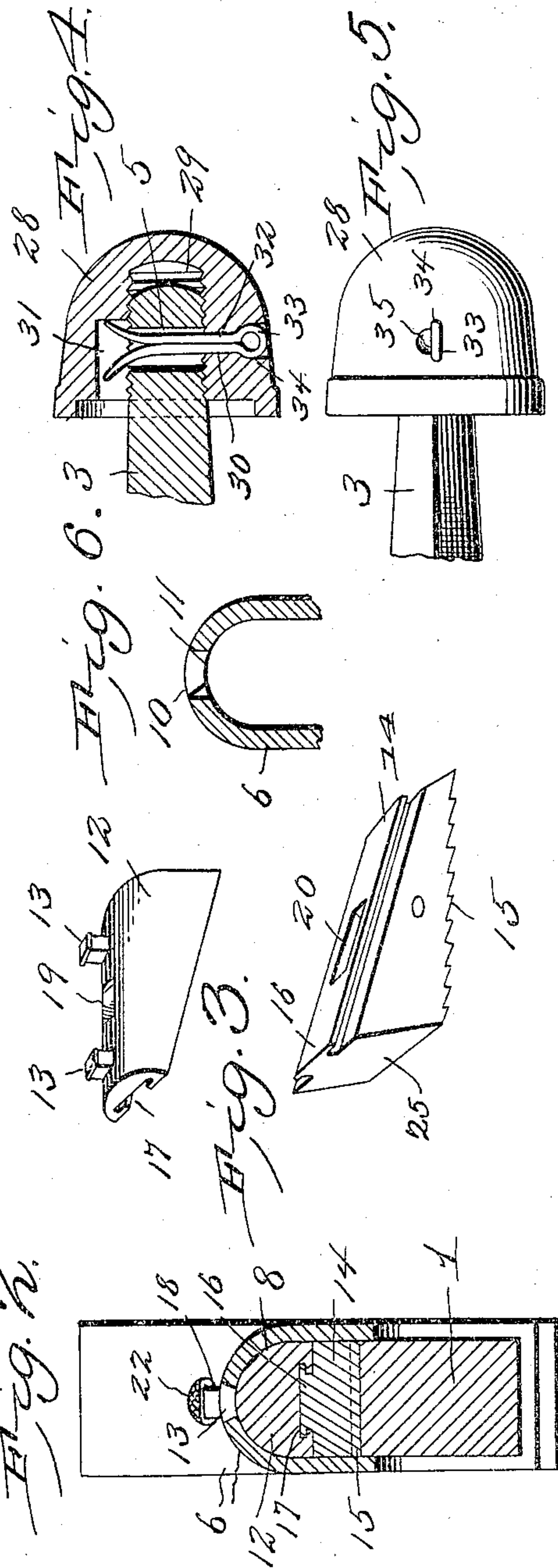
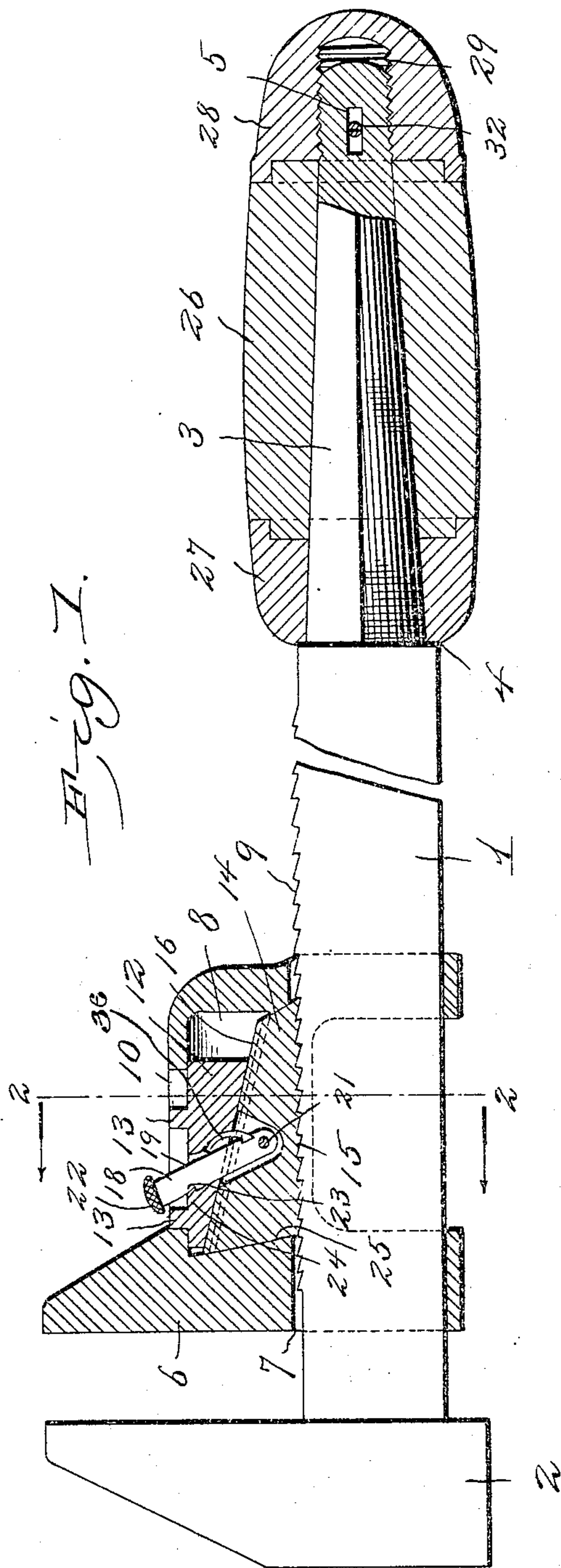


S. B. HOUSE.
WRENCH.

APPLICATION FILED AUG. 26, 1904



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UNITED STATES PATENT OFFICE.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 792,213, dated June 13, 1905.

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To all whom it may concern:

Be it known that I, SIDNEY BOWLING HOUSE, a citizen of the United States, residing at Chatsworth, in the county of Los Angeles and State of California, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to wrenches, and has for its object to provide for conveniently adjusting the slidable jaws of such devices and to prevent collapsing thereof when removed from the work.

Another object of the invention is to provide for positively moving the jaw-locking member into and out of engagement with the shank of the wrench, so as to insure a prompt and effective locking of the jaw and also a quick release thereof from the shank or stock of the wrench.

A still further object of the invention is to facilitate the assembling of the locking parts within the slidable jaw, so as to be housed thereby, and also to provide for the convenient removal of the slidable jaw to permit removal of the locking parts for repairs.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a sectional elevation of a wrench embodying the features of the present invention. Fig. 2 is a cross-sectional view on the line 2 2 of Fig. 1. Fig. 3 is a detail perspective view of the wedge members removed. Fig. 4 is a detail sectional view taken through the adjustable ferrule and the handle. Fig. 5 is a side elevation of the adjustable ferrule. Fig. 6 is a detail cross-sectional view taken through the slotted part of the slidable jaw.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

The present wrench includes a shank or stock 1 of polygonal form in cross-section, preferably rectangular, with one end terminating in a fixed jaw 2 of common or approved form and its opposite end being reduced and tapered to form a stem 3 and an annular shoulder 4. The outer extremity of the stem is threaded and provided with a transverse slot or opening 5.

The slidable jaw 6 has an opening or guide-way 7 for the reception of the stock and to permit slidable movements of the jaw thereon and is also made hollow, so as to produce a chamber or socket 8, which exposes the toothed portion 9 of the stock to the jaw-locking means, which is housed within the slidable jaw. A dovetailed slot 10 is formed longitudinally in the front of the slidable jaw, so as to communicate with the interior thereof, and kerfs or notches 11 are formed in the walls of the slot.

Within the chamber of the slidable jaw there is a wedge member 12, which has its inclined face toward the stock, and its opposite face is provided with a pair of dovetailed projections 13, slidably mounted in the slot 10 of the slidable jaw and capable of being inserted and removed through the kerfs or notches 11 of the slot. By this arrangement the wedge is capable of being slid back and forth in substantial parallelism with the stock. Between the wedge member 12 and the stock there is a locking-wedge member 14, having its inclined face working against the inclined face of the adjusting-wedge member 12 and its opposite face provided with teeth 15 to engage the toothed portion of the stock. These members have a slidable connection, consisting of a dovetailed tongue 16, upon the member 14, fitting in a dovetailed groove 17 in the member 12, whereby a slidable movement of the adjusting-wedge member 12 operates to move the locking-wedge member 14 toward and away from the stock, so as to grip the member 14 against the stock and also to release said member from the stock.

For convenience in adjusting the wedge member 12 there is an adjusting-lever 18, which works in a slot or opening 19 in said member, with its inner end seated in a socket

20, formed in the locking-wedge member 14 and fulcrumed therein upon a pin 21, which is set transversely through the member and the lever. The outer end of the lever projects through the slot 10 in the slidable jaw and is provided with a head or finger-piece 22, which is milled or serrated so as to prevent slipping of the thumb or finger thereon. By moving the lever in either direction the adjusting-wedge 12 will be moved therewith in parallelism with the stock, thereby moving the locking-wedge 14 laterally toward or away from the stock to either engage therewith or disengage therefrom. It will of course be understood that the socket 20 is of a size and shape to prevent binding of the lever therein, and the lever engages opposite wall portions of the slot or opening 19, so as to move the wedge 12 therewith. Near the outer end of the lever and in the front face thereof there is a notch or seat 23, which is designed to engage beneath a projection 24, formed on the front wall of the opening 19, so as to lock the lever against accidental movement and consequent releasing of the locking-wedge member when the lever is at its forward limit and the slidable jaw locked against the stock.

An important feature of the invention resides in beveling the front end of the locking-wedge, as at 25, and giving the front wall of the chamber 8 a corresponding bevel, the locking member being held snugly within the chamber, so as not to move therein, whereby when the wedge begins to engage the teeth of the stock the subsequent lateral movement of the wedge toward the stock draws the beveled end of the wedge across the beveled end wall of the chamber 8, and thereby slides the jaw forwardly independently of the wedge, so as to obtain a firm grip upon the work.

It will of course be understood that the jaw-locking parts are fitted in place prior to the placing of the slidable jaw upon the stock, and to permit of the application and removal of the jaw I employ a removable handle consisting of a tubular wooden grip 26, having a polygonal bore to fit the polygonal stem 3, and thereby prevented from turning thereon, the terminals of the grip being externally cylindrical and fitted in circular sockets in the inner and outer ferrules 27 and 28. The inner ferrule engages the shoulder 4, and the outer ferrule has a threaded socket 29 to receive the threaded terminal of the stem. The inner ferrule fits snugly the polygonal stem and is thereby held against turning, while the outer ferrule is rotatable upon the threaded stem portion, so as to bind the grip 26 between the two ferrules. The outer ferrule has a transverse opening 30 intersecting one side of the threaded socket for alinement with the opening 5 of the stem and is also provided with an enlarged recess 31 opposite the opening 30, there being a split spring-pin 32

passed through the opening 30 and the slot 5, with its ends spread and received in the recess 31, the head or eye 33 at the outer end of the pin or key being received in a recess or seat 34, formed in the exterior of the ferrule at the outer end of the opening 30, so as not to offer any projection upon the exterior of the handle. A groove 35 communicates with one side of the seat 34 for the reception of a nail or suitable implement to engage the eye or head 33 of the pin or key 32 whenever it is desired to remove the key to permit of the handle being removed.

It is proposed to yieldably maintain the lever 18 at its forward limit by means of a bowed spring 36, connected at one end to the back of the lever with its free end portion working against the rear wall of the opening 19, thereby to maintain the notch 23 in engagement with the projection 24 and at the same time to permit of the lever being pressed back out of engagement with the projection when it is desired to move the wedge for releasing the slidable jaw.

From the foregoing description it is apparent that the present invention provides simple and effective means for conveniently adjusting the slidable jaw and that said means is housed within the slidable jaw so as to be protected. Moreover, by reason of the lateral movement of the locking-wedge 14 the latter is quickly and positively moved into and out of engagement with the stock, thereby to insure a prompt and effective locking and releasing of the slidable jaw. The finger-piece of the controlling-lever is located for convenient access and at the same time is protected by the nose of the slidable jaw from being accidentally moved.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. A wrench comprising a stock, a fixed jaw thereon, a slidable jaw upon the stock, a locking-wedge member held against endwise movement upon the slidable jaw and capable of lateral movement into and out of engagement with the stock, a slidable adjusting-wedge member having a slidable dovetailed tongue-and-groove connection with the slidable jaw and also with the locking-wedge member, and a controlling-lever fulcrumed upon the locking member and working in alined openings in the adjusting-wedge and the slidable jaw, said lever being accessible at the exterior of the jaw.

2. A wrench comprising a stock having a fixed jaw, a slidable jaw mounted upon the stock and provided with a chamber exposing the stock and also having a longitudinal dovetailed slot in its outer side, a locking-wedge held against endwise movement within the chamber and capable of lateral movement toward and away from the stock, an endwise-movable adjusting-wedge having a dovetailed

tongue-and-groove connection with the locking-wedge and having a dovetailed projection working in the slot of the slidable jaw, and a controlling-lever fulcrumed upon the locking-wedge and projected through an opening in the adjusting-wedge and also through the slot, the outer end of the lever being accessible at the exterior of the jaw.

3. A wrench comprising a stock having a fixed jaw, a slidable jaw upon the stock and provided with a chamber exposing the stock and also provided with a longitudinal dovetailed slot having corresponding kerfs in its opposite walls, a locking-wedge held against endwise movement within the chamber and capable of lateral movement into and out of engagement with the stock, an endwise-slidable adjusting-wedge having a dovetailed tongue-and-groove slidable connection with the locking-wedge and provided with dovetailed projections working in the dovetailed slot and insertible and removable through the kerfs in the walls of the slot, and means for sliding the adjusting-wedge upon the locking-wedge and the jaw.

4. A wrench comprising a stock having a fixed jaw, a slidable jaw upon the stock, a locking-wedge upon the slidable jaw capable of a lateral movement into and out of engagement with the stock, a slidable adjusting-wedge having a slidable connection with the slidable jaw and a slidable dovetailed tongue-and-groove connection with the locking-wedge, and a controlling-lever fulcrumed upon the locking-wedge and projected through openings in the adjusting-wedge and the slidable jaw and provided with a socket and projection locking engagement with the adjusting-wedge at the locked limit thereof.

5. A wrench comprising a stock having a slidable jaw and also provided with ratchet-teeth, a locking member carried by the slidable jaw and provided with teeth for engagement with the teeth of the stock, and means for moving the locking member toward and away from the stock to engage and disengage the same, said locking member having a beveled end cooperating with a beveled portion of the slidable jaw to shift the latter toward the fixed jaw during the engagement of the teeth of the locking member and the stock.

6. A wrench comprising a stock having ratchet-teeth and a fixed jaw, a slidable jaw mounted upon the stock and provided with a chamber exposing the teeth of the stock, a locking member mounted within the chamber and provided with teeth for engagement with the teeth of the stock, and means for moving the locking member laterally into and out of engagement with the stock, one end of the

locking member being beveled and in cooperative relation with the adjacent beveled end of the chamber to shift the slidable jaw toward the fixed jaw during the engagement of the teeth of the locking member with those of the stock.

7. In a wrench, the combination of a stock terminating at one end in a fixed jaw and at its other end in a reduced shank, a slidable jaw mounted upon the stock and capable of being removed at the shank end of the stock, a non-rotatable ferrule removably embracing the shank at the inner end thereof, a hand-grip removably embracing the shank and engaging the inner ferrule, the outer end of the shank being threaded and provided with a transverse opening, an outer ferrule having a threaded socket to receive the threaded end of the shank, said outer ferrule having an opening piercing one side only thereof and a recess in the opposite inner wall of the threaded socket, and a split spring-key passed through the opening in the outer ferrule and the shank with its free ends sprung apart within the recess of the ferrule, the outer end of the key lying within the outer periphery of the ferrule.

8. In a wrench, the combination of a stock terminating at one end in a fixed jaw and at its other end in a reduced shank, a slidable jaw mounted upon the stock and capable of being removed at the shank end of the stock, a non-rotatable ferrule removably embracing the shank at the inner end thereof, a hand-grip removably embracing the shank and engaging the inner ferrule, the outer end of the shank being threaded and provided with a transverse opening, an outer ferrule having a threaded socket to receive the threaded end of the shank and provided with an opening piercing one side only of the ferrule, the opposite inner wall of the threaded socket having a recess in alignment with the opening, the outer end of the opening being countersunk, and a split spring-key passed through the openings in the outer ferrule and the shank with its free ends sprung apart within the recess of the ferrule, the outer end of the key being formed into an eye which is received within the countersunk outer end of the ferrule-opening and within the outer periphery of the ferrule.

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

SIDNEY BOWLING HOUSE.

Witnesses:

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