

J. E. RICHARDS.
PIPE WRENCH.
APPLICATION FILED JAN. 22, 1908.

937,959.

Patented Oct. 26, 1909.

FIG. 1.

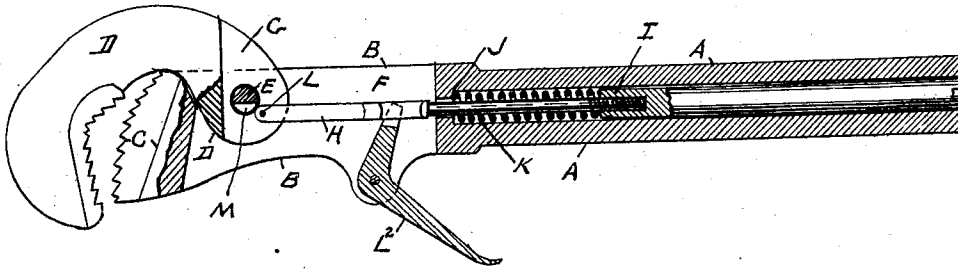


FIG. 2.

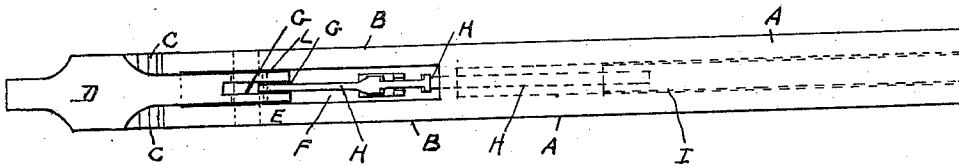


FIG. 3.

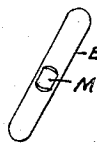


FIG. 4.



FIG. 5.

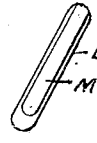
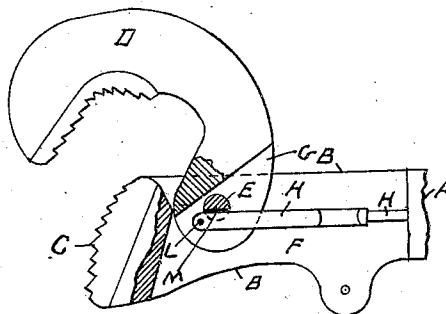


FIG. 6.



WITNESSES.

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JOSEPH E. RICHARDS, OF MELROSE, MASSACHUSETTS.

PIPE-WRENCH.

937,959.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed January 22, 1908. Serial No. 412,198.

To all whom it may concern:

Be it known that I, JOSEPH E. RICHARDS, a citizen of the United States, residing at the town of Melrose, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Pipe-Wrenches, of which the following is a specification.

This invention, more particularly, relates to pipe-wrenches of the class, or character shown and described in U. S. Letters Patent, as follows, to wit: Frances A. Irland, executrix, dated Oct. 3, 1905, No. 800,850; Joseph E. Richards and Charles W. Walker, dated Oct. 15, 1907, No. 868,126; and Joseph E. Richards, dated Oct. 15, 1907, No. 868,127; and it consists, in substance, in an adaptation of the fulcrum-pin of the movable or swinging-jaw of such wrenches or of other wrenches to which it may be applicable, to permit the end-portion of the operating-rod which is pivoted to said movable jaw to pass across and from side to side of the fulcrum-pin, or, in other words, to pass along or parallel with the line of a chord of the circumference and thickness of said fulcrum-pin, as the movable jaw, as well known, is operated or swung on its said fulcrum-pin.

In the accompanying drawings a pipe-wrench having the feature of this invention is illustrated.

Figure 1 is in part a side view and central longitudinal section of a wrench with the invention applied, the wrench otherwise being of the ordinary or any other suitable construction. Fig. 2 is a plan view of Fig. 1. Figs. 3, 4, and 5 are perspective views of fulcrum-pins enlarged and detached as will hereinafter appear. Fig. 6 is a partial side elevation and longitudinal section with the movable jaw opened; it being shown closed in Fig. 1.

In the drawings, A is the tubular-handle and B is the slotted-stock, all in one piece, and having a rigidly attached stationary jaw C.

D is the movable jaw hung on a transverse fulcrum-pin E of and fixed in the stock B. This jaw lies within the longitudinal slot or way F of stock B and it has a vertical slot G in its end, across which the fulcrum-pin E extends.

H is the operating-rod at one end-portion fixed to an adjustable-head I within the tubular handle A, and this rod H within said handle and between said head I, and a

shoulder J of the handle, is surrounded by a coiled-spring K, confined, end to end, between said head and said shoulder. The operating-rod H, at the opposite end-portion to that above referred to, is hung by a pivot-pin L to the movable jaw D and such pivoted end-portion lies within the said slot G of said jaw.

L² is a handle-lever for swinging or moving the movable-jaw against the tension of the said spring K.

So far as described the wrench is well known and all else being proper it is plain the wrench can be used as desired, but under this invention in order that the pivoted end-portion of the operating rod, can pass across and from side to side of the fulcrum-pin E as it is necessary it should do in the operation of the wrench without contact with or friction or rubbing on the fulcrum-pin, said pin is provided with a way M suitable to allow of the same, all as is plain by reference to the drawings. This way M may be in the shape of a groove around the pin, Fig. 4, or of a recess along the line of a chord of the periphery of the pin, Figs. 1 and 3, or of a flattened depression or recess, Fig. 5. This invention is not to be limited in regard to any shape or adaptation of the fulcrum-pin E for the purpose stated.

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

In a wrench of the class described, the combination of a tubular handle A, having at one end a chambered shank B which is in continuation therewith, a stationary jaw C at the end of said shank B which is opposite to its said end in continuation of the handle A, a pivoted or fulcrumed jaw D, having a slot or way G parallel with its side faces, and across which slot the fulcrum-pin E of the movable jaw D extends, and which fulcrum-pin E between the side walls of said slot, has a way M, extending laterally across it from side to side and continuously open between the opposite ends thereof to the periphery of said pin, a pin L extending across said slot G and held in the movable jaw and having its axis parallel to and at one side of and below the axis of said fulcrum-pin E of the movable jaw and also normally in a plane coincident with a plane along the axis of the tubular handle, a continuous straight rod H, at one end hung on said pin L and extending through an open-

ing of greater diameter than its diameter and
which is at the end of the tubular handle
adjacent to the chambered shank B, and also
extending into and along the chamber of
5 said handle, and therein having an enlarged
head or block I which loosely fits said cham-
ber, a coiled spring K encircling said rod
and confined, end to end, thereon between
a shoulder surrounding said opening of
10 greater diameter than the diameter of said
rod and said enlarged head or plug I of the
rod, and means applied to and arranged on

the tubular handle to operate said rod H
against the coiled spring K which surrounds
it, each and all substantially as described 15
and for the purposes specified.

In witness whereof, I have hereunto set
my hand in the presence of two subscribing
witnesses.

JOSEPH E. RICHARDS.

Witnesses:

ALBERT W. BROWN,
MARION E. BROWN.