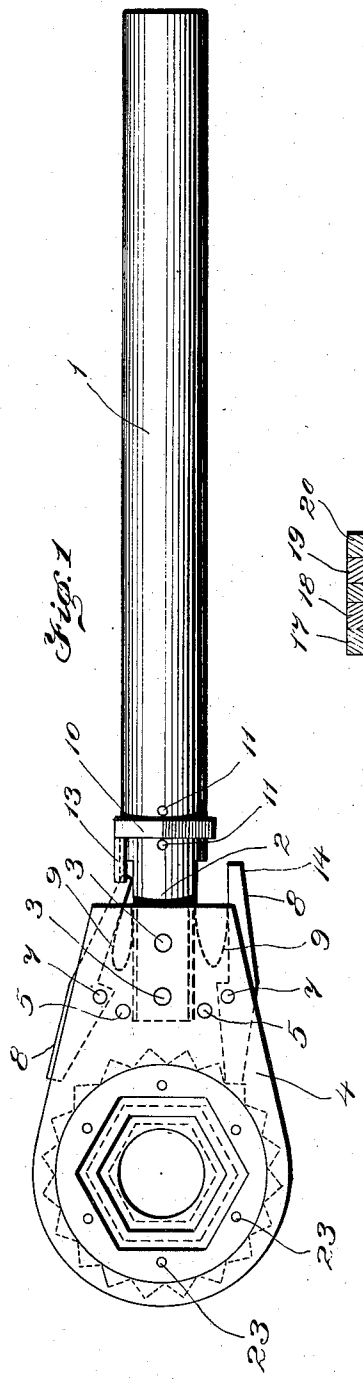


Fig. 1

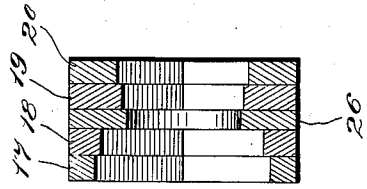


Fig. 2

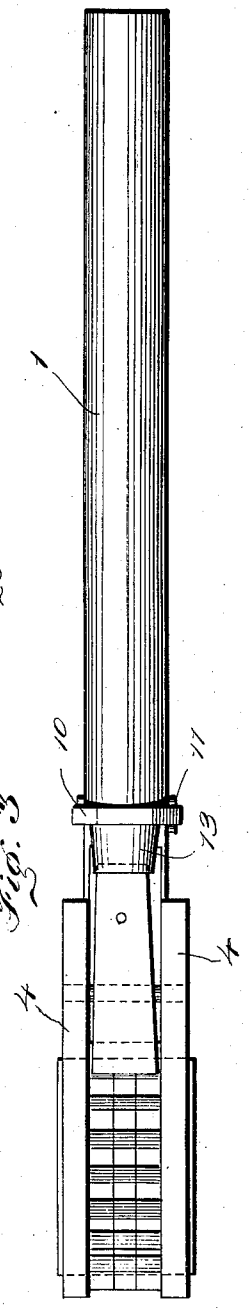


Fig. 3

Witnesses

R. C. Claflin

E. A. Bruns

Inventor

Warren Brooke Walt

By Victor J. Evans

Attorney

No. 842,039. PATENTED JAN. 22, 1907.

W. B. WALT.

RATCHET WRENCH.

APPLICATION FILED OCT. 31, 1906.

3 SHEETS—SHEET 2.

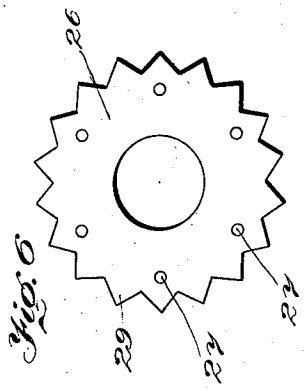


Fig. 6.

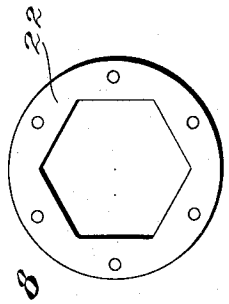


Fig. 8.

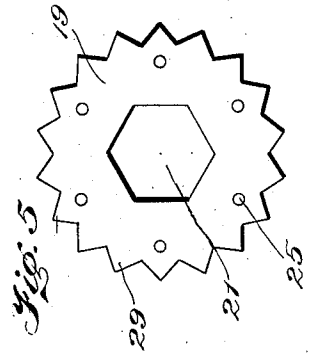


Fig. 5.

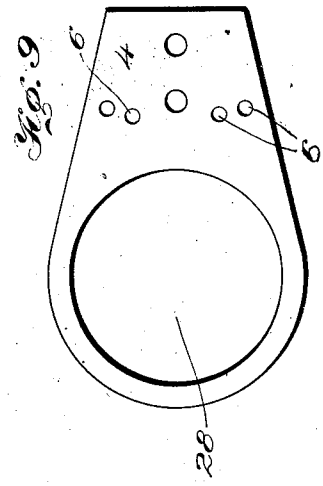


Fig. 9.

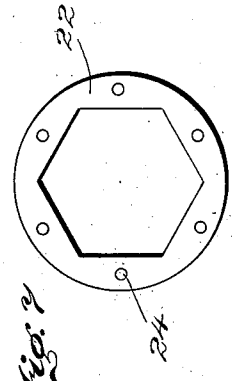


Fig. 7.

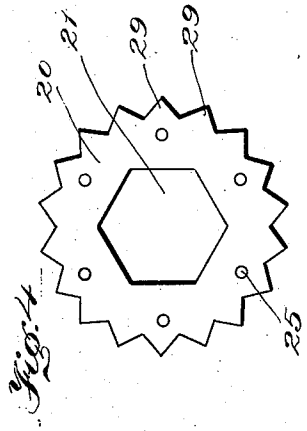


Fig. 4.

Witnesses

R. C. Claflin

C. R. Burgess

Inventor

Warren Brooke Walt

By Victor J. Evans

Attorney

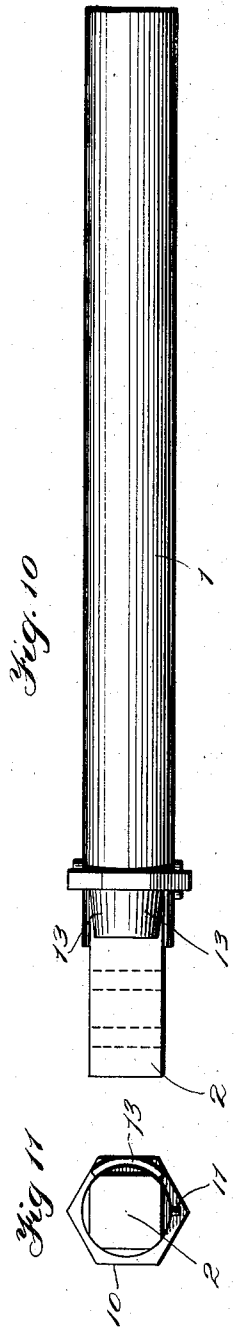
No. 842,039. PATENTED JAN. 22, 1907.

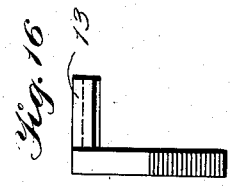
W. B. WALT.

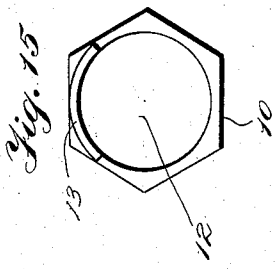
RATCHET WRENCH.

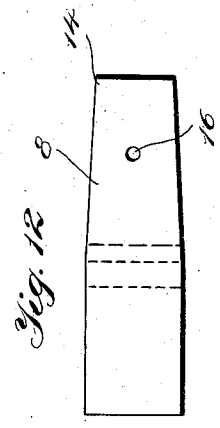
APPLICATION FILED OCT. 31, 1906.

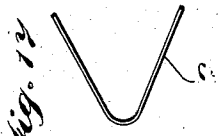
3 SHEETS—SHEET 3.



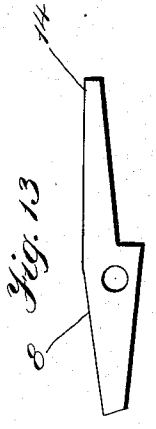












Witnesses

R. C. Laflin

E. C. Bumgardner

Inventor

Warren Brooke Walt

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

WARREN BROOKE WALT, OF PORT PROVIDENCE, PENNSYLVANIA.

RATCHET-WRENCH.

No. 842,039. Specification of Letters Patent. Patented Jan. 22, 1907.

Application filed October 31, 1906. Serial No. 341,480.

To all whom it may concern:

Be it known that I, WARREN BROOKE WALT, a citizen of the United States of America, residing at Port Providence, in the county of Montgomery and State of Pennsylvania, have invented new and useful Improvements in Ratchet-Wrenches, of which the following is a specification.

This invention relates to ratchet-wrenches; and one of the principal objects of the same is to provide simple and efficient means for turning nuts of different sizes without adjustment of the wrench.

Another object of the invention is to provide means whereby nuts of different sizes may be turned upon bolts and to provide means whereby the bolts may extend through the wrench without interfering with the operation of the turning of the nut.

Another object of my invention is to provide a reversible ratchet-wrench in which means are provided for engagement with nuts of different sizes without adjustment of the nut-holding means and to provide means for throwing into and out of operation the pawls for engaging the ratchet portion of the wrench.

The objects and advantages herein referred to may be attained by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a reversible ratchet-wrench made in accordance with my invention. Fig. 2 is a sectional view through the clamping-rings which engage the nuts of different sizes. Fig. 3 is a plan view of the wrench. Fig. 4 is a plan view of one of the clamping-rings. Fig. 5 is a similar view of one of the other clamping-rings. Fig. 6 is a plan view of a partition-ring which divides the clamping-rings upon one side of the wrench from those of the other side. Fig. 7 is a plan view of one of the outside rings for holding the clamping-rings in place. Fig. 8 is a similar view of the other side ring. Fig. 9 is a plan view of one of the face-plates between two of which the clamping-rings are mounted. Fig. 10 is a plan view of the handle detached from the wrench-head. Fig. 11 is a front end view of the same. Fig. 12 is a plan view of one of the pawls. Fig. 13 is a side elevation of the same. Fig. 14 is an end view of said pawl. Fig. 15 is a plan view of the adjusting-ring for holding one of the pawls out of engagement with the ratchet-teeth. Fig. 16 is an edge view of said ring. Fig. 17 is an edge view of one of the pawl-springs.

Referring to the accompanying drawings for a more particular description of my invention, the numeral 1 designates the handle of the wrench, which is provided at its inner end with a reduced and squared portion 2, to which the wrench-head is secured by means of the bolts or rivets 3. Face-plates 4 are secured on opposite sides of the squared portions 2 of the wrench-handle by means of said bolts or rivets 3 and the rivets or screws 5, which pass through the apertures 6 in said face-plates, one at each side of the squared portion of the handle. Pivotally connected between the face-plates upon the pins 7 are a pair of pawls 8, said pawls being normally held in engagement with the ratchet-teeth by means of the U-shaped springs 9, which are disposed between the outer ends of the pawls and the surface of the squared portion 2 of the handle, as shown more particularly in Fig. 1. An adjusting-ring 10 is mounted upon the handle between stop-pins 11, said ring 10 having a central opening 12 therein, which permits said ring to rotate upon the handle 1. Projecting at right angles to the ring 10 is a detent 13, which is curved to conform to the diameter of the opening 12 in the ring and extends outward toward the wrench-head in position to engage the tail ends 14 of the pawls, said ring being adjustable to hold either one of the pawls 8 out of engagement with the ratchet-teeth, as will be understood. The springs 9 are held in place by means of a rivet passing through the perforation 16 in the pawl 8. The nut-clamping rings 17 18 19 20, two of which are shown in Figs. 4 and 5, are each provided with a central opening 21, said openings being of varying sizes to engage nuts of different sizes and all of said rings being rigidly secured together by means of the two holding-rings 22 and the pins 23, which pass through the perforations 24 in the rings 22 and through the perforations 25, which register therewith in the rings 17 18 19 20. A partition ring or disk 26 is interposed between the rings 18 and 19, as shown more particularly in Fig. 2, and the pins 23 pass through perforations 27 in said rings, thus holding all the rings in rigid connection with the holding-rings 22 and said holding-rings 22 being located outside the face-plates 4 and registering with the opening 28 therein. On the peripheries of each of the rings 17 18, 19, 20, and 26 are formed a series of ratchet-

teeth 29, which register one with the other when the rings are secured together, as will be noted upon reference to Fig. 3 of the drawings.

The operation of my wrench may be briefly described as follows: When it is desired to adjust a nut upon a bolt or remove the nut therefrom, the wrench-head is placed over the nut to be engaged by one of the rings 17, 18, 19, and 20, the upper pawl 8 being disengaged from the ratchet-teeth by means of the detent 13. When the wrench is to be reversed to apply the clamping-rings on the opposite side of the wrench-head, the upper pawl 8 is released from the detent 13 and the other pawl is engaged by said detent, when the ring 10 is rotated upon the handle, as will be obvious.

From the foregoing it will be understood that any suitable number of clamping-rings may be utilized and that these clamping-rings may have openings therein of the required size and shape to clamp nuts of different sizes and shape and that said rings may be varied in thickness to engage nuts of special contour without departing from the spirit or scope of my invention.

My wrench is of simple construction, may be readily reversed for engaging nuts of different sizes, and quickly adjusted to turn any of the nuts upon their bolts, and owing to the central openings in the partition-plates 26 a nut can be engaged upon a bolt at some distance from the end thereof, the bolt passing through said central opening.

Having thus described the invention, what I claim is—

1. A reversible ratchet-wrench provided with a plurality of clamping-rings to engage nuts of different sizes, said clamping-rings being provided with coincidently-arranged ratchet-teeth, pawls to engage said ratchet-teeth, and an adjustable detent for holding one of the pawls out of engagement with the ratchet-teeth, substantially as described.

2. A ratchet-wrench comprising a handle, a wrench-head, a plurality of nut-clamping rings mounted to rotate in the wrench-head, said rings having ratchet-teeth arranged to register, pawls mounted upon the wrench-head and a detent for holding one of said pawls out of engagement with the ratchet-teeth.

3. A ratchet-wrench comprising a handle, a wrench-head secured to said handle and comprising oppositely-arranged face-plates, a plurality of nut-engaging rings having openings therethrough of different sizes, a central partition-ring, said rings each provided with peripheral ratchet-teeth, means for securing said rings together with the teeth in register, pawls pivoted to the face-plates, springs for throwing said pawls into engagement with the ratchet-teeth, and a rotating holding-ring mounted on the handle and provided with a detent to engage one of the pawls and hold it out of engagement with the ratchet-teeth.

4. A reversible ratchet-wrench provided with a series of nut-clamping rings secured together and adapted to rotate simultaneously within the wrench-head, a pair of pawls to engage the coincidently-arranged ratchet-teeth on the clamping-ring and a detent for holding one of said pawls out of engagement with said ratchet-teeth.

5. In a reversible ratchet-wrench, the combination of a plurality of nut-engaging rings, a central partition-ring, said rings having coincidently-arranged ratchet-teeth upon their peripheries, and means for engaging said ratchet-teeth at two points to permit the wrench to be reversed, substantially as described.

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

WARREN BROOKE WALT.

Witnesses:

P. W. KING,

J. W. ALEXANDER.