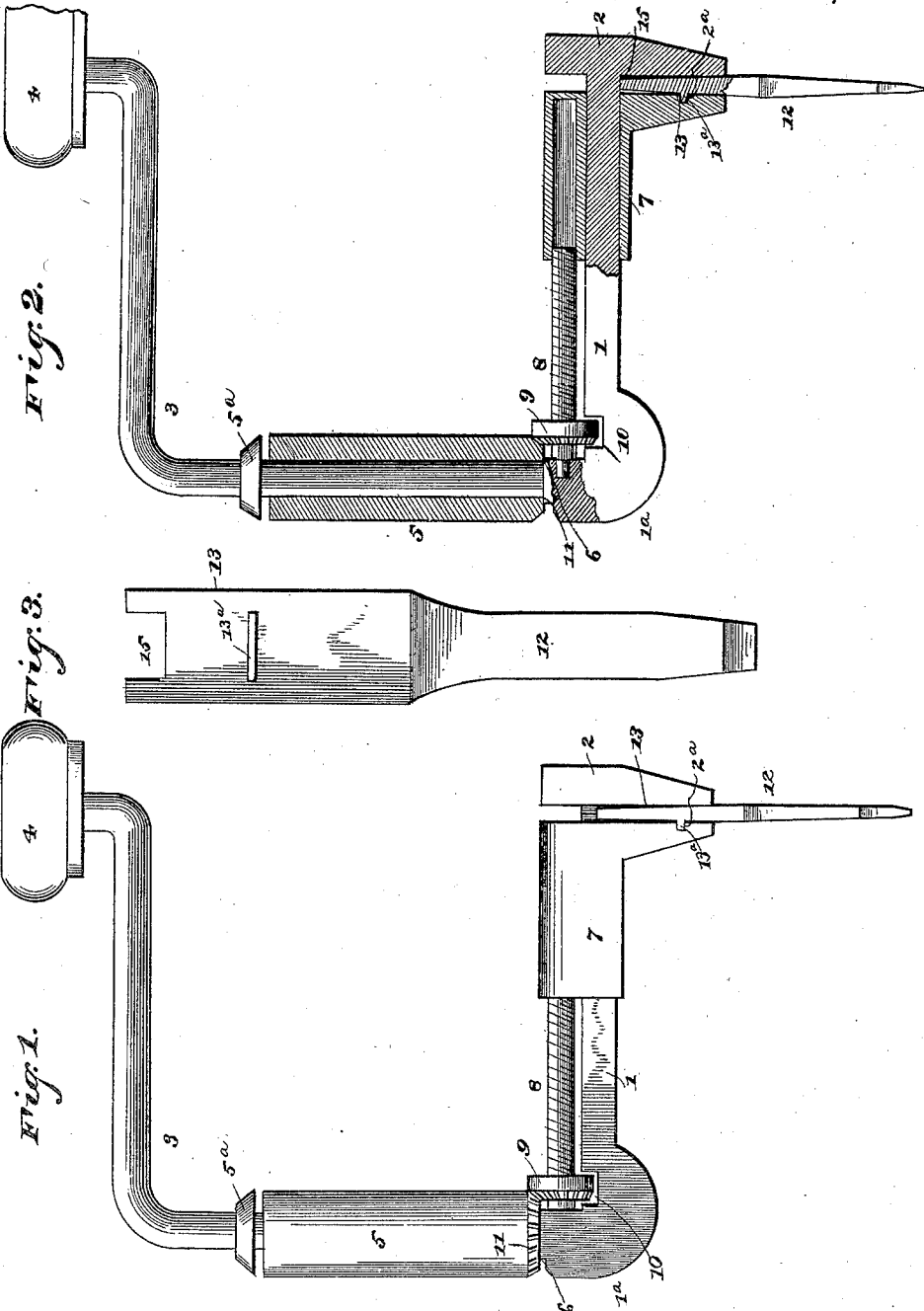


(No Model.)

J. E. SHELL.
WRENCH.

No. 465,542.

Patented Dec. 22, 1891.



Witnesses:

B. L. Ober
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Inventor

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UNITED STATES PATENT OFFICE.

JOHN E. SHELL, OF MONTICELLO, ARKANSAS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 465,542, dated December 22, 1891.

Application filed October 7, 1891. Serial No. 408,040. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. SHELL, a citizen of the United States, residing at Monticello, in the county of Drew and State of Arkansas, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to improvements in wrenches; and the objects in view are to provide a wrench adapted to serve as such and as a brace for holding in a secure manner various kinds of bits.

A further object of the invention is to provide a simple and convenient means for adjusting the jaws of the wrench, whereby the same are adapted to release or grip a bit or be fitted to various sizes of nuts.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is an elevation of a wrench constructed in accordance with my invention. Fig. 2 is a vertical longitudinal section through a portion of the wrench-handle. Fig. 3 is a detail elevation of a bit adapted to be employed in connection with the wrench when the latter is used as a brace.

Like numerals indicate like parts in all the figures of the drawings.

1 denotes the rectangular stock or shank of the wrench, and at its extremity the same terminates in the usual transverse fixed jaw or head 2. The shank 1 is of crank shape—in other words, is but one branch of an ordinary brace 3, which brace at its outer end has swiveled thereon the usual head 4. Between its two branches the brace is cylindrical, and has loosely mounted for rotation and reciprocation thereon a cylindrical sleeve 5, which at its inner end is adapted to bear against a shoulder 6, formed by the reduction of the brace, to form the cylindrical portion thereof, and at its outer end a stop 5^a.

7 designates a sliding jaw mounted upon the rectangular portion 1 of the brace, and between the inner end of the jaw and the intermediate portion of the brace there is journaled, in suitable bearings formed in the jaw and brace, a screw-threaded rotatable feed-rod 8, which near its inner end has formed or secured rigidly thereon a toothed wheel or

gear 9, the same entering a recess 10, formed in the stock or shank 1. The teeth of the gear 9 are engaged by the teeth 11, formed at the outer end of the sleeve 5, so that any rotation upon the part of the latter serves to communicate similar movement to the gear 9 and feed-rod 8, and in this manner is the sliding head or jaw 7 made to reciprocate in either direction upon the shank 1. When employed as a wrench, the sleeve 5 is first slid inwardly to engage the gear 9 and rotated in a proper direction to cause the movable jaw to fit over and clamp upon the nut to be removed or applied, after which the sleeve is slid outwardly out of engagement with the gear 9, and the brace is handled in the usual manner and rotated so as to cause the wrench and nut to rotate either for the purpose of withdrawing or applying the latter.

12 designates an ordinary bit—in this instance a screw-driver—adapted to be used in connection with the described brace, and said bit is provided with a flat shank 13, adapted to fit between the opposing jaws of the wrench, and the end of the shank has formed therein a rectangular recess 15, adapted to receive and somewhat snugly fit that portion of the shank 1 between the two jaws, whereby it requires but a slight pressure of the jaws to maintain the bit in position and against any possible displacement. When the brace is thus provided, it will be seen that it may be operated similar to any other bit. If desired, some such means as a spring-catch or thumb-screw may be provided to hold the sleeve out of engagement with the gear. The inner angle of the crank is thickened, as shown at 1^a, so as to substantially agree with the diameter of the sleeve and in face form a continuation thereof. When applying extra power, the hand of the operator may be slid from the handle over the enlarged portion 1^a, and thus the power be more directly applied.

The face of the bit may be provided with a transverse rib 13^a, the same taking into a transverse groove 2^a, formed in the inner face of the jaw 7, and thus slipping of the bit will be avoided.

Having described my invention, what I claim is—

1. The combination, with the brace having one end squared to form a shank and termi-

5 nating in a fixed jaw and at its opposite end
in a swiveled head, of a sliding jaw mounted
on the shank, a threaded feed-rod bearing in
the sliding jaw and against the brace, a toothed
wheel upon the rod, and a cylindrical sleeve
mounted on the brace and adapted to rotate
and having its end toothed to engage the teeth
of the wheel, substantially as specified.

10 2. The bit having the flat shank provided
with a rectangular recess at one end, adapted
to fit the shank of the wrench, and provided
with a transverse rib 13°, adapted to fit a
groove in the jaw of the wrench, substantially
as specified.

15 3. The combination, with the cranked brace
having one end squared to form a shank and
terminating in a fixed jaw and at its opposite
ends in a swiveled head, of a sliding jaw
mounted on the shank, a threaded feed-rod
20 bearing in the sliding jaw and against the
brace, a toothed wheel upon the rod, and a cy-
lindrical sleeve mounted on the brace and
adapted to rotate and reciprocate and having

its end toothed to engage the teeth of the
wheel, substantially as specified. 25

4. The combination, with the cranked brace
having one end squared to form a shank and
terminating in a fixed jaw and at its opposite
end in a swiveled head, of a sliding jaw mounted
on the shank, a threaded feed-rod bearing in
the sliding jaw and against the brace, a toothed
wheel upon the rod, and a cylindrical sleeve
mounted on the brace and adapted to rotate
and reciprocate and having its end toothed to
engage the teeth of the wheel, a stop 5° being
35 formed on the brace above the sleeve and the
lower angle of the brace having an enlarge-
ment forming a continuation of the sleeve,
substantially as specified.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses. 40

JOHN E. SHELL.

Witnesses:

R. L. HORDY,
J. E. FARLEY.