

No. 685,273.

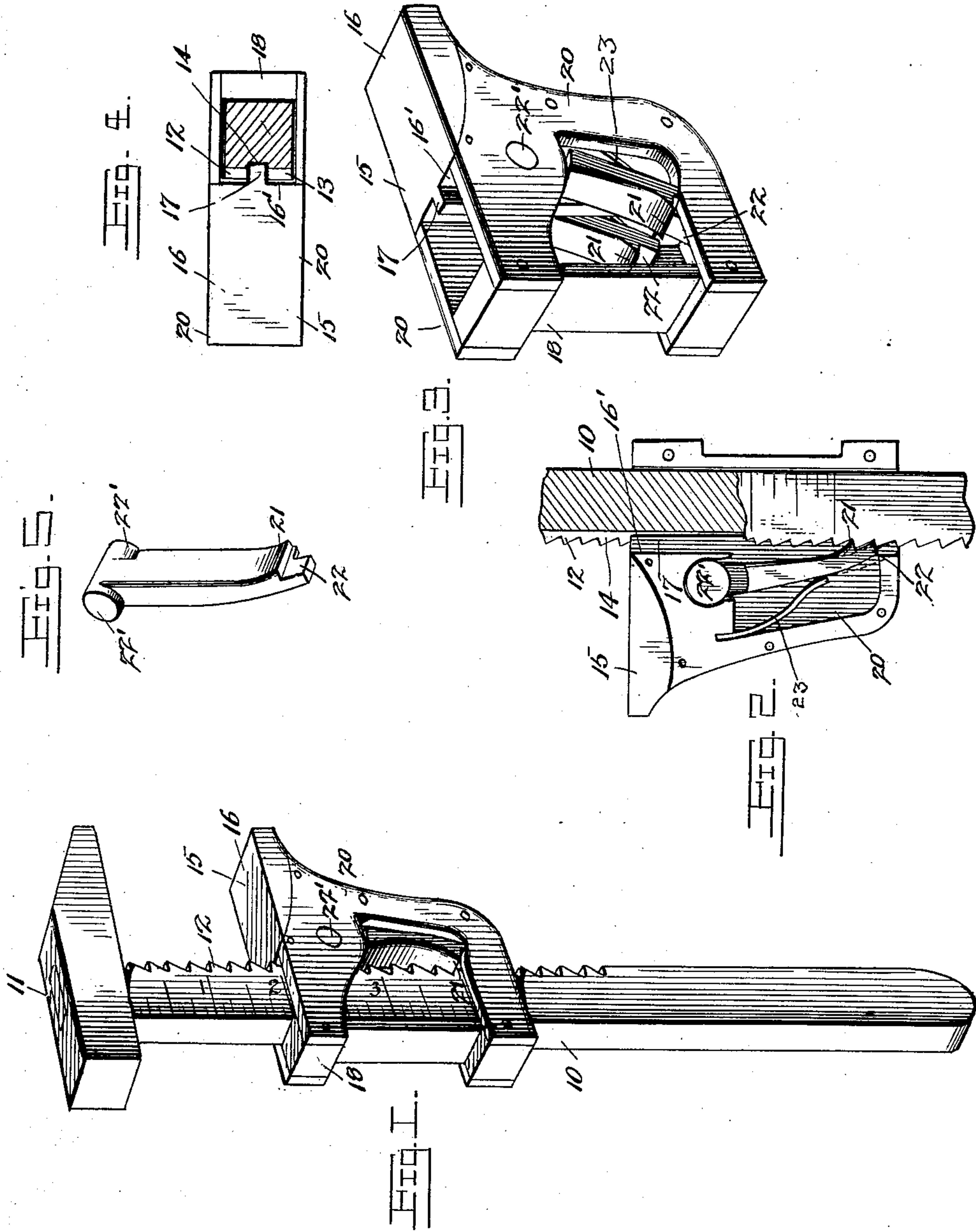
Patented Oct. 29, 1901.

J. W. GRUBBS.

WRENCH.

(Application filed Apr. 5, 1901.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH W. GRUBBS, OF CARTERVILLE, MISSOURI.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 685,273, dated October 29, 1901.

Application filed April 5, 1901. Serial No. 54,531. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH W. GRUBBS, a citizen of the United States, residing at Carterville, in the county of Jasper and State of Missouri, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to wrenches of the adjustable variety; and it has for its object to provide a simple and efficient construction in which a delicate adjustment may be obtained through the medium of pawls and ratchets and in which the adjustable jaw will be held most firmly in position.

A further object of the invention is to save the teeth of the ratchets from the usual wear incident to the sliding of the movable jaw thereover, and also to provide a construction in which the pawls may be easily lifted from the ratchets to permit of return movement of the jaw, other objects and advantages of the invention relating to specific details, all of which will be understood from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a perspective view showing the wrench with the jaws in open position. Fig. 2 is an elevation showing the side of the movable jaw with its side plate removed, a portion of the stem of the wrench with its ratchets being shown partly in section and partly in elevation. Fig. 3 is a detail perspective view showing the adjustable jaw removed from the stem of the wrench. Fig. 4 is a transverse section through the stem of the wrench and showing the movable jaw in top plan view. Fig. 5 is a perspective view showing one of the double toothed pawls.

Referring now to the drawings, there is shown a wrench including a stem 10, provided with a head 11, fixed at one end, and which stem on one face and adjacent to the head is provided with two racks 12 and 13, separated by a groove 14, formed longitudinally of the stem.

The movable jaw of the wrench consists of a block 15, having an upper flat face 16, adapted to lie at right angles to the stem 10, and from which upper gripping-face there depends a portion 16', the side faces of which

are recessed to form a web 17 for engagement with the groove 14 of the stem, this web acting to hold the portion 16' out of contact with the ratchet-teeth as the jaw is slid along the stem.

The back of the movable jaw is formed by a plate 18, disposed against the rear face of the stem 10, and which lies with its edges between the side plates 20 of the jaw, these side plates being riveted or otherwise secured to the side faces of the portion 16' and to the plate 18, so that there is formed a boxing in which the stem of the wrench is slidably received, so that the jaws may be adjusted toward and away from each other.

The side plates 20 are of substantially U shape, as shown, the ends of the leg portions being the parts connected to the plate 18, and through the cut-away or open portions of these side plates are exposed the retaining-pawls. Each of the retaining-pawls, of which there are two, consists of a finger which is notched at one end to form two teeth 21 and 22, and at the opposite end is formed a transverse cylindrical head, forming the trunnions 22. One of the pawls is disposed at each side of the web 17 and between it and the adjacent side plate of the head, and the trunnions of the pawl are disposed in bearings formed in said side plate and in the web 17. These pawls, as shown, are disposed each in operative relation to one of the racks of the wrench, and when the movable jaw is moved in the direction of the fixed jaw the pawls, under the stress of the springs 23, snap over the ratchets or racks, and the two teeth of each pawl engage with two teeth of the rack, one of the pawls being slightly shorter than the other, so that they may alternately engage the teeth of their respective racks, and the movable jaw may be thus adjusted to the extent of half a rack-tooth, the pawls being alternately operative.

When the slidable jaw is to be moved from the fixed jaw, the pawls are grasped through the openings in the side plates and are raised from the racks.

In practice modifications of the specific construction may be made and any suitable materials and proportions may be used without departing from the spirit of the invention. It will be noted that not only do the ends of the

heads of the pawls have bearings in the web and plate, but the entire upper portion of the head between its ends has a continuous bearing in the recess or socket in the block that
5 forms the movable jaw between the web and plate. This construction of course greatly strengthens the structure. Furthermore, it will be understood that in practice a handle of any suitable material may be placed upon
10 the stem of the wrench. It is of course not essential that the pawls be arranged to engage the racks alternately, as they may be disposed to engage them simultaneously.

What is claimed is—

15 A wrench comprising a jaw-bearing shank having one of its faces provided with racks separated by a longitudinal groove, a movable jaw slidably connected with the shank and comprising a web to engage the groove,
20 skeleton side plates to bear against the sides

of the shank, and a back plate to bear against the back of the shank, the plates and web being provided with alined bearings, spring-pressed pawls, wholly housed within the movable jaw and disposed on each side of the
25 web, and having trunnions at their upper ends to engage the bearings and teeth at their lower ends to engage the racks, access to the pawls to throw the same out of engagement with the racks being had through the open-
30 ings in the side plates, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH W. GRUBBS.

Witnesses:

HENRY C. ERWIN,

ROMA. THOMPSON.