Jan. 6, 1925. 1,522,432

J. H. FONES

WRENCH

Filed June 27, 1923

Fig. 1.

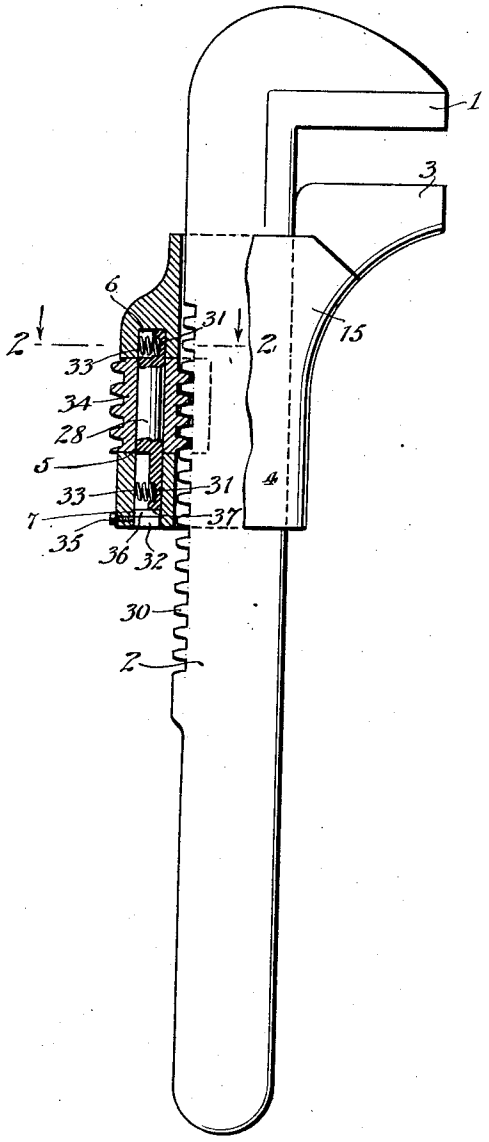


Fig. 2.

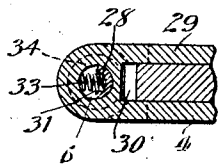
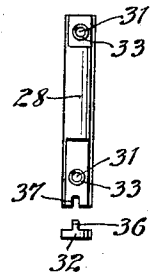


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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WRENCH.

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To all whom it may concern:

Be it known that I, JOHN H. FONES, a citizen of the United States, and a resident of Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to wrenches, such as monkey wrenches or pipe wrenches, in which a slidable jaw is adapted to be adjusted along a handle carrying a fixed jaw, and more particularly to wrenches of this type in which the sliding jaw can be quickly adjusted when desired by sliding it freely upon the handle.

The objects of the invention are to secure an improved construction of such a quick adjustable wrench; to provide in such a wrench a worm rotatable upon a pin fixed against rotation in the sliding jaw, one of said parts being recessed to enable the worm to be moved laterally to disengage the worm from its rack; to avoid cutting ribs and thus simplify and cheapen the construction; to utilize means for holding the pin against rotation for also guiding lateral movement of the worm; to provide means for automatically restoring the worm to operative position in engagement with its rack; to locate the worm at the opposite side of the handle from the jaws, so as to secure a better bearing of the sliding jaw upon the handle under turning strain, and to obtain other advantages and results as may be brought out by the following description.

Referring to the accompanying drawings, in which the same reference characters designate corresponding and like parts,

Figure 1 is a side view of a wrench of my improved construction with the sliding jaw partly in section;

Figure 2 is a fragmentary view in section on the line 2—2 of Figure 1;

Figure 3 is a view in plan of the pin 28 and its co-operating parts showing the pin and its holding key removed from the rest of the structure.

1 represents a fixed jaw projecting from one edge of the handle 2, and 3 indicates an adjustable jaw adapted to co-operate with the fixed jaw 1 and slidably mounted upon the handle 2 by means of a sleeve 4. This sleeve 4 is recessed at its edge away from the jaw, as shown at 5, to receive a worm 34, the latter being tubular in form and mounted upon a pin 28. The worm 34 normally meshes with a rack 30 on the bar 2 and the ends of the pin are projected into a recess 6 in one wall of the recessed portion 5 and in an opening or hole 7 in the other wall of said recessed portion 5. The pin 28 is cut away at its opposite end portions which lie in the sliding jaw 29, at the side of said pin away from the rack 30, the ends so cut away having each a socket 31 in its face in which socket a helical compression spring 33 is seated at each end of the pin 28, so that while said pin is normally held with its worm 34 in engagement with the rack 30 it can be forced laterally to move said worm out of engagement. Since in this construction the springs 33, 33 cannot be depended upon to hold the pin 28 against rotation in its bearings in the slidable jaw 29, I provide other means for doing this which I have illustrated as a plug 32 inserted in the mouth of the hole for the pin in the slidable jaw 29 which is held against rotation by a set screw 35 and has at its inner end a diametric tongue 36 engaging a diametric slot 37 in the end of the pin 28, the plane of said diametric tongue and slot being that of the wrench or in which the axial line of the pin 28 is desired to move to disengage and engage the worm with the rack 30.

Various other modifications in the detail construction may be made by those skilled in the art, in manufacturing my invention, without departing from the spirit and scope thereof, and I do not wish to be understood as limiting myself except as required by the following claims when construed in the light of the prior art.

Having thus described the invention, what I claim is:

1. A wrench, comprising a rack bar having a fixed jaw at one end, and a second jaw through which the rack is movable, said second jaw having a cut-out portion exposing the rack and having aligned recesses in the walls of said cut-out portion, a pin having its ends in said recesses, said pin movable laterally in said recesses, a rack engaging worm on the pin, and a plug removably fixed in the end of one of said recesses and said plug having tongue and groove engagement with the end of the pin to hold the same against turning movement.

2. A wrench, comprising a rack bar having a fixed jaw at one end, and a second

jaw through which the rack is movable, said second jaw having a cut-out portion exposing the rack and having aligned cylindrical recesses in the walls of said cut-out portion, a pin having its ends in said recesses, a rack engaging worm on the pin, said pin at its ends being segmental in shape and of a cross-sectional area less than a semicircle whereby the pin and worm can be moved laterally to disengage the worm from the rack, and a plug removably fixed in the end of one of said recesses and said plug having tongue and groove engagement with the end of the pin to hold the same against turning movement.

JOHN H. FONES.