

UNITED STATES PATENT OFFICE.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 610,553, dated September 13, 1898.

Application filed April 7, 1898. Serial No. 676,773. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. MOORE, a citizen of the United States, residing at Eden, in the county of Erie and State of New York, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to wrenches; and the object is to provide a wrench that is easily adjusted, quickly operated, and does its work thoroughly without injury to the objects to which it is applied; and it consists in providing a handle, preferably of a crank operation, the lower extremity of which is conformed with ears, said ears being so constructed as to enable their being adjustable to a much larger range of nuts than wrenches of the ordinary construction, and pivoted to these ears is an arm or lever, the end of which adjacent to the end of the handle is carried out of line and constructed, with the extremity of the handle, to form an effective mechanism for the purpose of gripping the nut. The arm or lever extends upward, resting against a stud or catch upon the end of a curved yielding notched segment, which is attached to the handle of the device and the upper side of which is provided with notches conformed to receive a catch-pin, which is attached to the arm or lever immediately above the notched edge of the segment. The upper extremity of the arm or lever is reduced to a thumb-piece, and a second thumb-piece, provided with a foot which projects over the upper or notched edge of the segment, is added for the purpose of disengaging the ratchet when it is desired to do so. To hold the arm or lever in place, a spring is interposed between it and the handle of the device, near the lower extremities thereof.

In the accompanying drawings, Figure 1 represents a side elevation of my device embodying my invention, and Fig. 2 is a detail sectional view of the cylinder and cap of the oil-can.

A in the accompanying drawings is the handle of the device, provided at its upper extremity with the breast-piece A', and having the part A² inclined downward, terminat-

ing in the jaw B, adjacent to which are the ears C, which project at right angles to the jaw B, and between which is detachably pivoted the arm or lever D. The lower extremity is bent, as shown, forming the jaw E, which coacts with the jaw B to grip the nut. The ears C are extended somewhat beyond the pivotal point of the arm D, terminating in curvilinear ends C', and are provided upon their under edge with inclined open slots d', d², the arm D being detachably pivoted in said slots by means of headed pins d³ d⁴, formed or cast upon the arm D. The object and advantage of this construction of the ears are such that the jaws can be adjusted to a greater degree of area or range of nuts. The handle A is of the crank form, and at its lower angle is attached the curved yielding notched segment G, which turns upon the pin g and is held in place by the spring i. The notched segment G is provided at its outer extremity with the stud or catch k, against which rests the upper part of the arm or lever D, the arm or lever being forced outward and against the catch k by the spring I, secured between the lever D and handle portion A² a short distance above their point of connection. The upper extremity of the arm or lever D is in the form of a thumb-piece, and pivoted to it upon the side toward the notched segment G is the thumb-piece K, which operates the foot L, that extends over the notched segment G in line therewith. The upper edge of the notched segment G is provided with notches in which fits a catch-pin h. Thus the arm D is held securely at any point upon the notched segment by the catch-pin h, when the jaws B E are separated, and yet may be readily disengaged and permitted to occupy its natural position in contact with the stud or catch k at the outer end of the notched segment.

F is a keeper or guide secured to the outer end of the catch-pin h, which in turn is secured to the lever or arm D at its upper end, which serves as a pivotal bearing for the thumb-piece K and foot L and also as a guide for the notched segment and prevents it from slipping off from the arm or lever D.

N is an oil-can attached to the part A² of the handle by means of lugs n or in any suitable manner. It is preferably of funnel shape,

having at its lower end the hollow cylinder O. This hollow cylinder telescopes with a cap or shorter hollow cylinder P, which has a piece of cork *p* or any other suitable material seated in its lower part, and a rectangular slot Q is cut in said cylinder P, which registers with the lower end of cylinder O and by means of which the quantity of oil from the can and cylinder O is regulated and flows out of the nozzles in said cylinder O and slot in P for lubricating the axle, &c. The cap P has secured to its lower end the lower bent portion of a rod R, which extends upwardly and lies parallel with the part A² of the handle of the device, said rod having a coil *q* formed thereon, within which one or the lower end of a coiled spring R' engages, the opposite end of the spring being secured to a projecting plate S, secured to the top of the oil-can, this rod R near its upper end engaging in an open slot S' in the projecting plate, the extreme upper end of the rod terminating in a coil or button S² in proximity to the grip on the handle. A valve T is secured to the rod about midway its length, which opens and closes an air-vent T', formed in the oil-can near its lower end. Another and larger opening T² is formed in one side of said can, through the medium of which the can is filled with oil, its opening being opened and closed by means of a screw-cap.

The operation of my device will be obvious from the foregoing description taken in connection with the accompanying drawings, but may be briefly rehearsed as follows: The operator takes hold of the handle at A with his right hand as he would a bit-stock and his left hand at A' and places the thumb of his right hand upon the thumb-piece, and pressing down he forces the notched segment back from the catch-pin. Unlocking the lever and pressing the same down opens the jaws, so they grasp the nut. Then take the thumb off and the interposed spring between the lever and part A² of the handle will force the former up until the jaws clasp the nut. The spring located at the lower end of the notched segment will force the same—i. e., the notched segment—against the catch-pin, locking the lever while the nut is being turned off. Then take off the wheel with the left hand, in the meantime having hold of the handle of the wrench at the part A² with the right hand and allow the wrench to hang down, and the thumb of the right hand will naturally come near the thumb-piece or coil of the lubricating-rod of the oil-can. Press on the same and the oil in the can will flow out of the nozzles upon the axle, the vent or small air-hole in the can being opened by the same pres-

sure. The pressure upon the coil or thumb-piece being released, the coiled spring located upon the oil-can rod will at once close the nozzles of the oil-can spout, stopping the flow of oil. The wheel is then put on and the nut replaced, which has been held by the wrench during the operation of oiling. Then place the thumb on the thumb-piece of the lever and release the wrench. To remove the arm or lever to change it from one set of slots to the other, take hold of the lever near its upper end with the right hand and take hold of the jaws with the left from the under side, when it is readily and easily removed.

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

1. In a wrench, the handle provided with the inclined portion A², terminating in the jaw B, and the ears C, the latter extended at right angles thereto beyond the normal position of the lever, and provided with the inclined slots upon its under edge, the free ends of said ears terminating in hooks formed by the outer slots, a detachable lever or arm having its lower end terminating in the jaw E, and provided with headed pins, to take in the said slots, its upper end having a catch-pin, guide or keeper, thumb-piece and foot secured thereto, whereby the jaw of said lever is adjusted relatively to the stationary or opposite jaw on the lower end of the inclined portion of the handle, substantially as described.

2. The combination with the handle having the inclined portion thereof, notched segment, breast-piece and interposed spring between handle and lever; of the jaw B, and ears C, the latter extended at right angles to jaw B, and beyond the normal position of the lever, and provided with the inclined slots upon its under edge, the free ends of said ears terminating in hooks formed by the outer slots, a detachable lever having its lower end terminating in the jaw E, and provided with headed pins to take in said slots, its upper end having a catch-pin, guide or keeper, thumb-piece and foot secured thereto, the oil-can rod provided with the coiled spring near its upper end, and cap or short cylinder having a slot or nozzle therein secured to the lower bent portion of the rod, and a valve secured to said rod for opening and closing the vent in the oil-can, substantially as described.

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

WILLIAM R. MOORE.

Witnesses:

E. H. DAVIS,
J. V. PECK.