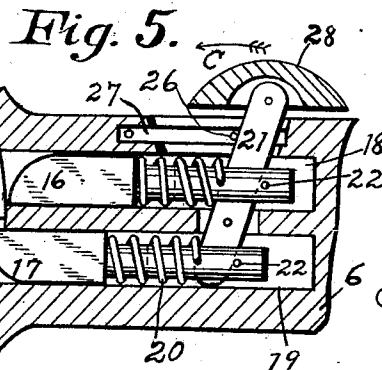
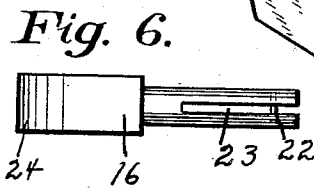
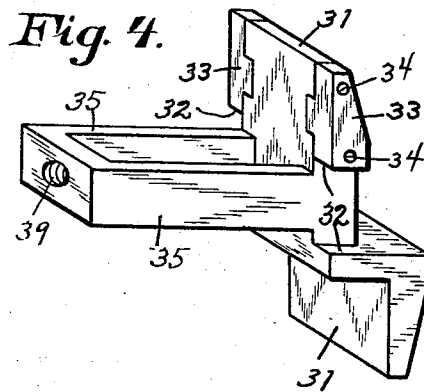
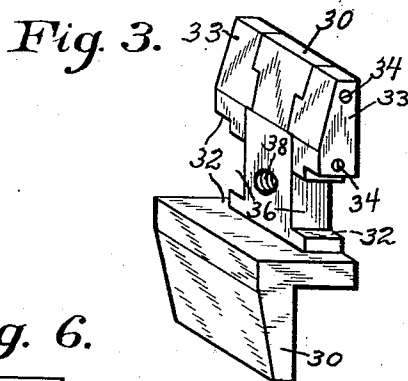
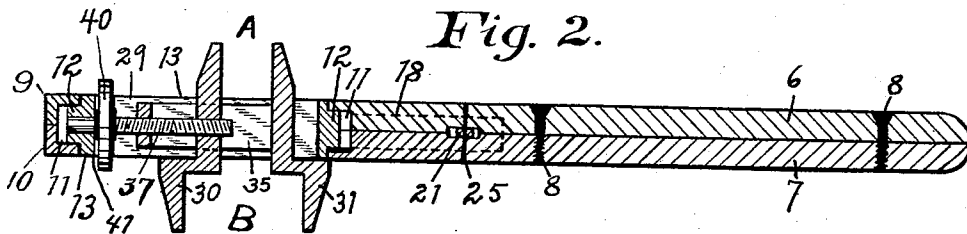
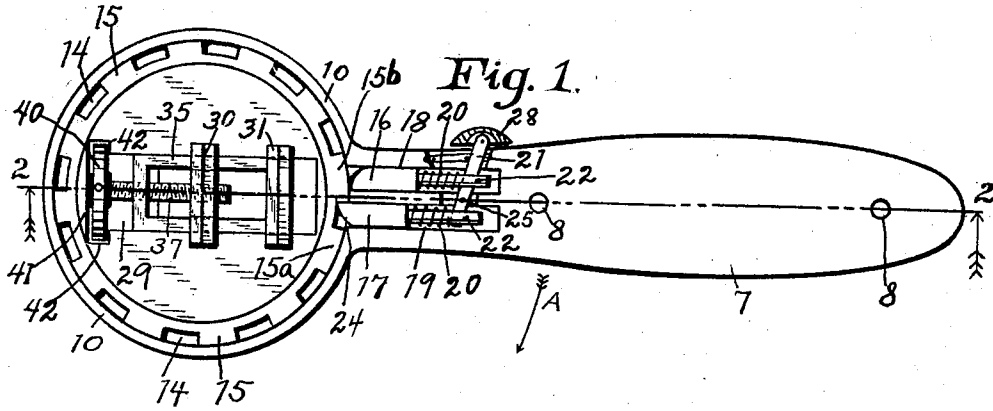


J. A. REPASS.
 RATCHET WRENCH.
 APPLICATION FILED MAY 27, 1910.

968,080.

Patented Aug. 23, 1910.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES A. REPASS, OF NEW AUGUSTA, INDIANA, ASSIGNOR OF ONE-FOURTH TO HENRY H. HAMMER AND ONE-FOURTH TO ERNEST M. HORNADAY, BOTH OF INDIANAPOLIS, INDIANA.

RATCHET-WRENCH.

968,080.

Specification of Letters Patent. Patented Aug. 23, 1910.

Application filed May 27, 1910. Serial No. 563,822.

To all whom it may concern:

Be it known that I, JAMES A. REPASS, a citizen of the United States, and a resident of New Augusta, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Ratchet-Wrenches, of which the following is a specification.

My invention relates to adjustable ratchet wrenches, and the object of my improvement is to provide a simple and strong reversible ratchet wrench having adjustable double jaws. I attain this object by means of the device illustrated in the accompanying drawings, in which—

Figure 1 is a top view of the wrench with the top half of the handle and annular head-guide removed to show the rotative head and ratchet mechanism; Fig. 2 is a section of the wrench taken along the line 2—2 in Fig. 1; Fig. 3 is a view, in perspective, of one of the double jaws; Fig. 4 is a similar view of the other double jaw; Fig. 5 is an enlarged view showing the ratchet mechanism; and, Fig. 6 is an enlarged view of one of the pawls.

Similar numerals of reference indicate similar parts throughout the several views.

The handle is composed of the two halves 6 and 7 and secured together by the screws 8, and said halves are cut away on their inner sides to inclose and support the working parts of the wrench as described below. The annular head-guides 9 and 10 are formed integral with said halves 6 and 7 of the handle and constructed in a manner to form the groove 11, on their inner sides, in which groove the flange 12 of the head 13 is rotatively mounted. Said flange is provided with the peripheral notches 14 and the teeth 15 which engage the pawls 16 and 17 to turn said head in said groove. Said pawls 16 and 17 are slidably mounted in slots 18 and 19 respectively, each of which slots is formed half in the handle portion 6 and the other half in the handle portion 7 to fit the square portion of said pawl. The other end of each of said pawls is formed round and smaller than said square portion to receive the spring 20, and is slotted (Fig. 6) to slide on the reversing lever 21. A pin 22 is provided near the outer end of said round portion of each pawl and extended across the slots 23 to furnish a means by which said pawl can be drawn out of en-

gagement with the teeth 15 by the reversing lever 21. Said springs 20 are inserted between the square portion and the lever 21 on the round portion of said pawls to yieldably maintain said pin 22 against said lever 21 and to allow the pawl which is in engagement with the teeth 15 to yield when the handle is turned toward the round edge 24 of such pawl, for example, when the wrench is set as indicated in Fig. 1, by turning the handle in the direction of the arrow A, the rounded side 24 of the pawl 17 will, when it contacts with the tooth 15^a, yield and allow the tooth to pass under said pawl, but when the handle is turned in the opposite direction the square side of such pawl engages the tooth 15^b and causes the head to turn with the handle. Said reversing lever 21 is pivoted at a point 25 and is locked in positions to alternately draw said pawls 16 and 17 out of engagement with the teeth 15, by the button 26 on the flat spring 27. The thumb-piece 28 is pivoted to the extended end of said reversing lever 21 to form a handle for said lever.

The rectangular slot 29 is formed in the head 13 and the double jaws 30 and 31 are grooved to form the shoulders 32 by means of which they are mounted to slide longitudinally in said slot. The removable jaw portions 33 are secured to said double jaws by the screws 34 (Figs. 3 and 4) and provided for the purpose of assembling the wrench. The double jaw 31 is provided with the integrally formed U-shaped arm 35 by which it is operated and the double jaw 30 is grooved in its edges 36 to allow said U-shaped arm to pass between its edges and the sides of the slot 29. Said double jaws are moved longitudinally in said slot 29 by the right and left hand screw 37 by means of its right hand portion being engaged in suitable threads 38 in the central portion of the double jaw 30 and its left hand portion being engaged in suitable threads 39 in the U-shaped arm 35 of the double jaw 31. Said screw 37 is operated by the thumb-wheel 40 and it is prevented from moving longitudinally in the slot 29 by the thumb-wheel having its hub against the end 41 of said slot and its rim portion in the grooves 42 formed in the sides of said slot.

When it is desired to turn a small nut the side A (Fig. 2) is used and when a larger nut is to be turned the side B (Fig. 2) is to

be used. The wrench is adjusted to a size to fit the desired nut by turning the thumb-wheel 40 on the right and left hand screw 37, which moves both double jaws simultaneously to clamp such nut. The double jaw 31 is provided with the U-shaped arm to afford an opening through the wrench between the double jaws so that a rod, or bolt, &c., may be passed through such opening when necessary to reach a desired nut. The direction of the rotation of the head 13 is reversed by moving the thumb-piece 28 in the direction of the arrow C, in Fig. 5, which movement causes the pawl 17 to be drawn out of engagement with the teeth 15 of the head 13 and allows the spring 20 to force the pawl 16 into engagement with said teeth.

What I claim as new and desire to secure by Letters Patent, is—

20 A wrench comprising a handle formed in two portions with a head-guide portion formed integrally with each handle portion, a head mounted to rotate in said head-guide, a plurality of peripheral teeth formed on said head and inclosed in said head-guide, 25 two spring actuated pawls slidably mounted in said handle to alternately engage said

peripheral teeth, a reversing lever pivoted at a point between said spring actuated pawls and operatively connected with said 30 pawls to alternately engage one and disengage the other of said spring actuated pawls from said peripheral teeth, a rectangular slot formed in said head, two double jaws mounted to slide longitudinally in said slot, 35 a U-shaped arm formed integral with one of said double jaws and extended around the other of said double jaws by which said first double jaw is operated, and a right and left hand screw journaled in said head at one 40 end of said slot and having its right hand screw portion operatively connected with one of said double jaws and its left hand portion operatively connected with the U-shaped arm of the other of said double jaws 45 to simultaneously move said double jaws in said slot.

In witness whereof, I hereunto sign my name in the presence of two witnesses.

JAMES A. REPASS.

Witnesses:

S. E. CUTLER,

F. N. TRUESDALE.