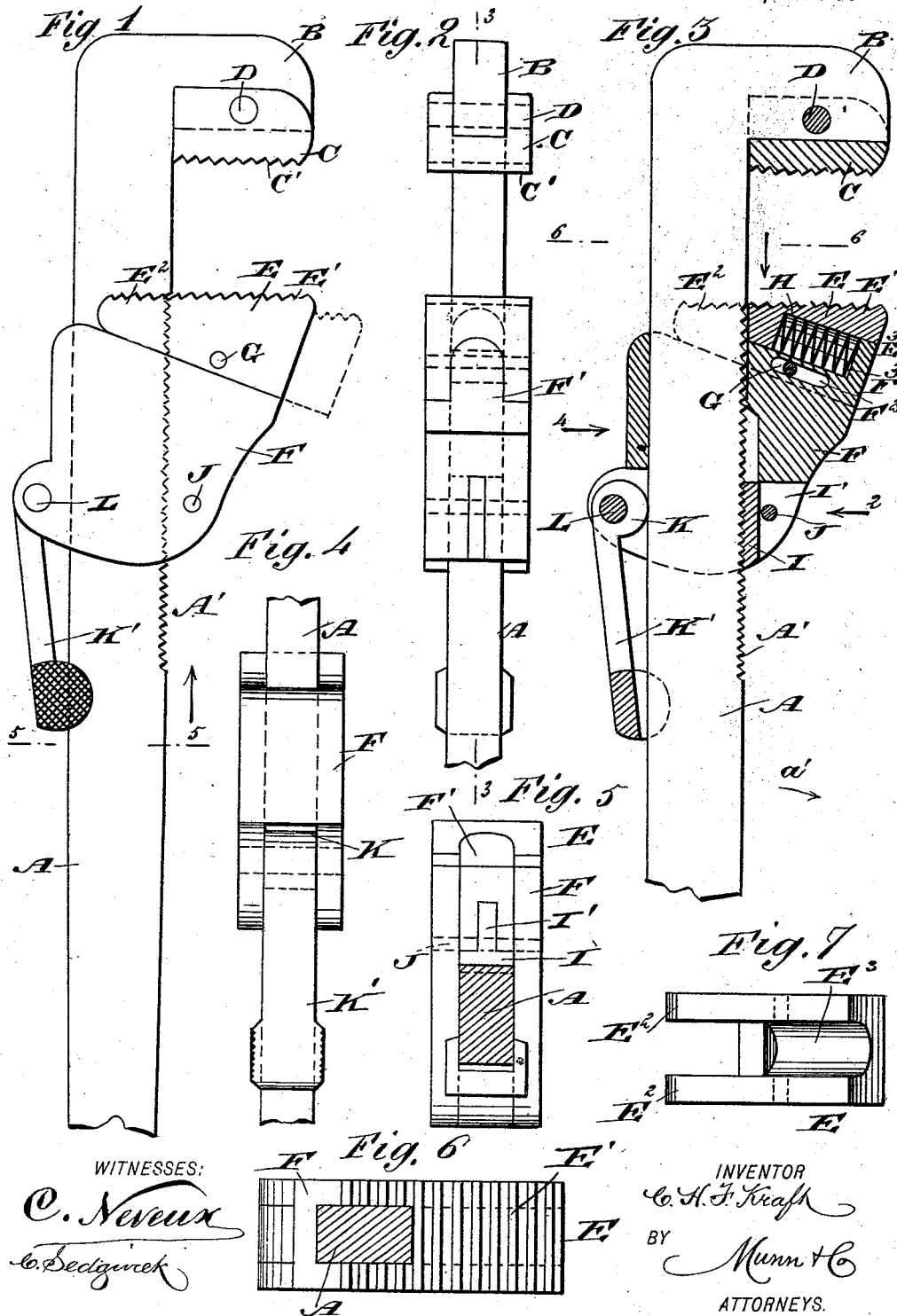


(No Model.)

C. H. F. KRAFT.
WRENCH.

No. 491,056.

Patented Jan. 31, 1893.



UNITED STATES PATENT OFFICE.

CHARLES H. F. KRAFT, OF BATTLE CREEK, MICHIGAN.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 491,056, dated January 31, 1893.

Application filed August 26, 1892. Serial No. 444,189. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. F. KRAFT, of Battle Creek, in the county of Calhoun and State of Michigan, have invented a new and Improved Wrench, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved wrench which is simple and durable in construction, more especially designed for use as a pipe wrench and arranged to quickly and conveniently adjust the jaws for different sized work.

The invention consists of certain parts and details, and combinations of the same, as will be hereinafter described and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement; Fig. 2 is a front edge view of the same, looking in the direction of the arrow 2 in Fig. 3; Fig. 3 is a sectional side elevation of the same on the line 3—3 of Fig. 2; Fig. 4 is a rear edge view of part of the improvement looking in the direction of the arrow 4 in Fig. 3; Fig. 5 is a transverse section of the improvement on the line 5—5 of Fig. 1; Fig. 6 is a similar view of the same on the line 6—6 of Fig. 3; and Fig. 7 is an end view of the movable jaw.

The improved wrench is provided with a straight handle A, on one end of which is formed a projection B carrying a fixed jaw C, preferably made U-shaped and engaged at its ends by the transversely-extending pin D held in the projection B. The under face C' of the jaw C is provided with a serration so as to readily engage the article to be operated on. Opposite this jaw C is arranged a movable jaw E, provided with a serrated face E' and mounted to slide on a tongue F' of a head F held longitudinally-adjustable on the wrench handle A and adapted to be locked thereon, as hereinafter more fully described.

The jaw E is wedge-shaped, and is fitted to slide on the inclined tongue F' of the head F, so that the jaw in moving it in or out in its guideways, moves nearer to or farther from the fixed jaw C. In order to hold the jaw E in place a pin G is provided, held transversely in the sides of the jaw and engaging a slot F²

formed in the tongue F' of the head F. In the front face of the tongue F' of the head F is formed a recess F³ and a similar recess E³ is formed in the under side of the jaw E, the said two recesses F³ and E³ registering with each other and containing a spring H, which serves to hold the jaw E in an innermost position, that is, the lower end of the jaw resting on the side edge of the handle A. As illustrated in the drawings, the jaw is formed on its sides with extensions E² which straddle the sides of the handle A so as to prevent the jaw from wobbling when the wrench is applied.

In order to lock the head F in place on the handle A the latter is provided at one edge with teeth A' adapted to be engaged by a toothed dog I formed with a tongue I' engaging a correspondingly-shaped slot in the lower end of the head F. A pin J extends transversely through the head F and engages the tongue I', so as to hold the dog I in position on the head F. On the opposite edge of the teeth A' of the handle A operates an eccentric cam K mounted on a pin L supported in lugs projecting from the head F. A handle K' is formed on the eccentric K, to conveniently manipulate the said eccentric so as to move the latter with more or less force in contact with the outer edge of the wrench handle A, to draw the teeth of the plate I into engagement with the teeth A' of the wrench handle so as to lock the head F in position on the handle.

When the handle K' is swung away from the wrench handle A, then the dog I hangs loose and is free to disengage the teeth A' so that the head F carrying the jaw E can be readily moved along the handle A.

The operation is as follows: The handle K' having been swung away from the wrench handle to permit the head F to be moved freely along the said handle, the jaw E is pulled outward as shown in dotted lines Fig. 1, thereby widening the space between the two jaws, and then the head F is moved forward until the jaw E comes in contact with the object to be gripped, when the head is locked in position by closing the handle K' against the handle of the wrench, and the jaw E released. Now when the parts are in the position above described and the handle A is

moved in the direction of the arrow a' , Fig. 3, the spring H and the inclined surface upon which the jaw E slides, will tend to move the said jaw inwardly so that the article will be
5 firmly and securely grasped. When it is desired to release the article grasped then the handle A is moved in the inverse direction of the arrow a' , so that the jaw E slides outwardly and consequently away from the fixed
10 jaw C thus readily releasing the pipe or other article grasped.

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

15 1. In a wrench, the combination with a handle having a fixed jaw, of a movable head on the handle and having an outwardly inclined tongue on its upper surface, a wedge shaped jaw sliding on the said tongue and connected

therewith by a pin and slot connection a 20 spring for pressing the jaw inward, and means for locking the head on the handle, substantially as described.

2. In a wrench, the combination with a handle having a fixed jaw, of a head movable on 25 the handle and having an outwardly inclined and slotted tongue on its upper surface, a pin secured in the jaw and passing through the slot of the tongue, a spring secured in a recess of the jaw and head for forcing the jaw 30 inwardly, and means for locking the head to the handle, substantially as herein shown and described.

CHAS. H. F. KRAFT.

Witnesses:

MILO C. HOARD,
EVERETT ANNIS.