

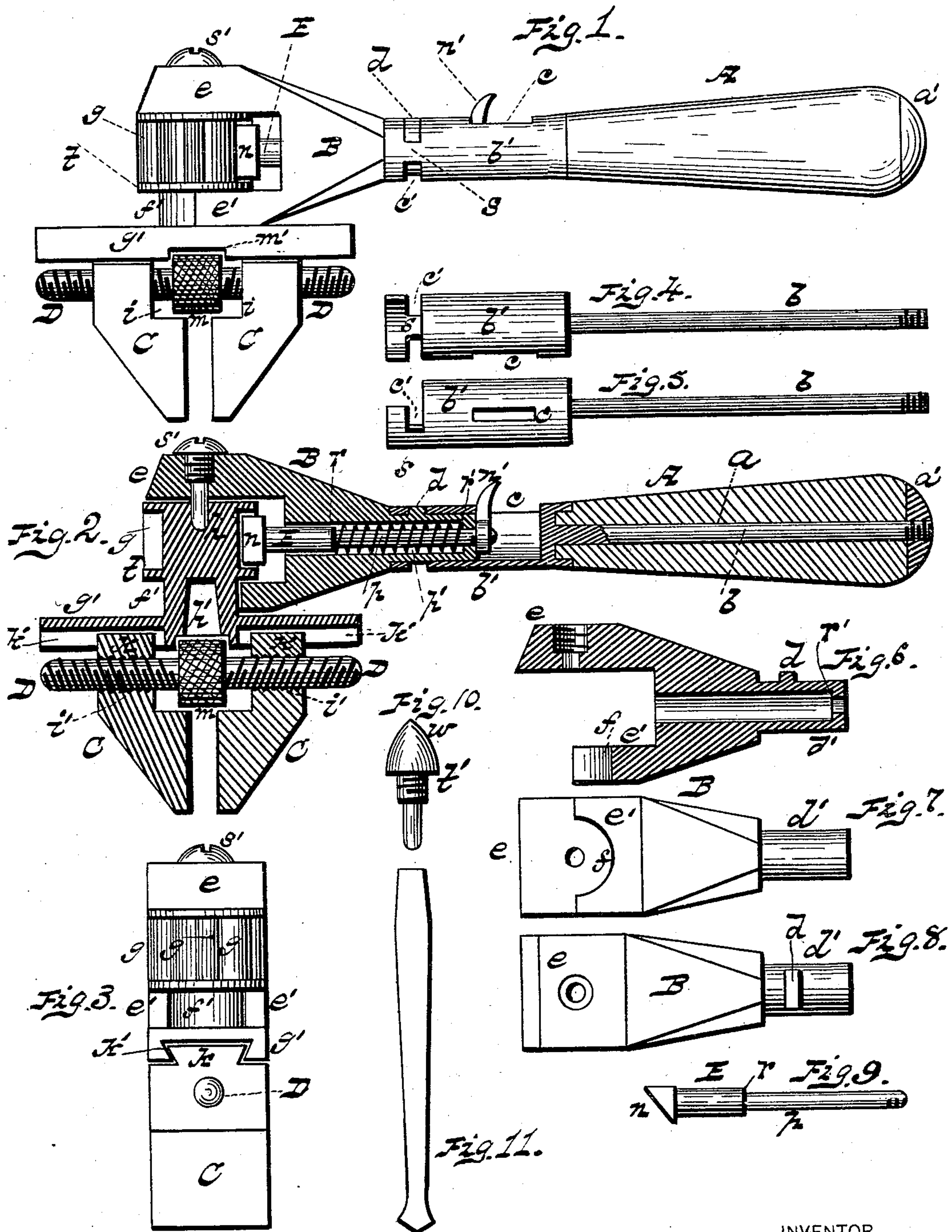
(No Model.)

O. E. H. N. REICHLING.

WRENCH.

No. 275,079.

Patented Apr. 3, 1883.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

OSCAR E. H. N. REICHLING, OF MARION, INDIANA, ASSIGNOR OF ONE-HALF TO GEORGE H. STUART AND CHARLES E. ERNEST, BOTH OF SAME PLACE.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 275,079, dated April 3, 1883.

Application filed January 2, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR E. H. N. REICHLING, a citizen of the United States of America, residing at Marion, in the county of Grant and State of Indiana, have invented certain new and useful Improvements in Ratchet-Wrenches, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has relation to improvements in that class of devices known as "ratchet-wrenches;" and it consists in the construction and novel arrangement of the pivoted handle, the spring-dog applied thereto, in connection  
15 with the ratchet on the stem of the grooved plate, and the wrench-jaws operated by means of a right-and-left screw; and the invention further consists in the combination of various parts of which it is composed, as will be hereinafter more fully explained.

The annexed drawings, to which reference is made, fully illustrate my invention, in which—

Figure 1 represents a side view of my improved wrench. Fig. 2 is a vertical sectional view of the same. Fig. 3 is an end view. Figs.  
25 4, 5, 6, 7, 8, 9, 10, and 11 are detail views of the various parts detached from the wrench.

Referring to the accompanying drawings, the letter A designates the handle of the wrench,  
30 which is provided with a passage, *a*, from one end to the other end to receive a shank, *b*, that is screw-threaded on its outer end to receive a nut, *a'*, and on the opposite end of said shank and a part thereof is a ferrule, *b'*, that  
35 is provided with a horizontal slot, *c*, and a T-head of circular form, and slotted, as shown at *c'*, to engage a lug, *d*, on the upper and outer face of the hollow stem *d'*, that is a part of a forked head, B. Said head has an upper extension, *e*, that is vertically screw-threaded  
40 about half its thickness, leaving the remaining half-thickness with a smooth hole of less diameter than that of the screw portion. The lower extension, *e'*, of the head B is shorter in length than the upper extension, and it is  
45 formed with a semicircular bearing, *f*, adapted to partially encircle the stem *f'*, that is provided with the ratchet-teeth *g* and the grooved plate *g'*. The upper end of said stem *f'* has a vertical hole or pivot-bearing, *h*, and the plate *g'* is

provided with a recess, *h'*, on its under side, to receive a drill, which will be further herein explained.

C C indicate wrench-jaws, which are cut away at *i i*, and are provided with female screw-threads *i' i'*, being right-hand thread in one jaw and a left-hand thread in the opposite jaw. Each jaw C C is constructed with a dovetail head, *k k*, on its upper face, that works smoothly in the corresponding dovetail grooves, *k' k'*, in the under side of the plate *g'* aforesaid.

D represents a right-and-left screw, that has in its center a milled nut, *m*, which works in a notch, *m'*, made in the under face of the plate *g'*, which notch serves to keep said nut *m* in place when the screw D is operating the jaws aforesaid, as shown in the drawings.

E indicates the ratchet-dog, which is provided at one end with a bevel-head, *n*, and on the opposite end with a thumb-nut, *n'*, that is screwed thereon, and on the stem *p* of said dog is placed a coil-spring, *p'*, one end of which bears against a shoulder, *r*, on said stem, while the opposite end of said spring bears against a shoulder, *r'*, on the inner end of the hollow stem *d'*, as shown in Fig. 2 of the drawings.

Having thus given a description of the various parts of which my wrench is composed, I will now proceed and explain the manner in which it is operated.

In working my wrench the nut *m* is to be turned in one direction, thus revolving the screw D, thereby causing the jaws C C to slide in the dovetail grooves *k' k'* and toward each other, thus clamping a nut, after which the handle A is grasped by the operator and given a backward and forward movement, thus in the forward movement, by means of the dog E, acting upon the teeth of the ratchet *g*, causing the jaws aforesaid to turn and carry the nut therewith, until said nut is screwed home, after which a reverse movement is given to the screw D, which separates said jaws, thus permitting said wrench to be detached from the nut.

In releasing a nut from a bolt the jaws are clamped to the same, as above described, and the handle A is also given the same movement as above mentioned. At the same time the dog E is reversed from the position of that



described by reversing the bevel-head *n* to act in an opposite direction upon the ratchet. The reversing movement of said dog is effected in the following manner. The thumb-nut *n'* 5 is drawn outward, thus carrying therewith the stem *p*, thereby releasing the head *n* from engagement with the teeth of the ratchet. The handle *A* is then given a half of a revolution, carrying therewith the thumb-nut, at the same 10 time bringing the bevel of the head to the opposite side of its former position, and by means of the lug *d* working in the slot *c'*, said turn of the handle is stopped at the proper time by the cross-bar *s* of the T-head aforesaid coming 15 in contact with the lug *d*, when the bevel-head of the dog will again engage the ratchet, and by the spring *p'* be held against the same.

It will be observed that the revolving movement of the jaws, plate, and ratchet is permitted by the end of the screw *s'* entering the vertical hole *h* in the upper end of the stem *f'*, 20 and forming a pivotal connection with the lower semicircular extension, *e'*, acting upon the stem aforesaid, and the flange *t* of the ratchet serves to connect the parts *B f' E g'* 25 together.

It will be further seen that I can convert my wrench into a ratchet-drill. This is accomplished by removing the jaws *C C* and 30 screw *D* and inserting a drill-tool into the hole *h'* in the plate *g'*, and removing the pivotal screw *s* and inserting in its stead a similar screw, *t'*, that has a pointed or pivotal head, *w*, for drilling purposes. Again, it will be noticed 35 that my wrench is easily taken apart, and it is durable, easily operated, and at the same time cheap to manufacture.

What I claim, and desire to secure by Letters Patent, is—

1. In a ratchet-wrench, the shank *b* and ferrule *b'*, constructed of one piece of metal, and provided with the slot *c* and T-head, slotted 40 end *c'*, in combination with the dog *E*, forked head *B*, ratchet *g*, and plate *g'*, as shown, and for the purposes set forth.

2. The combination, with the head *B*, having the upper extension and lower semicircular extension, and stem *d'*, provided with the lug 45 *d*, of the ferrule *b'*, slotted at *c c'*, handle *A*, ratchet *g*, dog *E*, and plate *g'*, as shown and described.

3. The combination, as herein described, with the slotted ferrule *b'*, dog *E*, operated by the spring *p'*, the head *B*, constructed as described, the ratchet *g*, and plate *g'*, having the 55 recess *h'* to receive a drill-tool, of the jaws *C C* and screw *D*, as and for the purposes set forth.

4. In a convertible wrench, the combination, with the ratchet *g*, head *B*, having the 60 spring-dog *E*, slotted ferrule *b'*, and handle *A*, of the plate *g'*, provided with the recess *h'* for holding a drill-tool, and the pointed head or pivotal screw *t'*, as shown and described, and for the purposes specified.

In testimony whereof I affix my signature in 65 presence of two witnesses.

OSCAR E. H. N. REICHLING.

Witnesses:

CHARLES E. ERNEST,

WILLIAM G. <sup>his</sup> × WILLIAMS.  
mark.

Attest:

WM. H. IRVINE.