

H. L. DICKSON.
PIPE WRENCH.
APPLICATION FILED JULY 8, 1912.

1,055,724.

Patented Mar. 11, 1913.

Fig. 1.

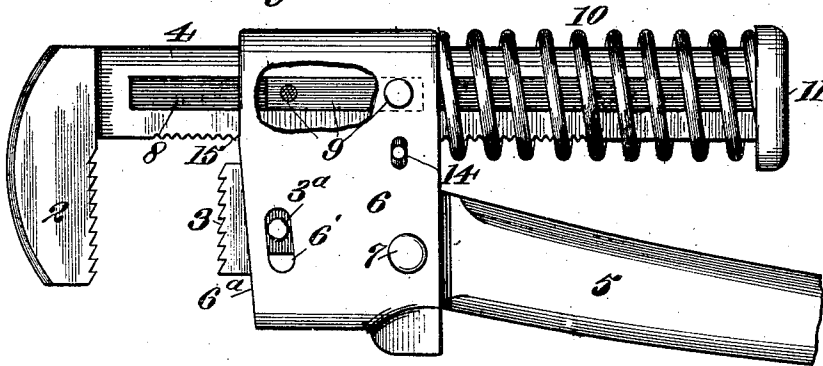


Fig. 2.

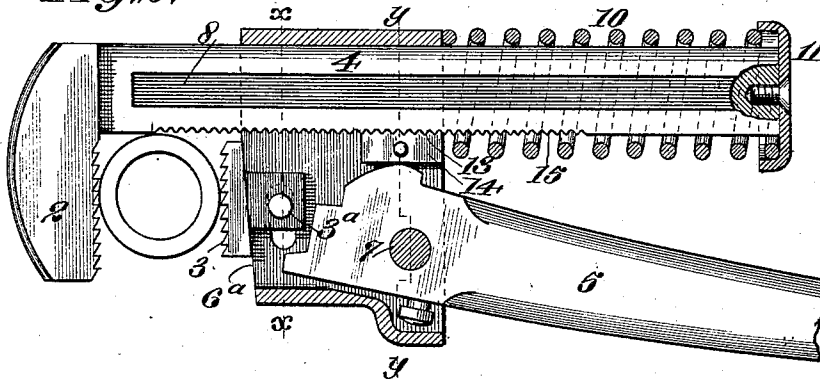


Fig. 3.

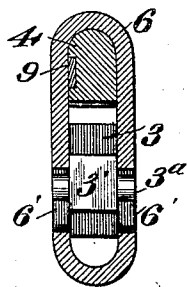
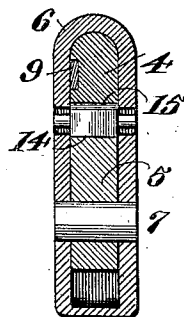


Fig. 4.



WITNESSES:

Charles Pickles
A. S. Berry

INVENTOR

Horace L. Dickson

BY *C. H. Strong*

ATTORNEY

UNITED STATES PATENT OFFICE.

HORACE L. DICKSON, OF SAN LEANDRO, CALIFORNIA.

PIPE-WRENCH.

1,055,724.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed July 8, 1912. Serial No. 708,110.

To all whom it may concern:

Be it known that I, HORACE L. DICKSON, a citizen of the United States, residing at San Leandro, in the county of Alameda and State of California, have invented new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

This invention relates to wrenches and particularly to pipe wrenches.

10 The object of this invention is to provide a simple, substantial, quickly adjustable pipe wrench involving a combination of especially formed and connected members whereby lost motion is practically entirely obviated, and which will automatically close when out of use and automatically embrace the member or pipe being operated upon after it has once been adjusted to position thereon.

20 The invention consists of the parts, and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

25 Figure 1 is a side elevation of the wrench partly in section. Fig. 2 is a side elevation of the wrench in open position with carrier in section. Fig. 3 is a cross section on line X—X, Fig. 2. Fig. 4 is a cross section on line Y—Y, Fig. 2.

30 It is desirable to provide a pipe wrench of as few and substantial parts as possible, and one which may be quickly applied. To the end of accomplishing this desirability, I employ a pair of coöperative wrench jaws 2 and 3, which may be either removable or integrally formed with respective shanks 4 and 5, the latter of which practically forms the handle of the wrench.

40 The particular features to which attention is called is a means whereby the wrench shank 4 may be quickly longitudinally advanced to open the jaws 2 and 3; and also the means by which the two jaws are temporarily locked into position when the lever 5 is being pressed and the jaws operatively engaging a pipe or other structure. I have shown the shank 4 as slidably mounted in a carrier 6, of suitable shape and strength, and which is mounted upon a pivot 7 transversely secured in the shank or handle-bar 5 approximate the jaw 3.

55 The shank 4, which may be of any suitable shape and proportion, is longitudinally slotted, as at 8, upon one or both sides, so as to receive pins or projections 9 rigidly fastened

in the carrier 6 and upon which the shank 4 may slide. The pins or projections 9 prevent transverse movement of the shank 4 within the carriage 6. Around the shank end is placed an expansible spring of suitable structure, as at 10, reactive between one side of the carrier 6 and a removable button or head 11 attached to the shank end 4.

60 The normal effect of the expansible spring 10 is to retract the jaw 2 and the shank 4 toward the substantially stationary body or lever member 5. When it is desired to advance the jaw 2, the operator of the wrench grasps the handle 5 in one hand and pushes upon the button or head 11 of the slidable shank until the jaw 2 is opened sufficiently to grasp the pipe to be turned. Releasing pressure from the button 11 allows the spring 10 to force backwardly the jaw 2 until it firmly embraces the pipe, and then when the lever 5 is pressed open, it will oscillate slightly about its pivot 7 in the carrier or box 6 sufficiently to carry an upwardly projecting locking lug 12, formed on one edge of the handle, into engagement with a dog 14. The dog has a plurality of indentations or teeth 13 formed upon its edge adjacent to the wrench shank 4, which is toothed at its under edge at 15, thus locking the two shanks firmly together and preventing the outward movement of the member 4.

75 The relative amount of movement of the handle 5 about its pivot 7 is determined by the amount of space formed between the bottom of the carriage 6 and the bottom edge of the lever 5. This amount of space is designed to be sufficient to allow the lock dog 14 to clear itself from the teeth 15 to let the expansible spring 10 automatically retract the jaw 2.

80 Manifestly, if the jaw 3 was rigidly connected to the carriage or box 6 and the lever 5 manipulated so as to force the dog 14 into engagement with the teeth 15, when it was desired to bring the jaws 2 and 3 into binding engagement with a given sized pipe, it is possible that there might be a sufficient space between the opposed jaws to prevent the latter from binding on the pipe to be turned, because of the pitch of the teeth 15 on the shank 4. In order to absolutely insure the tight binding engagement of the jaws 2 and 3, I purposely mount the jaw 3 in the box 6 for movement relative to the

latter. In this instance the jaw is provided with a shank or lug 3', projecting through which is a pin 3^a which extends transversely through slots 6' in the opposite sides of the box 6. The front portion of the jaw 3 bears against the inclined surface 6^a of the end of the box 6; the inclination being sufficient to compensate for the pitch of the teeth of the shank 4, so that when the jaws 2—3 have been adjusted, approximately, upon the pipe to be turned, a force is applied to the lever 5. The friction of the teeth of the jaw 3 being upon the pipe, will cause the jaw proper to slide upwardly on the inclined surface of the box 6, wedging the box teeth firmly upon the pipe or piece to be turned. Thus, the detachable and movable jaw 3 has a compensatory movement relative to the box 6.

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

1. An improved wrench comprising a pair of shanks one of which forms a handle and the other is made rigid with an outer jaw, a carrier within which the second-named shank slidably operates, a spring surrounding the second-named shank between the end thereof and the carrier, said spring being reactive against the carrier to automatically retract the second-named shank and its jaw, a dog slidably mounted in the carrier having a serrated surface, said second-named

shank having a serrated surface engaged by said dog, and a movable jaw slidably mounted in the carrier at right-angles to the second-named shank, said first-named shank being pivotally mounted in the carrier having a projecting lug to operate against said dog and force the same into locking engagement with the second-named shank.

2. In a wrench of the character described, the combination with a shank having a fixed jaw and having a toothed surface, a carrier embracing said shank, a movable jaw mounted in the carrier, a second shank pivotally mounted on the carrier, and a dog mounted in the carrier and having a toothed surface to engage the like surface on the first-named shank, said dog being interposed between the two shanks and operated upon by the second-named shank, said carrier having an inclined front edge and movable jaw having an inclined back engaging said edge whereby the movable jaw has a compensatory movement relative to the carrier.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HORACE L. DICKSON.

Witnesses:

R. L. GREGORY,
JOHN B. FLOYD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."