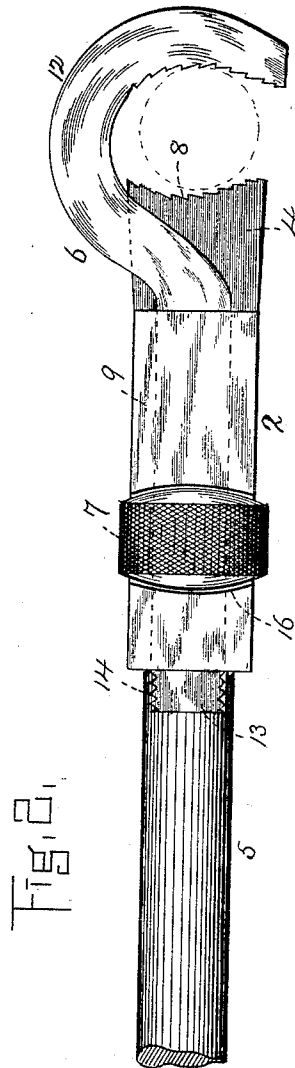
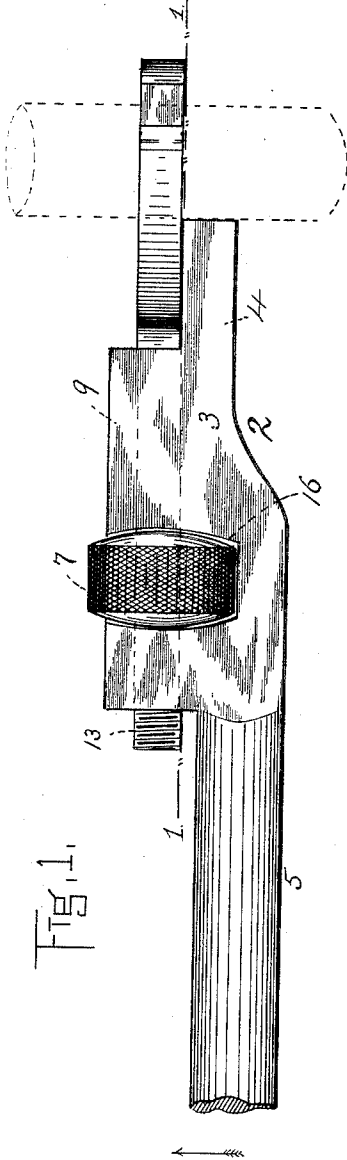


(No Model.)

M. HERRIGAN.
WRENCH.

No. 468,177.

Patented Feb. 2, 1892.



Witnesses.
Francis C. Stenwood
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UNITED STATES PATENT OFFICE.

MICHAEL HERRIGAN, OF NEWTON, MASSACHUSETTS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 468,177, dated February 2, 1892.

Application filed May 14, 1891. Serial No. 392,651. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL HERRIGAN, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, 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, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in wrenches, more particularly that class termed "pipe-wrenches."

My invention consists in the construction of the fixed and movable jaws, whereby these said parts are placed on opposite sides of a line drawn longitudinally through the tool. In this way the action of the jaws is similar to that of a cant-lever, and great power is acquired where a lift and twist are required simultaneously.

The drawings herewith accompanying this specification represent, in Figure 1, a view of a wrench embodying my invention, looking edgewise at the jaws. Fig. 2 is also an elevation showing a side view of the wrench and jaws.

In sinking "driven" wells, so called, it is very frequently necessary to remove a pipe or lengths of pipe composing the tube. In such instances the pipe not only must be twisted, but lifted; and the object of my present invention is to provide a wrench which will produce such action.

In the ordinary construction of a wrench, particularly such as are used for piping or otherwise, the jaws are in alignment or located in the same plane. As a consequence no effective grip to lift can be obtained, except such as is produced by the pressure with which the jaws clasp the pipe. With this premise I will explain the wrench embodying my invention. Said wrench as an entirety is shown at 2 as composed of these several parts: a main body or casting 3, which terminates in the fixed jaw 4, and with an operating-handle portion 5 at the opposite end, together with a movable jaw 6, detachably secured thereto

and operated by the adjusting-nut 7. Upon reference to Fig. 2 it will be seen that the body is an oblong symmetrical casting viewed in this direction, terminating in a slightly-enlarged end transversely serrated or toothed at 8. This part serves as the fixed jaw of the wrench. This jaw may be straight upon its active portion or may be slightly concaved, as seen in Fig. 2, to give a larger bearing-surface upon the pipe and prevent crushing of the latter.

Reference to Fig. 1, which is a view at right angles to that of Fig. 2, shows the body or casting 3 formed with an offset 9, which extends the greater part of its length. Said offset is longitudinally bored to receive the movable jaw 6. The latter is composed of a curved or hook-shaped end 12, armed with teeth, and an opposite straight shank 13, screw-threaded at 14 to co-operate with the adjusting-nut 7, contained in a slot or aperture 16 in the body 3 of the wrench. Thus it will be seen by Fig. 2 that a line lengthwise of the tool will pass through the center of the pipe or rod indicated in broken lines. Hence there is no tendency of the wrench to turn when a lift is made, while if a twist of the pipe is desired the teeth of the co-operating jaws grasp it firmly. By examination of Fig. 1 it will further be seen that by means of the offset on the body of the wrench the jaws are not situated in the same plane, but upon opposite sides of a plane which, taken lengthwise of the tool, is coincident with the adjacent faces of said jaws. This plane is shown at 11. Hence when the handle is thrust in the direction indicated by arrow in Fig. 1, assuming that the pipe shown in broken lines is vertical, a very powerful grip is exerted, and, as before premised, very aptly instanced as similar to the effect produced by a cant-hook. Thus the construction of the wrench not only enables it to be employed as an ordinary pipe-wrench, but it can serve as a very efficient lever—a function not possessed by this class of tools as ordinarily constructed.

What I desire to claim is—

1. As a new article of manufacture, a wrench composed of an operating-handle, a fixed jaw, an adjusting-nut, and a movable jaw secured to the body of the fixed jaw in such manner

that said jaws shall be located upon opposite sides of a plane longitudinally of the tool and coincident with the overlapping or contiguous portions of said jaws, substantially as and for
5 the purposes set forth.

2. The combination, with the wrench-body 3, its fixed jaw 4, and the operating-handle 5, of the offset 9, longitudinally bored, a movable jaw 6, having its shank within said offset, and
10 the adjusting-nut 7, the offset being so constructed that each jaw shall be situated on

opposite sides of a plane drawn longitudinally of the tool and parallel with the adjacent surfaces of said jaws, substantially as explained and described.

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

MICHAEL HERRIGAN.

Witnesses:

H. E. LODGE,

FRANCIS C. STANWOOD.