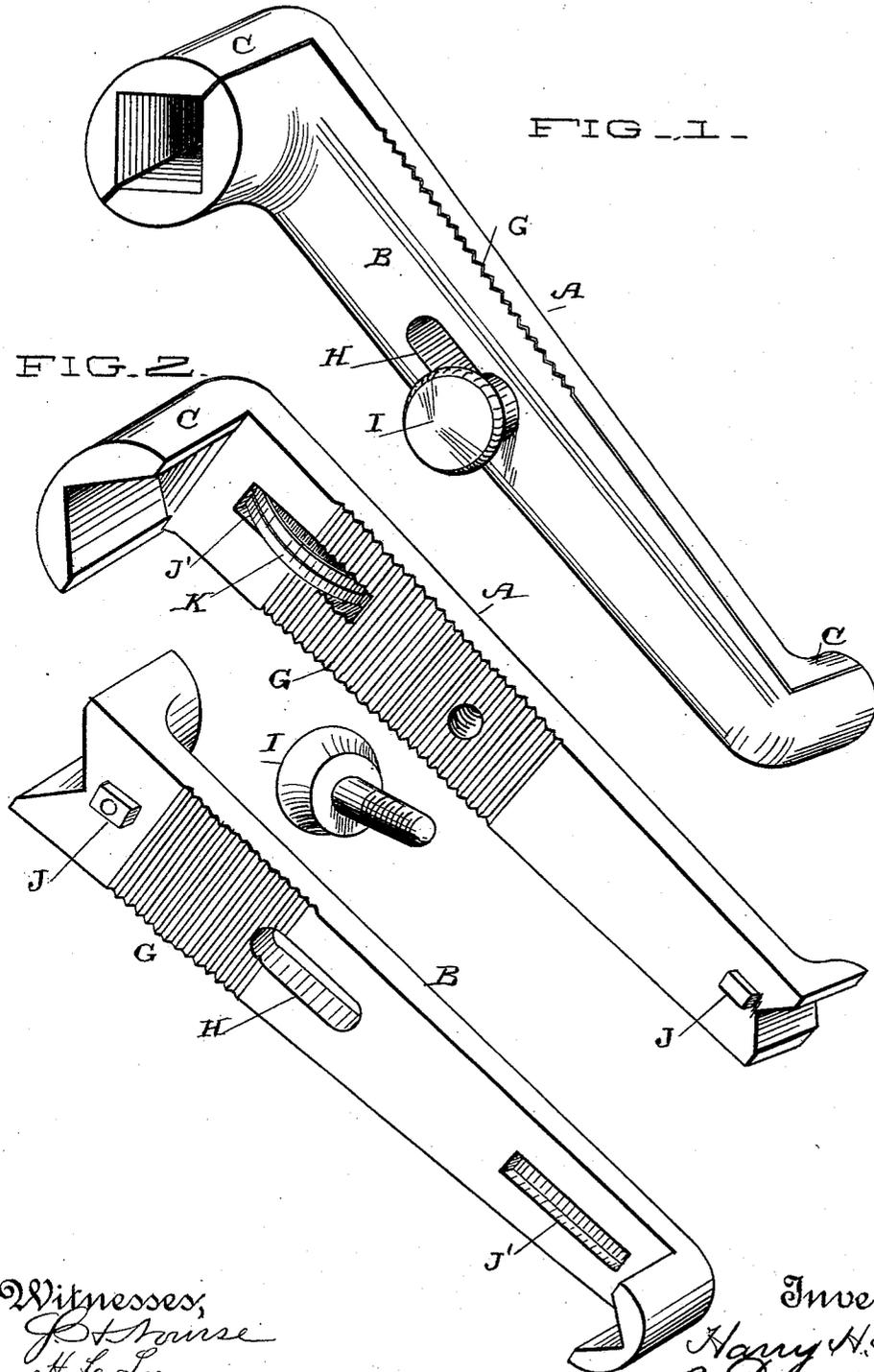


(No Model.)

H. H. LOVE.
WRENCH.

No. 454,219.

Patented June 16, 1891.



Witnesses,
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UNITED STATES PATENT OFFICE.

HARRY H. LOVE, OF SACRAMENTO, CALIFORNIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 454,219, dated June 16, 1891.

Application filed October 24, 1890. Serial No. 369,230. (No model.)

To all whom it may concern:

Be it known that I, HARRY H. LOVE, a citizen of the United States, residing at Sacramento, Sacramento county, State of California, have invented an Improvement in Wrenches; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a novel construction for wrenches, and is especially adapted to what is known as the "socket-wrench."

It consists of two independent bars adapted to slide over each other, each bar carrying one-half of the socket which clasps the nut, a means for locking these plates together at any desired point, so as to form a nut-socket of any size, and in certain details of construction, all of which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is an exterior view of my wrench. Fig. 2 is a view showing the two parts separated from each other.

A and B are two bars made of such shape that when laid together with their flat adjacent sides in contact the outer sides will be rounded and in cross-section will show a suitable shape to be conveniently handled. The ends of the parts A are upturned, as shown at C, and have polygonal notches made in them at right angles with the main portion A, forming one-half of a socket which is adapted to fit the angles of the nut for which the wrench is designed. The part B also has its ends upturned, and similar polygonal channels are made in it corresponding with those in the part A, so that when the two parts A and B are laid together with the upturned ends in contact each end will form a complete socket of any previously-determined shape to fit any form of nut, either square or other form of polygon. The parts A and B are made to slip over each other, so that the upturned ends may be closed up, or they may be separated from each other, so as to enlarge the openings to fit different-sized nuts. In order to hold these parts at a point to suit the size of any nut to be operated on, the adjacent faces of the parts A and B are toothed or serrated, as shown at G, these teeth extending transversely across each face and projecting

so that they may be made to interlock with each other whenever the plates are close together. One of the plates B is slotted longitudinally, as shown, and through this slot H passes the shank of a thumb-screw I. The other piece A has a hole made in it, screw-threaded to receive the correspondingly-threaded end of the thumb-nut, and by screwing the latter down so that the enlarged head presses upon the top of the part B the two are forced closely together, the teeth G interlocking at any point desired, and when these teeth are so interlocked it will be impossible to move the parts of the wrench upon each other, and they will thus be held firmly, so that the sockets at either end of the wrench will be maintained at any desired width of opening.

In order to hold the two parts of the wrench parallel and prevent them turning from side to side, I have shown them provided with studs projecting from their faces, as at J, and the opposite part is slotted at J', so that the stud from one of the parts may project into the slot of the other. I prefer to make one of the studs upon one part and the other stud near the opposite end upon the other part, the slots being correspondingly made in the opposite faces, so as to receive the studs. At a point where the transverse interlocking teeth are fitted to each other I have shown the spring or springs K fitted into a chamber in one of the parts A B, so as to press against the other part, and when the screw which binds the two together is loosened these springs act to force them apart a distance slightly greater than the depth of the interlocking-teeth, and this allows the two parts to slide upon each other freely, as the teeth do not touch each other when the screw has been thus loosened. In this manner it will be seen that the wrench is rapidly and accurately adjusted to fit any form of nut, and by reason of the sockets formed in its opposite ends it may be adapted to fit almost any size that may be desired or that is within its capacity to turn. As it clasps the opposite corners or sides of the nut, it will be manifest that the nut will not be liable to have its corners twisted off or marred by any power that can be applied to the wrench, and as the sock-

ets are turned at right angles with the intervening shank or handle they may be fitted over nuts which are otherwise out of reach.

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

1. In a wrench having two parts adapted to slide one upon the other, a binding-screw for said parts and a spring for separating the parts when the binding-screw is released, substantially as herein described.

2. A wrench consisting of the two-part shank, each portion having one-half the socket made at its opposite ends and standing at right angles with the shank, transverse teeth or corrugations made across the adjacent faces of the two parts, a locking-screw whereby the parts may be clamped together, and a spring or springs whereby they are forced apart when the screw is loosened, substantially as herein described.

3. In a wrench having two parts adapted to slide one upon the other, a binding-screw for uniting said parts, a spring between the

meeting faces of said parts for separating them when the binding-screw is released, and guide-pins and slots on said meeting faces to prevent said parts from turning laterally, substantially as herein described.

4. A wrench consisting of a shank composed of two parts lying one upon the other, ends turned up at right angles upon each of these parts, each having one-half of a nut-receiving socket made in it, transverse grooves or corrugations made upon the adjacent faces of the two parts, a screw by which the two parts may be forced together and the corrugations made to interlock, springs by which they are forced apart when the screw is loosened, and guide-pins and slots in the ends of the device, substantially as herein described.

In witness whereof I have hereunto set my hand.

HARRY H. LOVE.

Witnesses:

HENRY H. FASSETT,

ELLIS KILGORE.