No. 660,586. Patented Oct. 30, 1900.

W. P. PHENIX.

WRENCH.

(Application filed Dec. 8, 1899. Renewed Sept. 20, 1900.)

(No Model.)

Fig. 1.

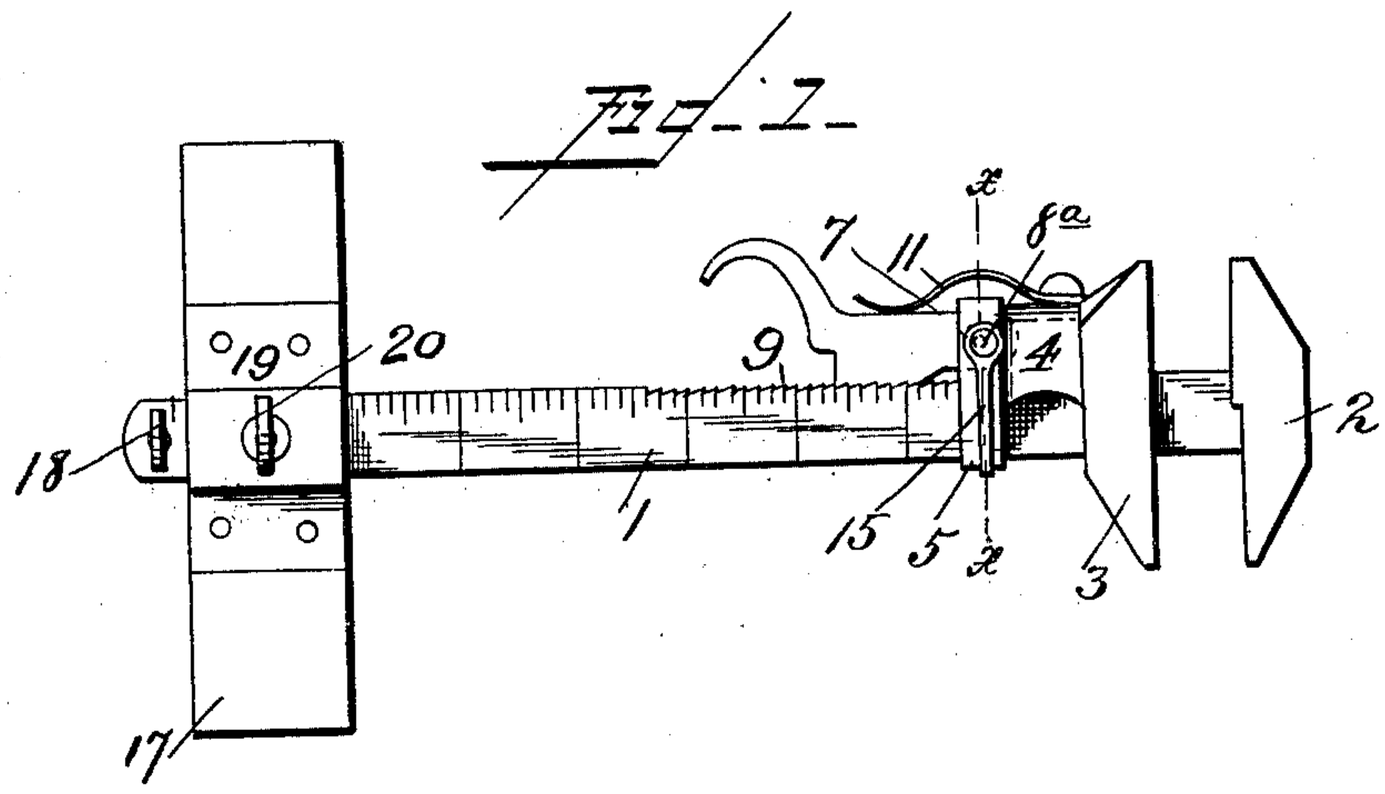


Fig. 2.

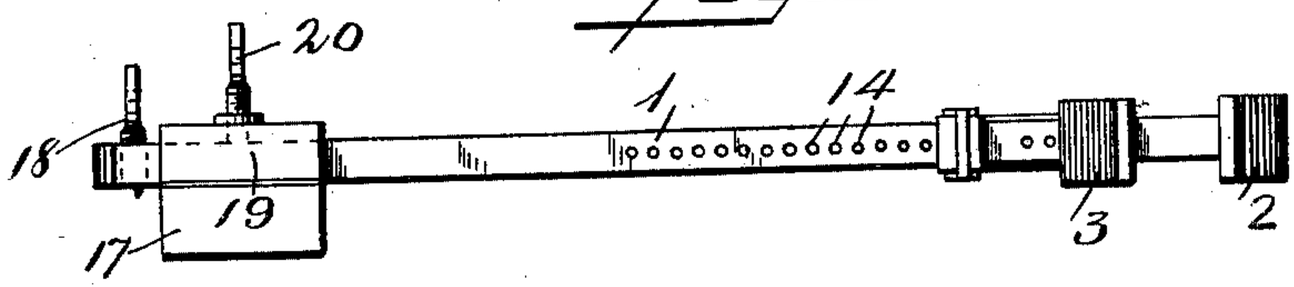


Fig. 3.

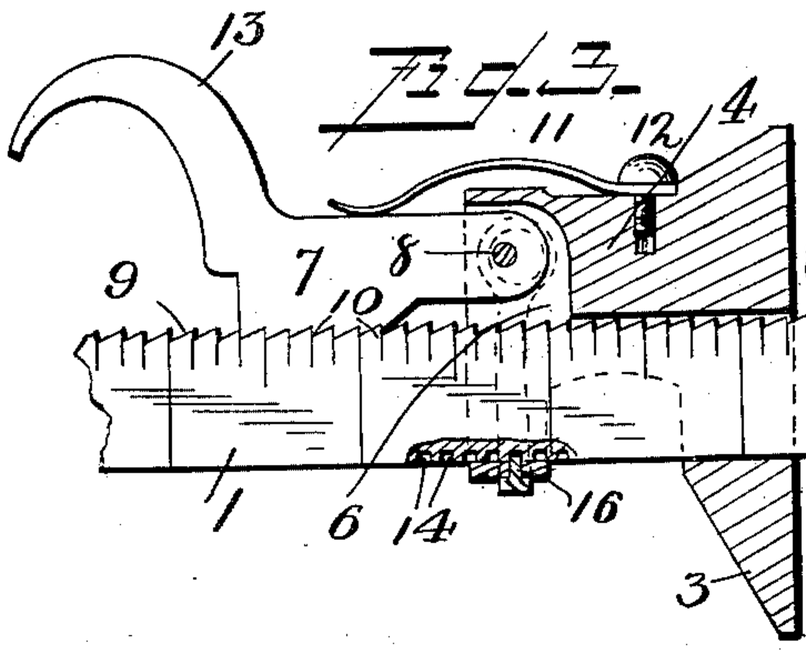
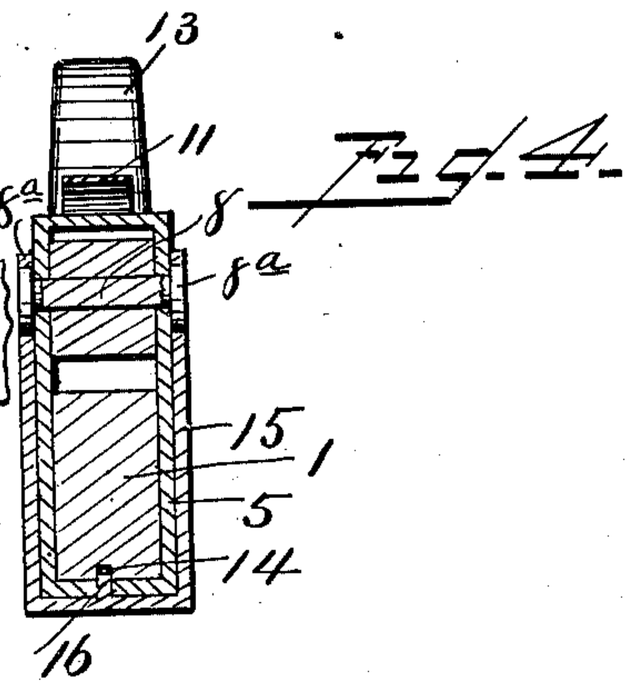


Fig. 4.



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WRENCH.

SPECIFICATION forming part of Letters Patent No. 660,586, dated October 30, 1900.

Application filed December 8, 1899. Renewed September 20, 1900. Serial No. 30,621. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PRESTON PHENIX, a citizen of the United States, residing at Lubbock, in the county of Lubbock and State of Texas, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a conveniently-operated wrench, my object being to provide a wrench which can be very quickly adjusted for its work, inasmuch as it will be seen that the jaws of my wrench may be directly and instantly opened and closed to the desired position and as quickly locked in such position.

The construction and operation of my invention will be set forth in the following specification, and its novel features will be particularly pointed out in the appended claims, reference being had to the accompanying drawings, which form a part of this application, in which—

Figure 1 is a side elevation of my combined wrench and scribe-gage. Fig. 2 is a bottom plan view thereof. Fig. 3 is a side elevation showing the movable jaw and locking-yoke in section and having a part of the longitudinal arm of the wrench broken away to disclose the locking-apertures on the under side thereof. Fig. 4 shows, on an enlarged scale, a vertical section of Fig. 1 on line *x x*.

For convenience of reference numerals will be used in referring to the different parts of my invention, similar numerals being used to refer to the same parts throughout the various figures of the drawings.

Referring to the drawings, the numeral 1 designates the main bar or lever of my wrench.

The numeral 2 refers to the fixed head or jaw of the wrench, and 3 to the movable jaw. The head 2 is made integral with the bar 1. The movable jaw is of the usual construction, having the integral rearwardly-extending bracing-section 4 and the band 5. The section 4 is provided on its rear side with a central cut-away portion 6, adapted to receive the forward end of the locking-block 7, which is secured to the said section 4 of the movable jaw by the pivot 8. The bar 1 on its upper edge is provided with the ratchet-teeth 9. The locking-block 7 is provided on its under side with ratchet-teeth designed to coöperate with those to lock the movable jaw at any desired point. The teeth 10 of the locking-block are held normally in engagement with the teeth 9 of the longitudinal bar 1 by the spring 11, which is rigidly attached in any preferred manner (as by the screw 12) to the movable jaw and has its free end bearing downwardly upon the top of the locking-block. In order that the locking-block may be easily disengaged from the bar 1 when it is desired to do so, I provide the said block with the handle 13.

It will be seen that the means already described will constitute a good reliable wrench that may be almost instantly adjusted to any desired position or changed from one position to another. However, in order that the movable jaw of my wrench may be more rigidly held in position when it is set for work I also provide means whereby it will be simultaneously locked to the bottom of the longitudinal arm as well as to the top. I accomplish this by the following means: The longitudinal arm 1 is provided on its under side with a series of apertures 14. The pivot 8 has rigidly attached to its outer ends two small eccentrics 8^a, which are received by suitable bores in the upper ends of the yoke 15, which fits snugly upon the sides and bottom of the band 5 of the sliding jaw. The lower or under section of the yoke is provided with the upwardly-extending pin 16, which takes upwardly through a suitable bore in the under side of the band 5 into the apertures 14 of the bar or lever 1. The axis of each of the eccentrics 8^a is so disposed that when the locking-block 7 is in its normal position in engagement with the arm 1 the pin 16 will be in engagement with the apertures 14 on the under side of said arm.

It will be seen that when the handle 13 is elevated in the act of disengaging the block 7 from the arm 1 the yoke 9 will by the action of the eccentrics 8^a be moved downwardly, thus disengaging the pins 16 from the apertures 14, and vice versa. The apertures 14 are so disposed with relation to the ratchet-teeth 9 that when the teeth 10 of the locking-block are in position to drop into engagement with the teeth on the upper side of the arm the pin 16 will always be exactly op-

posite one of the apertures 14 on the lower side thereof.

The yoke 15 may be dispensed with, if preferred, and the block 7 entirely relied upon to hold the movable jaw in its locked position, or the lower portion of the block 7 may be cut away, so that it will not quite come in contact with the arm 1, but will simply constitute a lever upon which the spring 11 operates, in which case the yoke 15 and means carried thereby will be entirely relied upon to lock the movable jaw.

From Fig. 1 it will be observed that the fixed jaw 2 of my wrench is slightly thicker at the upper portion than at the bottom portion thereof, so that the space between the upper face of the fixed jaw and the movable jaw is less than that between the lower face and the said movable jaw. This difference of space should usually be equal to one-half the distance from one of the ratchet-teeth to the next one. This will give twice as fine an adjustment as could be attained without employing this means. For instance, let us suppose that the ratchet-teeth 9 are one-eighth of an inch apart. It is apparent that the upper space will always be one-sixteenth of an inch less than the lower, so that if the ratchet-teeth adjust the jaws to eighths of an inch we can always get a sixteenth less by using the upper side 4 of the jaw or a sixteenth more than the upper side by using the lower side.

When it is desirous to use my combined tool as a scribe-gage, I suitably attach to it the transverse bar 17 and the scribe-bolt 18. The bar 17 has rigidly attached to its top side the plate 19 by suitable rivets or other preferred means. This plate is so bent as to provide a rectangular opening of suitable size to snugly receive the arm 1 between the transverse bar 17 and the said plate. The bar 17 is locked at any desired point on the arm 1 by means of the set-screw 20. The scribe-bolt 18 is received into an aperture in the end of the bar or arm 1 and slightly extends through said bar. The lower end of this bolt is sharpened to a point, and the distance which this point extends through the bar 1 may be regulated by turning the bolt 18. The arm 1 is provided with graduations, so that the jaws of the wrench may be set open at sight for any desired width of object to be grasped, if that width be known. The graduations are also equally useful when my device is used as a scribe-gage.

When it is desired to use my invention simply as a wrench alone, the bolt 18 may be removed and the transverse bar 17 slipped off the arm 1 out of the way. Again, when it is desirable to use it only as a scribe-gage the movable jaw of the wrench and the locking-block may be removed.

Having thus fully described the principles involved in my invention and shown means whereby the same may be applied to practice, I yet do not wish to be limited to the exact showing made, but desire protection in all that comes clearly within the spirit and scope of my invention.

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

1. In wrenches, a main arm having a fixed head and means on opposite sides of said bar whereby it may be engaged; a movable jaw carrying mechanism adapted to coöperate with said means, and to simultaneously engage and disengage the same to lock or unlock said movable jaw, substantially as specified and for the purpose set forth.

2. In wrenches, a main arm having a fixed head and ratchet-teeth on one side of said arm and recesses on the other; a movable jaw having a locking-block adapted to engage the said teeth, and an eccentrically-mounted yoke having a pin, and operated by said block, whereby both sides of the arm will be simultaneously engaged or released, as specified and for the purpose set forth.

3. In wrenches, a main arm having ratchet-teeth and recesses and a fixed head; a movable jaw carrying a locking-block and a yoke operated by said block, said block and yoke coöperating respectively with said teeth and recesses to simultaneously lock or unlock the movable jaw, and a spring operating to hold said jaw normally in a locked position, substantially as specified and for the purpose set forth.

4. In wrenches, a main arm having a fixed head and cut-away portions, a movable jaw carrying a locking-lever; an eccentrically-mounted yoke operated by said lever and by a proper movement, brought into engagement with said cut-away portions, and a spring bearing upon said lever, to hold the yoke normally in engagement with one of the cut-away portions, whereby the movable jaw is normally held strongly locked in position, substantially as specified and for the purpose set forth.

5. In wrenches, the combination with a fixed and movable jaw, of a handle; a block 7, carried by said movable jaw and having eccentrics 8^a disposed on each side thereof; a yoke 15, mounted on said eccentrics and extending around the handle and having a pin 16, said handle having a series of apertures designed to receive said pin, as and for the purpose set forth.

6. In a wrench, a movable jaw; a fixed jaw having a graduated handle provided with teeth upon one edge, and with a series of apertures upon the other edge; an adjusting-block 7; a band 5 carried by said movable jaw; a yoke eccentrically mounted on said block, and having a pin 16, adapted to extend through an aperture in said band and into engagement with one of said apertures in the edge of the handle, as and for the purpose set forth.

7. In a wrench, a handle having a fixed and movable jaw, said handle having one edge provided with teeth 9, and the other edge having a series of apertures 14; a block having teeth adapted to coöperate with the teeth 9, and a yoke eccentrically mounted on said block, said yoke having a pin 16, whereby when the block is brought into engagement with said teeth, the pin 16 will be simultaneously forced into one of said apertures 14, as specified and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM PRESTON PHENIX.

Witnesses:
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