

No. 784,876.

PATENTED MAR. 14, 1905.

J. OFFERMANN.
WRENCH.

APPLICATION FILED APR. 23, 1904.

3 SHEETS—SHEET 1.

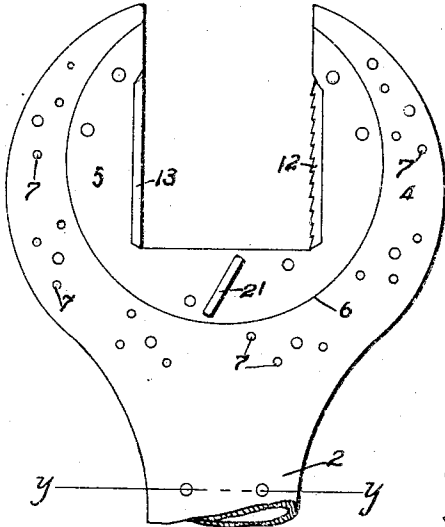


FIG. 1

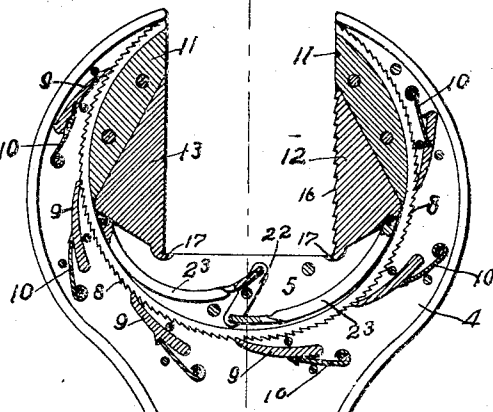


FIG. 2.

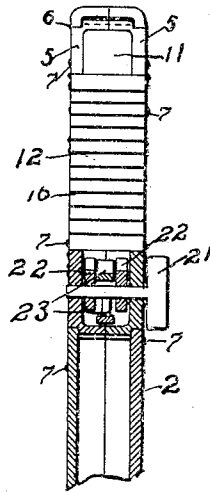


FIG. 3.

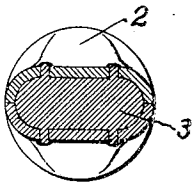


FIG. 4.

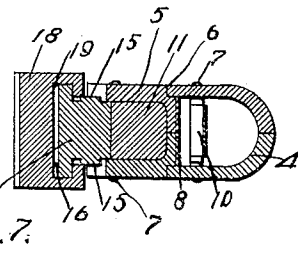
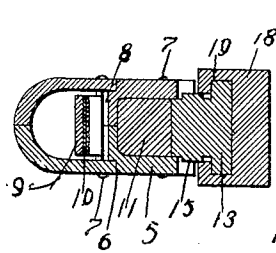
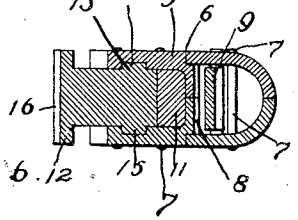
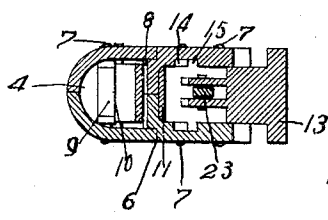
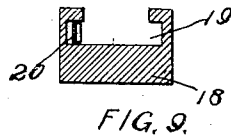
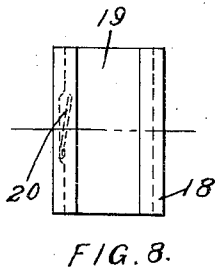
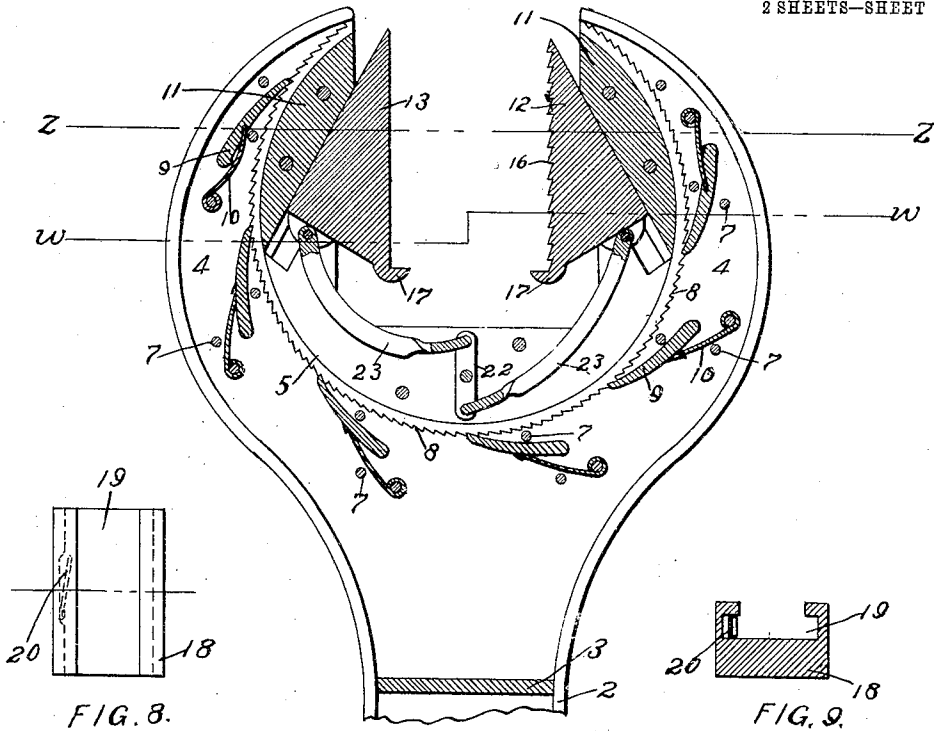
WITNESSES
M. H. Agerty
C. S. Hanks

INVENTOR
JOSEPH OFFERMANN
BY *Paul Paul*
HIS ATTORNEYS.

J. OFFERMANN.
WRENCH.

APPLICATION FILED APR. 23, 1904.

2 SHEETS—SHEET 2.



WITNESSES

M. Hagerity
C. S. Hanson

INVENTOR
JOSEPH OFFERMANN

BY *Paul Paul*
HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOSEPH OFFERMANN, OF MINNEAPOLIS, MINNESOTA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 784,876, dated March 14, 1905.

Application filed April 23, 1904. Serial No. 204,522.

To all whom it may concern:

Be it known that I, JOSEPH OFFERMANN, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to wrenches designed particularly for the use of steam-fitters and plumbers; and the object of the invention is to provide a wrench that is capable of convenient adjustment on a nut or pipe and can be used in a corner or other place where an ordinary wrench cannot be manipulated.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of a wrench embodying my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a section through the jaws, taken on the line *x x* of Fig. 2. Fig. 4 is a section on the line *y y* of Fig. 1. Fig. 5 is a sectional view of the head of the wrench, showing its jaws in their operative position. Fig. 6 is a section on the line *w w* of Fig. 5. Fig. 7 is a section on the line *z z* of Fig. 5. Fig. 8 is a back view of one of the removable jaw-blocks. Fig. 9 is a transverse section of the same.

In the drawings, 2 represents a bar composed, preferably, of two sheet-metal sections riveted together and forming the head and handle of the wrench. Suitable partitions 3 serve to strengthen and stiffen the said handle. At one end of the bar 2 curved fixed jaws 4 are provided with a space between them, and within these jaws are curved plates 5, having recesses 6 in their outer edges to receive the edges of the fixed jaws and secured together by rivets 7. These plates have a rotary movement, and the space between their ends on one side coincides with the space between the ends of the jaws 4.

A series of ratchet-teeth 8 are provided on the periphery of the plates 5, and a series of pawls 9 are pivoted on the fixed jaws 4 and normally held by springs 10 in engagement

with said teeth, preventing movement of the said plates in one direction. It will be noted that I have provided six of these pawls, the object being to have a sufficient number of them, so that when the plates are being revolved past the opening between the jaws there will always be a series of the pawls in contact with the teeth. Between the plates 5 blocks 11 are secured, held firmly by the rivets passing therethrough, and these blocks form a backing for the movable jaws 12 and 13, that are arranged in front of them.

Guides 14 are provided in the plates 5 to receive ribs 15 on said movable jaws and permit them to be adjusted back and forth in front of the blocks 11, according to the size and shape of the article upon which it is desired to use the wrench. The movable jaw 12 is preferably provided with teeth 16, and both movable jaws have lugs 17 at their lower ends, which when the wrench is used on a pipe will prevent it from entering too far between the jaws. These lugs also limit the inward movement of the removable face-blocks 18, that have grooves 19 on one side to permit them to be slipped down over the face of the movable jaws and held thereon by a spring 20.

To actuate the movable jaws, I provide a key 21, pivoted in the head of the wrench and carrying a cross-head 22, that is connected at its ends, respectively, by links 23 with the movable jaws 12 and 13. The turning of the key 21 in one direction will cause a separation of the movable jaws and their movement down the guideways to the position indicated in Fig. 2. Upon moving the key in the opposite direction the jaws will be advanced toward one another to engage the object upon which the wrench is to be used.

When the jaws are in the position shown in Figs. 2 and 5, the wrench-head can be slipped over the middle of the pipe, and when the ratchet-plates are partially revolved, so that the opening between them does not coincide with the opening between the fixed jaws, then the wrench may be used on the end of a pipe or on a nut. The ratchet-plates can be readily set in any desired position by pressure on the movable jaws and the blocks supporting them, and when the plates have been prop-

erly set by the simple manipulation of the key the operator can adjust the movable jaws to clamp the surface of the pipe or nut that is being worked upon. When the jaws have
 5 been clamped on the pipe or nut, the operator grasps the handle and moves it back and forth as any ordinary ratchet-wrench would be operated.

I claim as my invention—

10 1. A wrench comprising a bar having oppositely-arranged fixed jaws with a space between them at the end of said bar, a ring rotatably mounted in said jaws and having a ratchet- and -pawl connection with them,
 15 blocks carried by said ring and having guideways that converge from the inner toward the outer ends of said jaws, and movable jaws slidably mounted in said guideways and having oppositely-arranged gripping-surfaces
 20 that are substantially parallel throughout the travel of said movable jaws, and mechanism for reciprocating said movable jaws, substantially as described.

2. A wrench comprising a bar provided with
 25 jaws having a space between them, a ring having an opening in one side to correspond with the opening between said jaws and adapted to revolve therein and having a series of ratchet-teeth, pawls mounted at intervals in said jaws
 30 and engaging said teeth there being a sufficient number of pawls to allow said ring to be revolved through the space between said jaws without all of the pawls passing out of engagement with said teeth, blocks having
 35 guideways secured in said ring upon each side of the opening therein, movable jaws arranged in said guideways, and mechanism for operating said movable jaws to draw them together or separate them, substantially as described.
 40

3. A wrench comprising a handle and a head having jaws at one end and composed of sheet-metal plates having flanged edges placed one upon the other, and means securing them to-

gether, a space being provided between the
 45 ends of said jaws, a ring having an opening in one side coinciding with the opening between said jaws and composed of sheet-metal plates provided with a series of exteriorly-arranged ratchet-teeth, a series of pawls mounted
 50 in said arms and engaging said teeth, movable blocks mounted in said ring, and mechanism for moving said blocks toward one another or separating them, substantially as described.

4. A wrench comprising a bar having oppositely-arranged fixed jaws at one end with a space between them, movable jaws mounted in guides in said fixed jaws, a key, and links pivotally connecting said key with said movable jaws, for the purpose specified.

5. A wrench comprising a bar having a head at one end provided with jaws having a space between them, a ring having an opening in one side to correspond with the opening between said jaws and adapted to revolve therein, and having a series of ratchet-teeth, pawls mounted at intervals in said jaws and engaging said teeth, and jaws slidably supported in said ring and having parallel faces, and mechanism for moving said jaws toward or from each other their faces remaining in parallel relation, substantially as described.

6. A wrench comprising a bar having fixed oppositely-arranged jaws at one end with a space between them, a ring mounted in said jaws and having a ratchet-and-pawl connection therewith, movable jaws slidably mounted in guideways in said ring, a pivoted key, and links connected with said key and said
 80 movable jaws, for the purpose specified.

In witness whereof I have hereunto set my hand this 18th day of April, 1904.

JOSEPH OFFERMANN.

In presence of—
 RICHARD PAUL,
 M. HAGERTY.