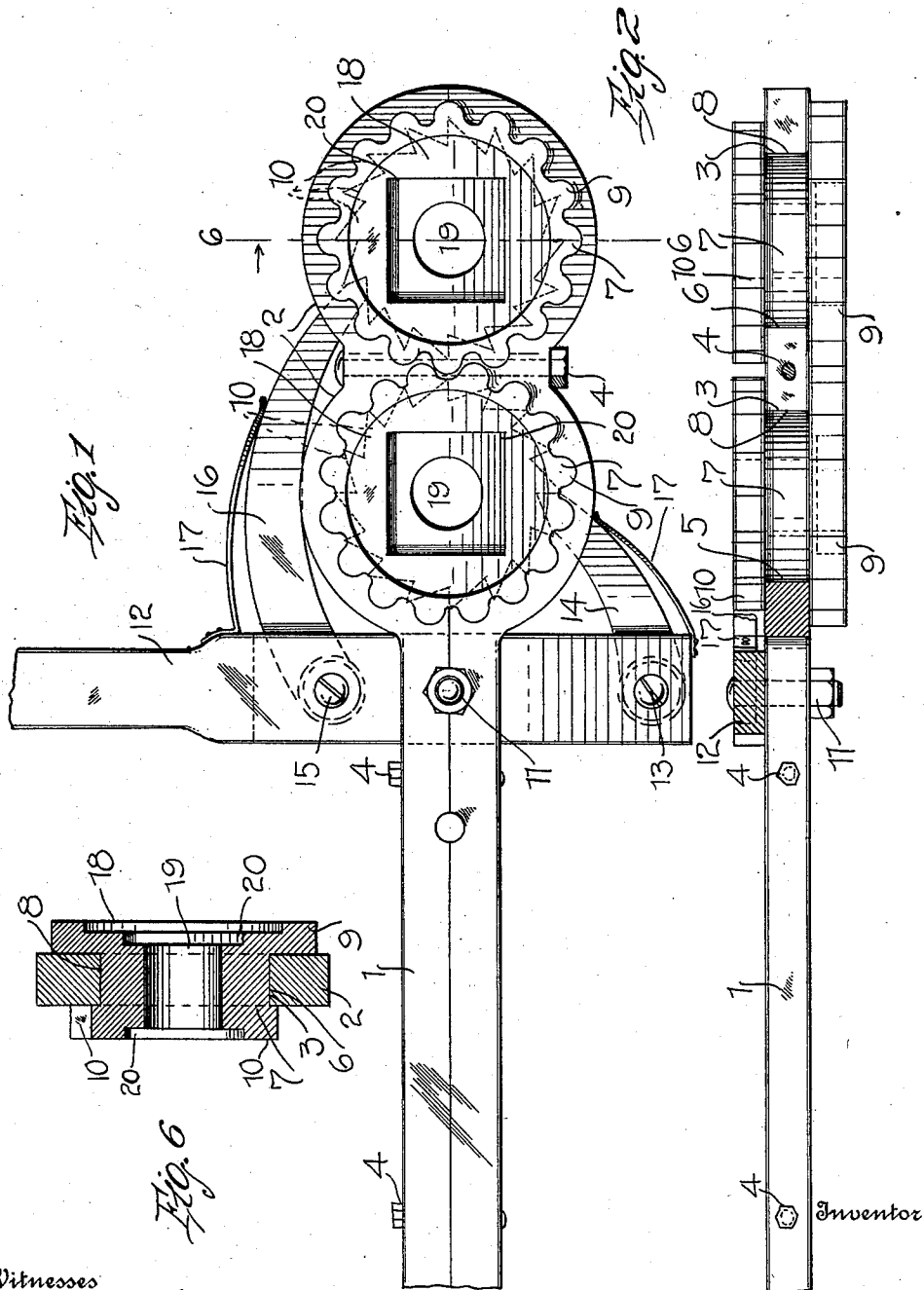


R. OWEN, JR.
 DOUBLE ACTING WRENCH.
 APPLICATION FILED FEB. 3, 1913.

1,072,980.

Patented Sept. 9, 1913.

2 SHEETS—SHEET 1.



Witnesses
 Robert M. Sutphen
 A. J. Ford.

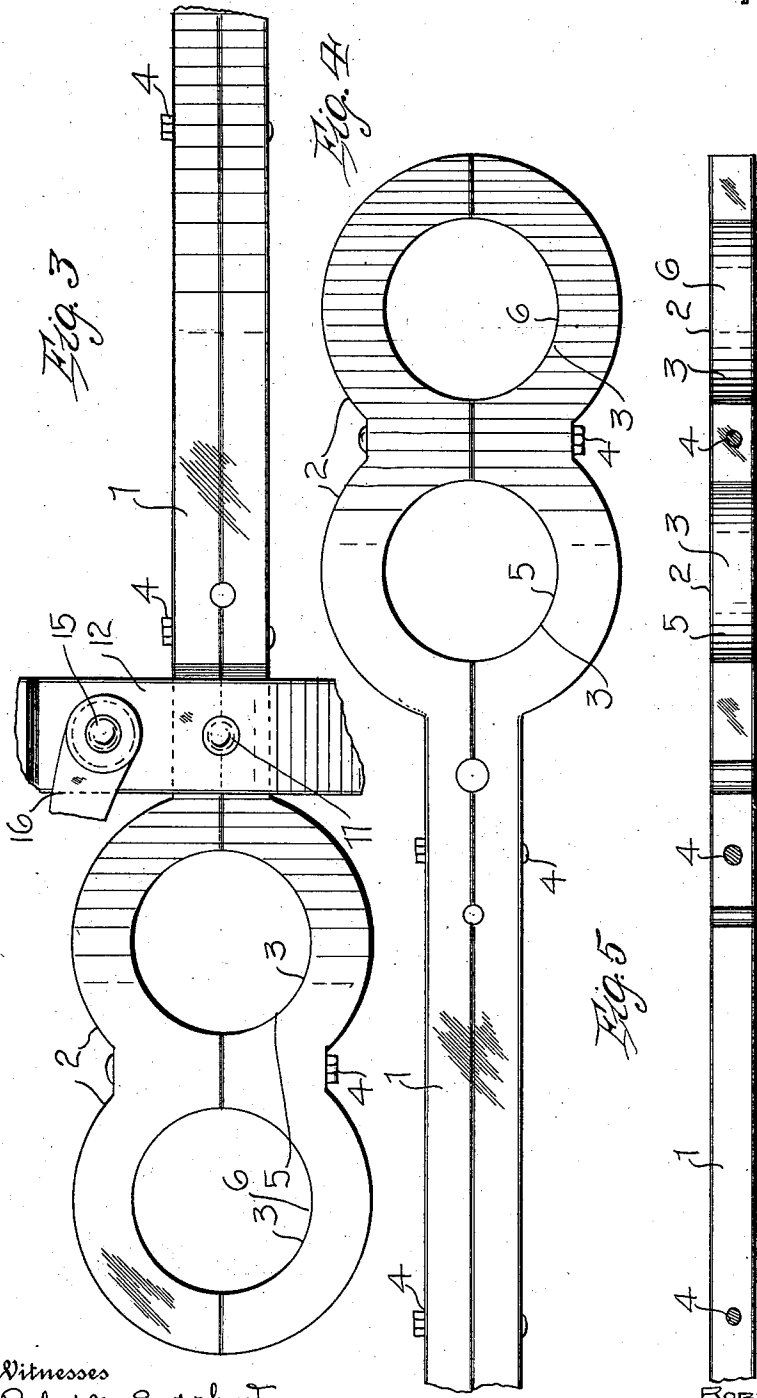
Inventor
 ROBERT OWEN JR
 By *Watson & Coleman*
 Attorney

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UNITED STATES PATENT OFFICE.

ROBERT OWEN, JR., OF SHAWNEE, OHIO.

DOUBLE-ACTING WRENCH.

1,072,980.

Specification of Letters Patent.

Patented Sept. 9, 1913.

Application filed February 3, 1913. Serial No. 746,080.

To all whom it may concern:

Be it known that I, ROBERT OWEN, JR., a citizen of the United States, residing at Shawnee, in the county of Perry and State of Ohio, have invented certain new and useful improvements in Double-Acting Wrenches, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in wrenches and more particularly to that class of wrenches which are provided with a rotatable head having ratchet teeth formed thereon and a lever having a pawl for engagement with the ratchet teeth for the purpose of rotating the head.

An object of this invention is the provision of a wrench of this character in which two heads having nut receiving sockets are rotatably mounted in the handle, the heads being geared to each other and being provided with ratchet teeth, and an operating lever having pawls adapted for engagement with the ratchet teeth on the heads, whereby one head will be turned in one direction and the other head turned in the opposite direction so that either left threaded or right threaded nuts may be turned without changing the position of the handle of the wrench.

Another object of this invention is the provision of a wrench of this character in which the heads will be rotated continually in opposite directions upon oscillation of the operating lever.

A still further object of this invention is the provision of a wrench in which heads having sockets of different sizes are readily interchangeable in the handle, so that different sized nuts may be turned with the same handle.

With these and other objects in view, my invention consists in certain novel constructions, combinations and arrangements of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my device. Fig. 2 is a top plan view thereof partly in section. Fig. 3 is a side elevation with the rotary heads removed. Fig. 4 is a side elevation of the handle. Fig. 5 is an inner edge view of one section of the handle. Fig. 6 is a transverse section of one of the rotary heads.

Referring more particularly to the draw-

ings, the numeral 1 designates the handle of the wrench, the handle consisting of two sections, the outer ends of which are curved as at 2 to form semicylindrical recesses 3. The sections of the handle are secured together by bolts 4 or other suitable fastening devices and when the sections are connected, the recesses 3 formed by the curved portions of the sections of the handle form circular bearings 5 and 6 respectively for the reception of the rotatable heads 7. Each of the heads 7 is formed on its periphery with a central annular groove 8, which is adapted to engage the curved portions 2 of the handle whereby lateral movement of the heads 7 is prevented. Formed on one side of the annular groove of each of the heads is an annular series of cogs 9, the cogs on each head being adapted to mesh with each other so that upon rotation of one head, the other will be rotated simultaneously in the opposite direction. Formed on the other side of the annular groove on each head is an annular series of ratchet teeth 10, the teeth being of relatively less height than the cogs 9, so that the teeth on the respective heads will not engage each other when the heads are rotated.

Pivotally secured to the handle, as at 11, inwardly of the heads, is a lever 12, the lever being secured to the handle intermediate of its ends so that the opposite ends thereof will project beyond the opposite edges of the handle. Pivotally secured to the outer end of the lever 12, as at 13, is a pawl 14 which is adapted for engagement with the ratchet teeth 10 on the inner head, and pivotally secured to the lever on the opposite side of the handle, as at 15, is a pawl 16 which is relatively longer than the pawl 14 and is adapted for engagement with the ratchet teeth on the outer head. It is to be noted that the ratchet teeth 10 on the heads face in opposite directions, so that upon oscillation of the lever 12, the outer head will be rotated toward the right, while the inner head will be rotated in the opposite direction. If desired, leaf springs 17 may be secured to the lever so as to bear against the pawls 14 and 16 and normally maintain them in engagement with the ratchet teeth on the heads. Openings 18 are formed in the heads 7, the intermediate portions of the openings being annular, as at 19, for the reception of the bolts, and the opposite ends 110

thereof being angular, as at 20, for the reception of the nuts which are to be turned upon the bolts.

In the practical use of my device, when a nut having right hand threads adapted to be turned upon the bolt is engaged in the nut receiving socket in the outer head 7, the lever 12 is moved backward and forward and upon forward movement of the lever, the pawl 16 engaging in the ratchet teeth in the forward head will turn the head toward the right, and upon reverse movement of the lever 12, the pawl 14 engaging in the teeth of the inner head will turn the inner head toward the left whereby the outer head will again be turned toward the right, owing to the engagement of the cogs 9. It will be noted that while the outer head is continually turned toward the right, the inner head will be simultaneously turned toward the left so that when a nut having a left hand thread is adapted to be turned on a bolt, the socket of the inner head is engaged with the nut so that upon oscillation of the lever 12, the nut will be readily threaded upon the bolt.

It will be understood that the wrench may be used as a single wrench by removing the lever 12 and pivotally connecting one of the pawls to the handle. It is also to be understood that heads having sockets of different sizes may be provided, so that one head may be readily removed and another applied when it is desired to turn nuts of different sizes. By reversing the position of the wrench, a nut may be threaded or unthreaded with the same head.

Having thus fully described my invention, what I desire to claim and secure by Letters Patent is:—

1. A wrench comprising a handle consisting of two sections, the outer ends of said sections being curved in opposite directions to form circular bearings, heads rotatably mounted in said bearings, said heads being formed with central annular grooves for engagement with the curved portions of said sections, and means connected to said handle to rotate said heads in opposite directions, as and for the purpose described.

2. A wrench comprising a handle, heads rotatably mounted in said handle at the outer end thereof, a lever pivotally connected intermediate of its ends to said handle inwardly of said heads, the opposite ends of said lever extending at right angles from said handle, and means connected to said lever on either side of said handle for engagement with said heads, as and for the purpose described.

3. A device of the character described comprising a handle, heads rotatably mount-

ed in said handle at the outer end thereof, a lever pivotally connected intermediate of its ends to said handle inwardly of said heads, the opposite ends of said lever extending at right angles from said handle, each of said heads being formed with an annular series of ratchet teeth, and pawls pivotally connected to said lever on either side of said handle and adapted to engage said ratchet teeth, as and for the purpose described.

4. A wrench of the character described comprising a handle, heads rotatably mounted in said handle at its outer end, intermeshing cogs formed on said heads, ratchet teeth formed on said heads, a lever pivotally connected intermediate of its ends to said handle inwardly of said heads, the opposite ends of said lever extending at right angles from said handle, and pawls of relatively different lengths pivotally connected to said lever on either side of said handle, for engagement with said ratchet teeth, as and for the purpose described.

5. A wrench comprising a handle consisting of two sections, the outer ends of said sections being curved outwardly to form circular bearings, heads rotatably mounted in said bearings, said heads having central annular grooves for engagement with the curved portions of said sections, intermeshing cogs formed on said heads one side of said grooves, ratchet teeth formed on said heads to the other side of said grooves, a lever pivotally connected to said handle, and pawls pivotally connected to said lever and adapted to engage said ratchet teeth, as and for the purpose described.

6. A wrench comprising a handle consisting of two sections, the outer ends of said sections being curved outwardly to form circular bearings, heads rotatably mounted in said bearings, said heads being formed with central annular grooves for engagement with the curved portions of said sections, intermeshing cogs formed on said heads to one side of said grooves, ratchet teeth formed on said heads to the other side of said grooves, a lever pivotally connected intermediate of its ends to said handle inwardly of said heads, the opposite ends of said lever extending at right angles from said handle, and pawls of relatively different lengths pivotally connected to said lever on either side of said handle for engagement with said ratchet teeth, as and for the purpose described.

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

ROBERT OWEN, JR.

Witnesses:

SAMUEL GROSS,
EDWARD ABRAM.