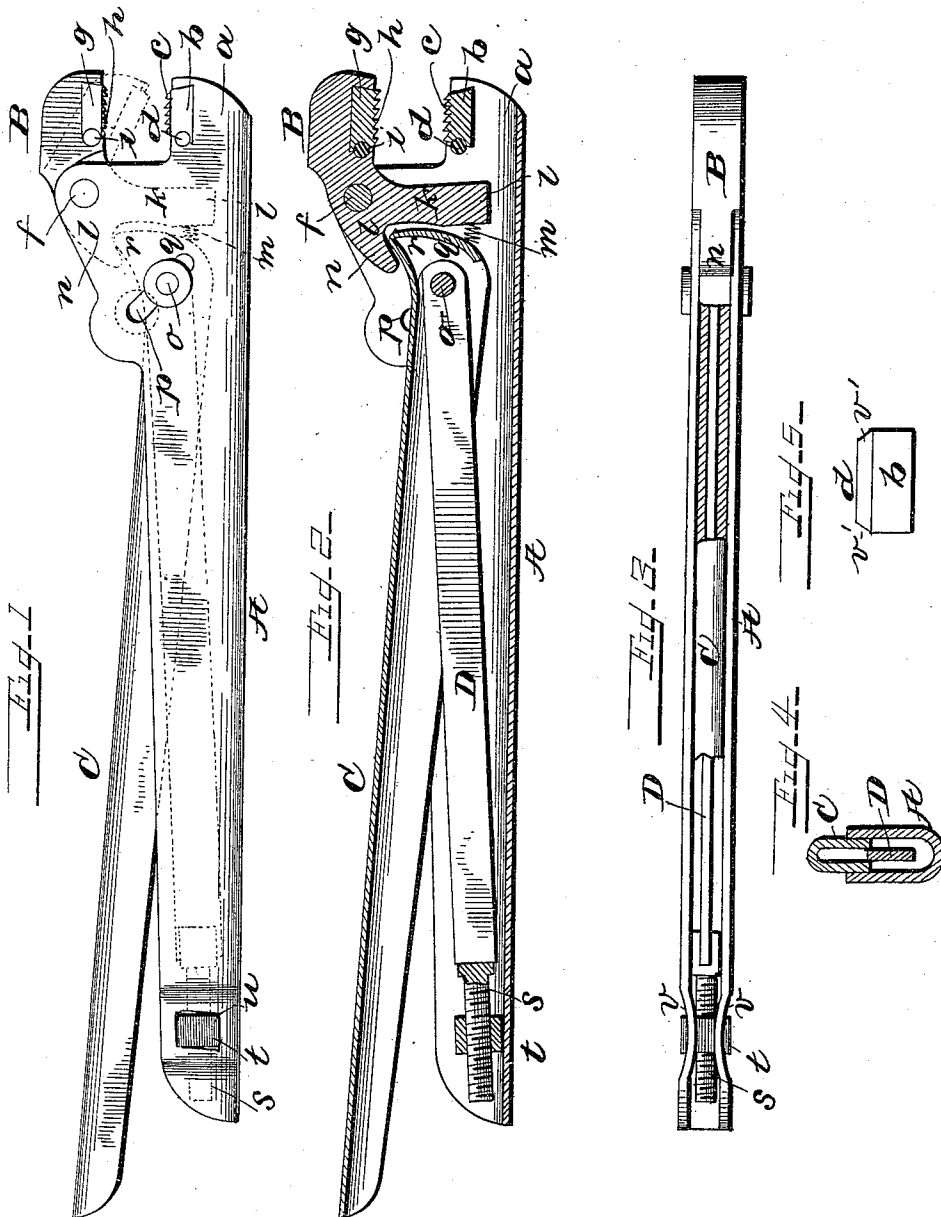


(No Model.)

M. H. McNAIR.
PIPE WRENCH.

No. 449,627.

Patented Mar. 31, 1891.



WITNESSES:

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MILTON H. MCNAIR, OF MEADVILLE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO EDWARD SMITH, OF SAME PLACE.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 449,627, dated March 31, 1891.

Application filed January 26, 1891. Serial No. 379,074. (No model.)

To all whom it may concern:

Be it known that I, MILTON H. MCNAIR, a citizen of the United States, residing at Meadville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Pipe-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 pipe-wrenches, and has for its object certain improvements in construction, which will be hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a side elevation; Fig. 2 a vertical longitudinal section, Fig. 3 a top plan view, Fig. 4 a transverse section on the line *x x*, and Fig. 5 an end view, of one of the toothed blocks inserted in the jaws of the wrench.

Reference being had to the drawings and the letters thereon, A indicates the lower and main lever of the wrench, and is made of sheet metal stamped or otherwise bent U shape in cross-section. At the front end of this lever is formed a jaw *a*, in which is removably secured a block *b*, having a toothed upper surface *c*, and is secured in its seat in the lower jaw by a transverse and removable pin *d*. The front end of the lever A is also provided with an upward extension *e*, in which is pivotally and removably secured a jaw B by means of a removable pin *f*, which extends through both sides of the lever. In this removable jaw B is also removably secured a block *g*, having a toothed surface *h*, and is secured in its seat by a transverse and removable pin *i*. The jaw B is provided with an arm *k* at a right angle to the gripping-surface of the jaw, and in said arm is a pocket *l*, in which is seated a spiral spring *m*. Projecting rearwardly and above the arm *k* is an extension *n*. The upper and compound lever C is also formed of sheet metal stamped or otherwise bent U-shaped in cross-section, and is fulcrumed in the lower or main lever by a transverse pin *o*, which moves in angu-

lar slots *p* in the sides of the lower lever A. The upper lever is provided at its front end with a curved surface *q* and an upward projection *r*, which latter engages with the extension *n* on the movable jaw and places it in engagement with any cylindrical body—such as a tube or pipe—to be held by the wrench.

In the lower or main lever is an adjusting-rod D, attached at its front end to the pin *o* and provided at its rear end with a screw-threaded portion *s*, which engages with a nut *t*, inserted and held against displacement in slots *u* in the sides of the main lever. At the point in the lever A where the nut *u* is inserted the lever is indented on both sides, as *v*, to form recesses to protect the nut against injury from throwing the wrench on any hard substance, which, if the nut were flush with the sides of the lever, would jam the threads on the screw and the nut and prevent the latter from turning. By moving the rod D forward or backward by means of the screw and nut, the position of the pin *o* is changed in the slots *p* and the fulcrum of the lever brought nearer or moved farther from the movable jaw and the space between the jaws increased or diminished to engage with pipe of different diameters.

The spring *m* in the arm *k* rests upon the front and curved end of the lever C and operates to disengage the teeth of block *g* from a pipe or rod automatically and hold them out of engagement therewith while the wrench is being moved upon the pipe or rod to get a fresh "bite" or hold on the pipe, thus diminishing wear on the teeth and preventing mar-ring of the surface of the pipe or rod.

When the upper or compound lever is drawn down it closes over the adjusting-rod D throughout nearly the entire length of the lower lever, as shown in Figs. 1 and 2, thus bringing the levers very close together and easily within the grasp of the hand of a workman, and when the wrench has been applied to a pipe or rod and a bite or hold obtained additional pressure upon the levers does not further embed the teeth in the jaws in the pipe or rod, as the upper lever is allowed to move down into the lower lever by

compressing the spring *m*, and the major portion of the work of turning the pipe is effected by the lower or main lever.

To prevent the teeth on the blocks *b* and *g* against injury by sharp corners engaging with metal, they are cut at an angle on their outer ends *v' v'*, as shown in Fig. 5.

Having thus fully described my invention, what I claim is—

10 1. A pipe-wrench consisting of a main lever formed of sheet metal **U** shape in cross-section and provided with a fixed jaw, a compound lever fulcrumed in the main lever, and a separate movable jaw operated by the latter
15 lever.

2. A wrench consisting of a main lever and a compound lever, both of which are formed of sheet metal bent into shape substantially as shown, and the latter fulcrumed in the former, and a fixed and a movable jaw.
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3. A wrench consisting of a main lever of sheet metal having a jaw and an upward extension at its front end, a movable jaw pivotally secured in said extension, and a compound lever of sheet metal having a movable fulcrum in the main lever.
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4. A wrench consisting of a main lever of sheet metal having a jaw, an extension, and angular slots in the sides of the lever at the front end thereof, a movable jaw pivotally secured to said lever, and a compound lever for operating the jaw, in combination with an adjusting-rod connected to the fulcrum of the compound lever.
30

5. A wrench consisting of a main lever of sheet metal provided with a fixed jaw and having an adjusting-rod incased in the lever, a movable jaw, and a compound lever having an adjustable fulcrum and constructed to close into the main lever and over the adjusting-rod.
35 40

6. A wrench consisting of a sheet-metal

main lever having slots and depressions in its sides at the rear end, a compound lever having an adjustable fulcrum, and a movable jaw, in combination with an adjustable rod provided with a nut projecting through the slots in the sides of the main lever. 45

7. A wrench consisting of a main lever having a fixed jaw formed thereon, a movable jaw having a depending arm, a compound lever for operating the latter jaw, and a resilient body interposed between the compound lever and the arm of the movable jaw. 50

8. A wrench consisting of a main lever having a fixed jaw formed thereon, a movable jaw having a depending arm provided with a pocket, a spring in said pocket, and a compound lever pivotally secured to the main lever. 55

9. A wrench consisting of a main lever having a fixed jaw formed thereon, an adjustable lever having a fixed jaw formed thereon, an adjustable lever within the main lever, and a movable jaw pivotally secured in said lever, in combination with an adjusting-rod also within the main lever and attached to the fulcrum of the compound lever. 60

10. A wrench consisting of a main lever having a fixed jaw thereon, a movable jaw pivoted in said lever and provided with a rearward extension, in combination with a compound lever provided with a curved upward extension. 70

11. A wrench provided with toothed blocks in its jaws, the ends of said teeth being cut away, substantially as and for the purpose set forth. 75

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

MILTON H. MCNAIR.

Witnesses:

W. S. HANSON,
JOHN LAWSON.