B. F. JOSLYN.

Wrenches.

No. 154,680. Patented Sept. 1, 1874.

FIG. 1.

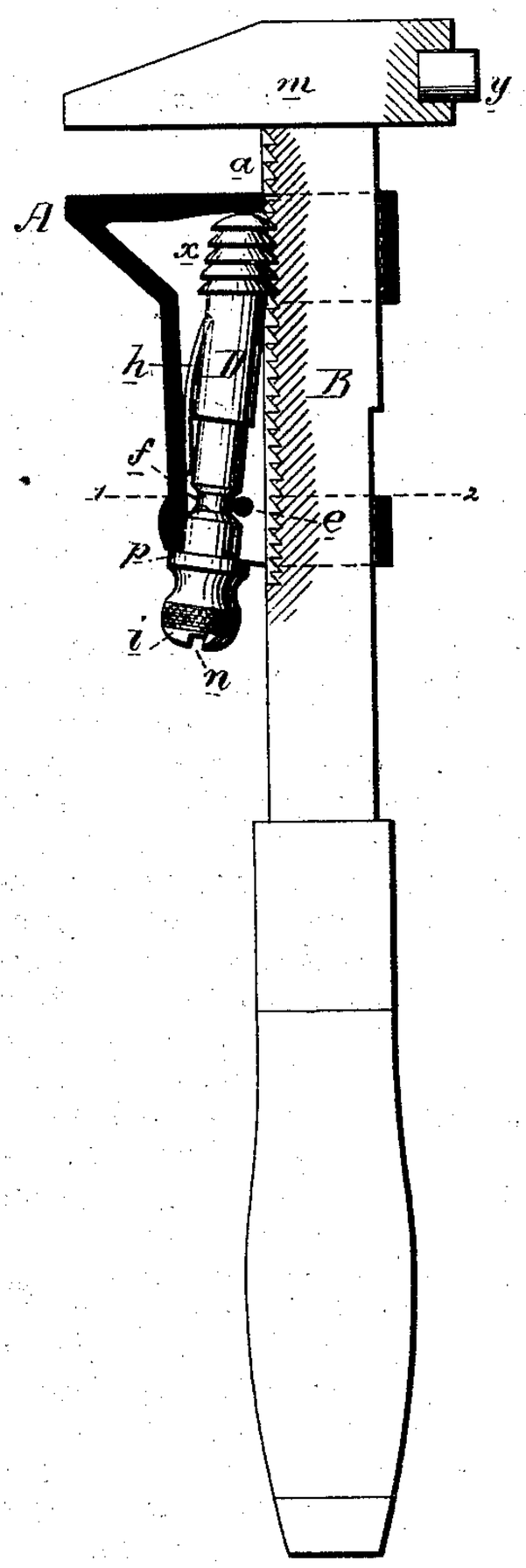


FIG. 2.

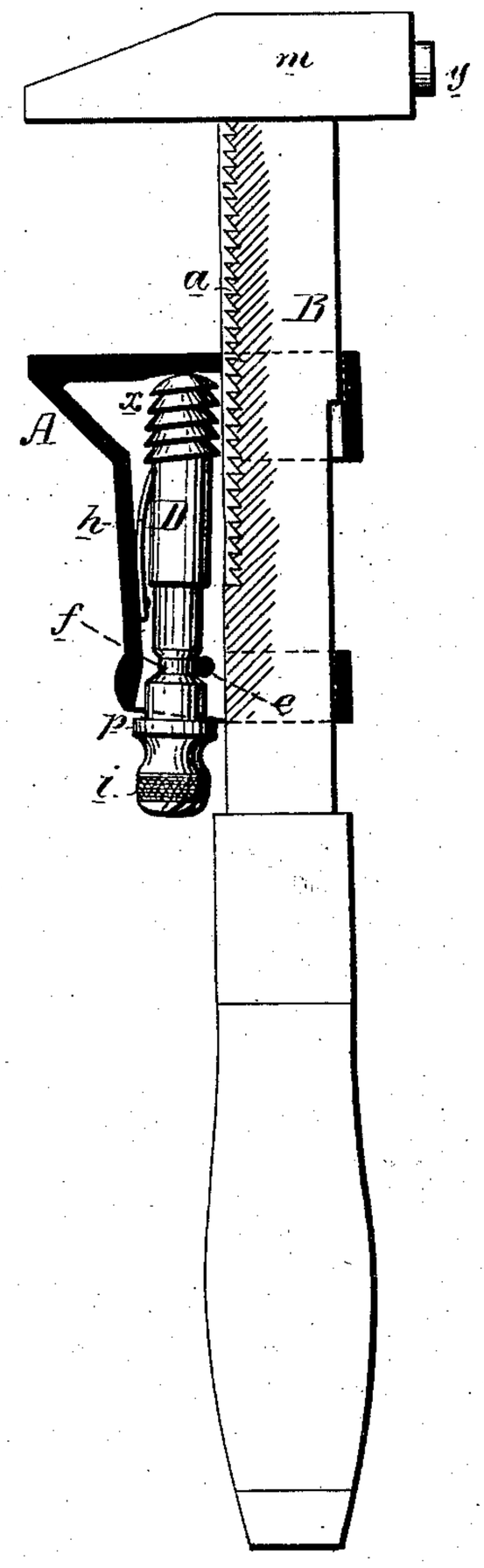
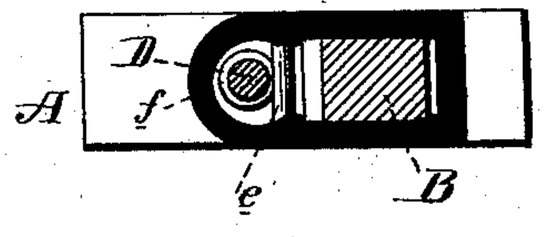


FIG. 3.



Witnesses,
J. Henry Hall
David F. Pannister

Benjamin F. Joslyn

UNITED STATES PATENT OFFICE.

BENJAMIN F. JOSLYN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO RICHARD P. BRUFF, OF NEW YORK CITY.

IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. **154,680**, dated September 1, 1874; application filed January 2, 1784.

To all whom it may concern:

Be it known that I, BENJAMIN F. JOSLYN, of Worcester, county of Worcester, State of Massachusetts, have invented certain Improvements in Wrenches, of which the following is a specification:

The main object of my invention is the adjustment of the movable jaw of a wrench, either by a rapid or by a slow and exact movement, and this object I attain by so combining a worm, *x*, with the jaw A, and with a rack, *a*, on the stem B of the wrench, as shown in Figures 1 and 2 of the accompanying drawings, that the said worm can be thrown out of gear with the rack when it is desirable to move the jaw rapidly from or toward the permanent jaw, and can be thrown into gear with the rack when a slow movement and nice adjustment of the jaw, by turning the worm, is required.

The jaw A is made hollow, and of the form best observed in the sectional plan, Fig. 3, on line 1 2, Fig. 1, and is arranged to slide on the stem B of the wrench in the usual manner. Within the jaw is contained the spindle D, on one end of which is formed the above-mentioned worm or screw *x*, the opposite end projecting through the open rear of the jaw, and having a collar, *p*, for bearing against the end of the same. The spindle has a groove, *f*, to which is adapted a fulcrum-pin, *e*, driven through the jaw, and a spring, *h*, within the latter tends to maintain the spindle in the position shown in Fig. 1, with its worm in gear with the rack. When it is desirable to quickly move the jaw A from or toward the permanent jaw *m*, all that is necessary is for the operator to place his thumb on the serrated knob *i* at the end of the spindle, and press it toward the stem B of the wrench, thereby throwing the worm out of gear with the rack, as shown in Fig. 2, and permitting the jaw to be moved in any direction desired. When a delicate adjustment of the jaw is required the spindle should be permitted to assume the position shown in Fig. 1, where the worm is in gear with the rack, and the spindle, which has its bearings in the rear of the jaw, can be turned by manipulating its serrated knob.

It will be observed that as the rounded end of the spindle bears against the inside of the jaw, and that as the thread of the worm or screw *x* is beveled on one side and abrupt on the other, the teeth of the rack being of corresponding shape, the strain to which the jaw is subjected must be transmitted through the worm directly to the abrupt sides of the teeth of the rack, and hence, that there can be no tendency of this strain to throw the worm out of gear.

When it is desirable to confine any object securely between the jaws of the wrench, the movable jaw may first be adjusted against the object, and then the spindle may be turned by means of a screw-driver applied to the slot *n* in the serrated knob *i*, or the latter may be otherwise formed to receive a wrench or other instrument by which the necessary power may be applied to turn the spindle, with sufficient effect to confine the object between the jaws.

The deterioration of screw-wrenches is attributable more to their reckless use as hammers than to any other source, for the jars caused by bringing the permanent jaw *m* in violent contact with rigid objects have a destructive effect on the wrench. In order to obviate this evil I bore in that part of the permanent jaw which is generally used as the head of a hammer a recess for the reception of a block, *y*, of softer material than that of the jaw. The block, for instance, may be made of hard wood, brass, copper, or white metal, materials sufficiently hard to strike against any object which it is proper to strike with a screw-wrench, and soft enough to prevent any deteriorating jars.

I claim as my invention—

The combination of the stem B of the wrench, and its teeth *a*, with the worm-spindle D, retained in place by the fulcrum-pin *e*, and having a knob, *i*, projecting from the jaw, the working parts being inclosed within the movable jaw, all as set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

BENJAMIN F. JOSLYN.

Witnesses:

J. HENRY HILL,

DAVID F. PARMENTER.