

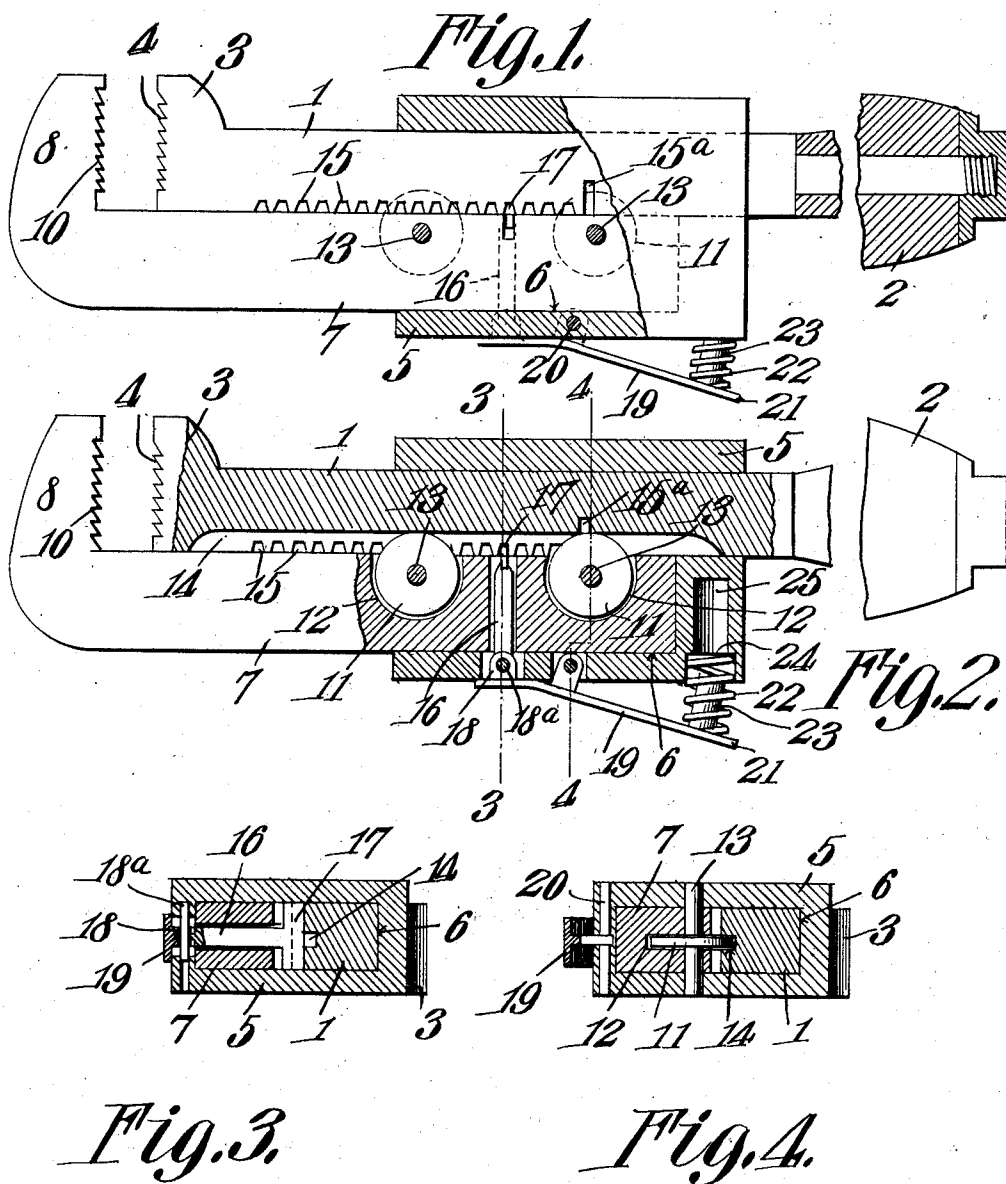
I. L. FRYE.

WRENCH.

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Patented Oct. 27, 1908.



Witnesses

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UNITED STATES PATENT OFFICE.

IRA L. FRYE, OF VANDERGRIFT, PENNSYLVANIA.

WRENCH.

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To all whom it may concern:

Be it known that I, IRA L. FRYE, a citizen of the United States, residing at Vandergrift, in the county of Westmoreland and State of Pennsylvania, 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 a sliding jaw wrench wherein the jaws may be opened and closed with great ease and by one hand to any extent desired within the capacity of the wrench.

The mechanism of the device is simple and strong, the movement of the jaws rapid, and the invention adapted for use both as a pipe wrench and for turning bolts, nuts, and so forth.

With these and other objects in view the invention consists of the novel construction, combination and arrangement of parts hereinafter described and claimed, and illustrated in the accompanying drawing forming a part of this specification in which:

Figure 1 is an elevation partly in section of the improved wrench; Fig. 2 a longitudinal sectional view of the same through the center; Fig. 3 a cross sectional view on the line 3—3 of Fig. 2, and Fig. 4 a similar sectional view on the line 4—4 of the same figure.

Similar reference numerals are used for the same parts in all the figures.

In the drawing, 1 indicates the shank of the wrench having a handle 2 on one end and the fixed jaw 3 on the opposite end wider than the shank and having a working face perpendicular to the axis thereof which may be smooth or provided with ridges or teeth 4.

Surrounding the rectangular shank 1 and slidable thereon is a sleeve 5 formed with a socket 6 extending nearly through the same, in which socket the rectangular shank 7 of a movable jaw 8 is secured parallel to the shank 1 and of the same thickness. The movable jaw 8 projects over the fixed jaw 3 and has a working face parallel thereto, and of equal length and either smooth or serrated as at 10. The adjacent sides of the two shanks 1 and 7 are very nearly in contact they being held apart by rollers 11, seated each in a pocket 12 made in the central line of the shank 7, turning on pins 13 passing through the sleeve 5 and shank 7. These pins also serve to hold the shank 7 in

the socket 6. The peripheries of the rollers 11 project outside the shank 7 into a central longitudinal groove 14 in the proximate side of the shank 1 and run on the floor of said groove. Arranged thus, the jaws of the wrench are opened and closed with great ease, as all friction between the adjacent sides of the shanks 1 and 7 is eliminated.

The inner side of the fixed shank 1 on both sides of the groove 14 is provided with a series of closely spaced transverse slots 15 with which a locking dog 16, carried by the shank 7, is adapted to engage and lock the jaws at fixed distances apart. The lowermost slot 15^a is cut deeper than the others for a purpose hereinafter described. The dog 16 has a cylindrical or other shaped shank terminating at its inner end with a cross head 17 long enough to enter the slots 15 on each side of the groove 14, and shaped at its outer end 18 to pivotally connect by a pin 18^a with one end of a finger lever 19 fulcrumed on a pin 20 passing through the sleeve 5 near one edge and parallel to the pins 13. The opposite end 21 of the finger lever is normally held away from the edge of the sleeve 5 by a spring 22, surrounding a pin 23 on the inner side of the finger lever 19 and bearing against a seat 24, said seat being the enlarged outer end of a hole 25 bored transversely in the sleeve below the bottom of the socket 6, to receive the pin 23 when the finger lever is depressed to withdraw the dog from the slotted shank 1.

Pressing the finger lever downward withdraws the dog from engagement with a slot 15 thus releasing the movable jaw which may be opened or closed to any extent desired and then locked in the new position by releasing the finger lever.

The parts of the wrench may be disconnected by first closing the jaws, thus bringing the deeper cut slot 15^a in line with the dog 16. The handle 2 is then removed by unscrewing the nut at the end. The pins 13, 18^a and 20 are withdrawn and the dog 16 pushed into the deep slot 15^a until its outer end 18 has cleared the sleeve 5. Now, by grasping the jaws with one hand and the sleeve with the other, the latter can be easily drawn off the shanks after which the latter may be separated and the rollers removed.

What is claimed is:

1. A wrench comprising a pair of parallel shanks each having a jaw at one end, a handle attached to the opposite end of one

shank and a sleeve on the end of the other shank slidable on the handled shank, anti-friction rollers between the two shanks, pins extending through the sleeve, the slidable shank and the rollers, and serving as bearings for said rollers and means for fastening the sleeve to its shank and a locking mechanism on one shank adapted to engage holding means on the other shank.

10 2. A wrench comprising a pair of parallel shanks in close proximity to each other, co-operating jaws, one on the end of each shank, a handle on the opposite end of one shank and a sleeve slidable on said shank and fastened on the opposite end of the
15 other shank, rollers pivoted in one shank adapted to run on the bottom of a groove in the other shank, removable pins passing through the sleeve and shank fastening them
20 together and serving as pivots for said rollers, and a T-headed spring actuated dog movable through said sleeve and shank adapted to engage transverse slots in the handled shank and lock the jaws to the ad-
25 justed position.

3. A wrench comprising a shank having a jaw at one end and a handle at the other a second shank parallel with and in close proximity thereto provided with a coöperating
30 jaw on one end and removably attached at its other end by pins to a sleeve slidable on the first named shank, rollers pivoted on said pins within pockets made in said second shank adapted to run on the bottom of a

35 groove in the adjacent side of the other shank, said side having a plurality of transverse closely spaced slots, a T-headed dog slidable in the shank carrying the rollers and adapted to engage by its T-head in said slots and lock the shanks together, and a
40 pivoted finger lever for operating said dog.

4. A wrench comprising a shank having a handle on one end and a jaw on the other end, said shank formed with a longitudinal
45 groove on one side and a series of closely spaced transverse slots on the same side perpendicular to said groove, a sleeve slidable on said shank and having secured thereto a movable shank parallel to the first or sta-
50 tionary shank and lying close thereto said movable shank having a coöperating jaw at its outer end and pockets in the side adjacent the grooved side of the stationary shank, rollers pivoted in said pockets and running
55 on the bottom of said groove, a dog slidable in a perforation in said movable shank, and sleeve, and adapted to engage the transverse slots in the fixed shank, and a finger lever fulcrumed to said sleeve and pivoted at one
60 end to said dog.

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

IRA L. FRYE.

Witnesses:

W. A. BITTINGER,
TORRENCE WHITE.