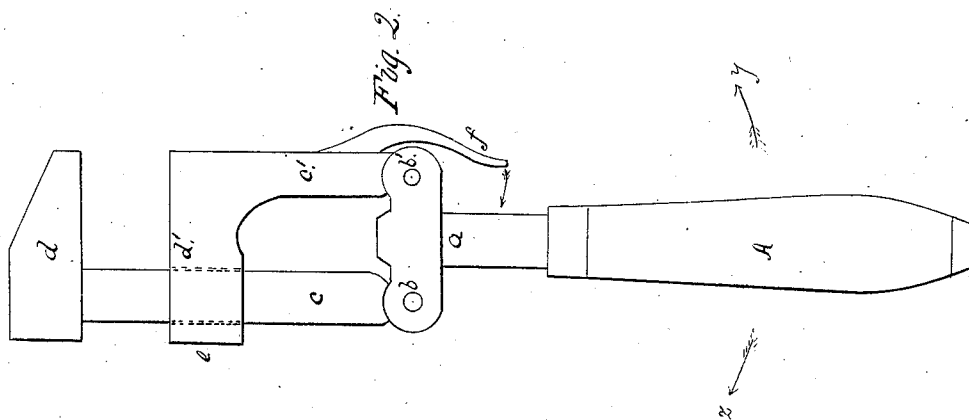
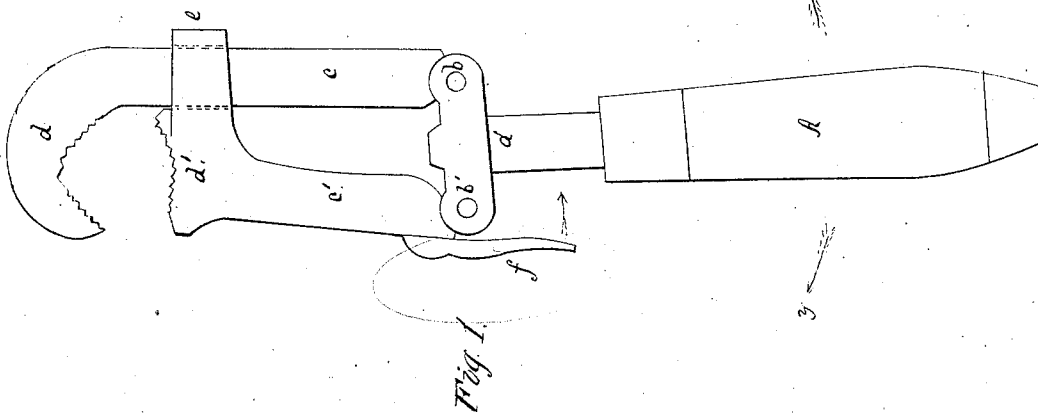


H. D. Blake,

Wrench.

N^o 18,266.

Patented Sep. 22, 1857.



UNITED STATES PATENT OFFICE.

HENRY D. BLAKE, OF NEW HARTFORD, CONNECTICUT, ASSIGNOR TO W. H. WARNER, OF NEW BRITAIN, CONNECTICUT.

WRENCH.

Specification of Letters Patent No. 18,266, dated September 22, 1857.

To all whom it may concern:

Be it known that I, HENRY D. BLAKE, of New Hartford, in the county of Litchfield and State of Connecticut, have invented a certain new and useful Improvement in Hand-Wrenches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which forms part of this specification, and in which—

Figure 1 represents the side view of a wrench constructed according to my improvement with the jaws shaped to adapt them to the grasping and turning of cylindrical bodies, such as pipes and so forth; and Fig. 2 a similar view of the wrench with the jaws shaped to adapt them to the turning of square and many sided nuts.

My improvement has reference to the tongs action or vibrating handle form of adjustable wrench to effect the grip and its release; and is of that character of wrench which admits of the active movement, relatively to the handle, of both jaws in reverse directions. And my improvement consists, more or less, in a novel mode of gearing, for action together in a permanent and positive manner, the two jaws with the stock or handle of the wrench, substantially as hereinafter described, and so that, a vibratory motion or lateral throw of the handle is made to exert a like tendency to move the two jaws in reverse directions, both in releasing from grip and in effecting it, as will be more fully explained by the following description of details and their action, and which, it will be seen, distinguish this arrangement, essentially, from another known arrangement or form of wrench, in which, a similarly moving or vibrating handle—pivoted to the one jaw only—is used, and, by its vibration or single movement in the direction to effect grip, the jaw operated by said handle is made to exert a direct thrust on the other jaw to move it in a reverse direction, by means of connecting and disconnecting gear, consisting of a rack, pawl, and spring; but in which arrangement, otherwise, the two jaws or their shanks are not permanently or positively geared, either to each other, or the handle, but form detached portions, giving to the one jaw a stationary character as it were or a loose fitting, in its connection with the whole, that makes the vibration of the han-

dle in the opposite direction, for release of grip, only to operate the one jaw, instead of the two jaws. In both of these arrangements however, the one jaw has a recessed attachment that slides on or along the shank of the other jaw, which feature is common to many or most adjustable wrenches.

As both figures in the accompanying drawing represent a like arrangement, the only difference being in the shape and smooth or roughened construction of the jaws, which may be varied at pleasure, it is immaterial which figure be examined, the same letters of reference indicating corresponding parts in both figures.

The handle (A) is represented as fitted on or attached to a T piece or stock (a) that thus forms part of the handle as it were and to which are jointed, on opposite sides of the T, by, say, joint pins (b b¹), the shanks or extensions (c c¹) of the two jaws (d d¹), the one jaw extension (c) passing loosely through a guiding recessed attachment (e) of the other jaw.

By this construction, it will be seen, that the vibration or lateral movement of the handle (A) in the one direction—say as indicated by the arrow y,—causes the two jaws (d d¹) to close toward each other to effect the grip, and continued pressure on the handle in the same direction serves to tighten the grip; while a reverse action to the handle—as indicated by the arrow z,—separates the jaws to free from grip; both actions being alike as regards the simultaneous operation of both jaws in reverse directions by the mere vibration of the handle, whether it be to close or open the jaws, only the directions of motion being changed, and the arrangement presenting a smoothly operative and permanent gear having a positive action on both jaws in the two movements of opening and closing by the lateral throw of the handle, without disconnection of details or use of intermediate gear liable to derangement.

While the action of the handle is in, say, a curvilinear direction, from side to side, the travel of the jaws toward or from each other is, comparatively speaking, straight in direction of the radius as it were or leverage of the whole instrument, and it will be readily seen that the connecting portions may be so freely jointed and attached as to make the parallelism of the gripping sur-

faces of the two jaws perfect, or sufficiently so for all or most practical purposes, at any and every adjustment of the jaws apart, where such is a desideratum.

5 What may be termed the inner jaw (d^1) or shank (c^1) thereof, I provide with a thumb piece (f) arranged to overlap on the handle side, the joint pin (b^1) which connects said jaw to the T piece (a) of the
10 handle, so that by pressing on said thumb piece with say the thumb of the hand that clutches the handle of the wrench, the two jaws are "closed" or brought nearer together, which provision will be found very
15 useful in effecting and regulating grip.

In speaking of the two jaws moving in reverse directions, this is of course literally the case when the body being gripped is of a soft or yielding nature, and in the closing
20 action of the grip and early portion of the release generally; but in the previous or further action of the jaws, the one jaw may be said to have a stationary bearing on the body, and the other, in fact, alone to be the
25 expanding or contracting one, as well understood in the action of wrenches which admit of separate movement, relatively to the handle, of both jaws in reverse directions.

30 What I claim as a new and useful im-

provement in the hand wrench, and desire to secure by Letters Patent, is:

1. The combination, with a vibrating stock or handle arranged for action substantially in the manner described, of the
35 two, or inner and outer, sliding jaws of the wrench, jointed on opposite sides to said stock or handle and both jaws operated, or expanded and contracted in reverse directions, to effect and release grip, by the lat-
40 eral throw or motion proper of said handle, in both directions of its swing, essentially as herein set forth.

2. Also, while not claiming a projecting thumb piece to a single sliding jaw, to lock
45 or release the grip of the same by means of a cam, or its equivalent, connected therewith: I do claim providing the one jaw with a projecting thumb piece (f) arranged to overlap the jointed attachment of said
50 jaw to the stock and forming a rigid extension, as it were, of said jaw, to facilitate the action or movement of both jaws, substantially as shown.

In testimony whereof, I have hereunto
55 subscribed my name.

H. D. BLAKE.

Witnesses:

JULIUS B. BARNES,

S. E. CASE.