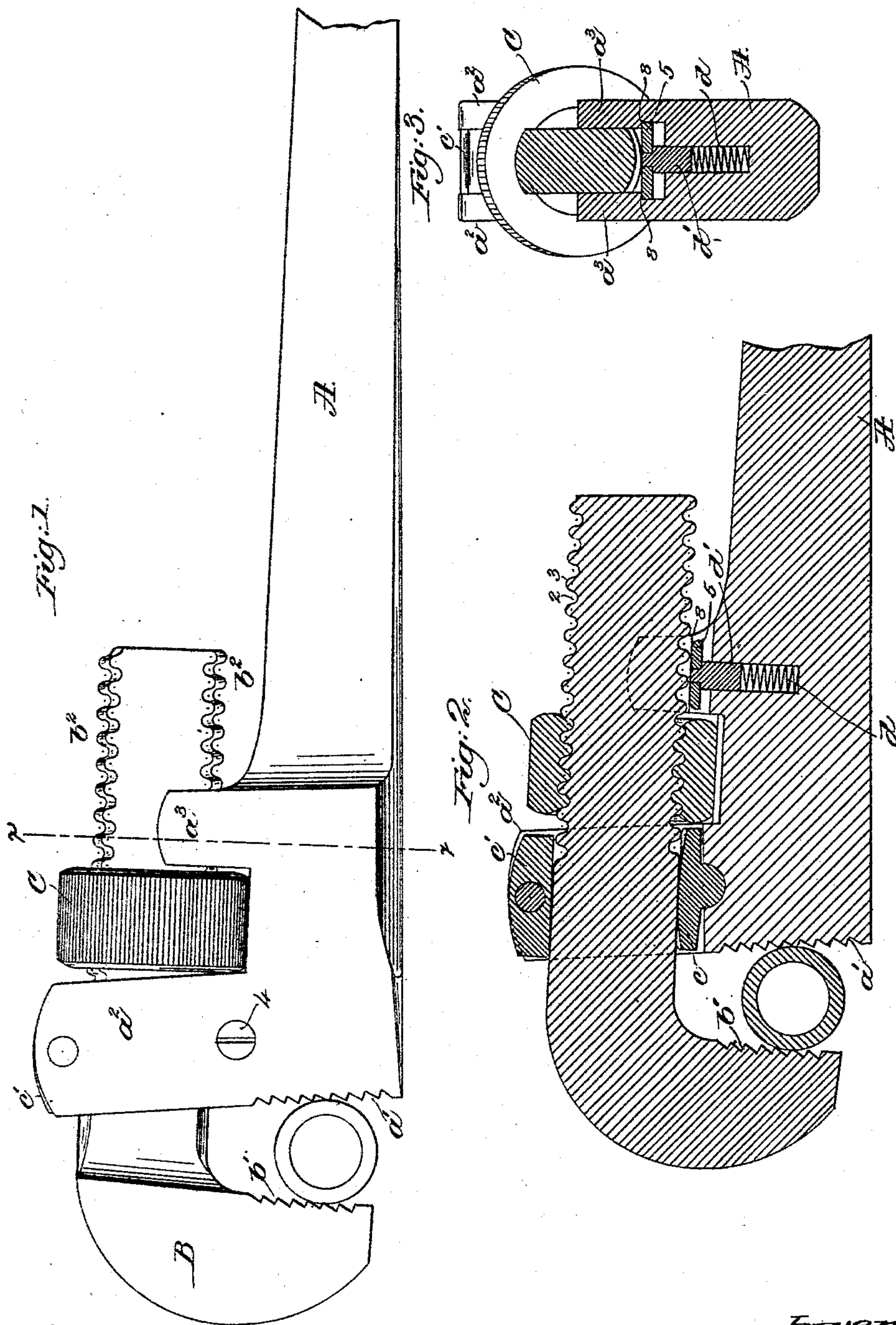


(No Model.)

J. H. VINTON.  
WRENCH.

No. 414,663.

Patented Nov. 5, 1889.



Witnesses.  
Fred. S. Grumb of  
Frederick L. Emery.

Inwitness  
John H. Vinton,  
by Leroy Gregory, attys.



# UNITED STATES PATENT OFFICE.

JOHN H. VINTON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE TRIMONT  
MANUFACTURING COMPANY, OF PORTLAND, MAINE.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 414,663, dated November 5, 1889.

Application filed December 18, 1888. Serial No. 293,975. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. VINTON, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Wrenches, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention is an improvement on that described in my patent, No. 397,618, dated February 12, 1889.

The improvement will be pointed out first and then particularly claimed.

Figure 1, in side elevation, represents a wrench embodying my invention; Fig. 2, a longitudinal section thereof; and Fig. 3, a cross-section in the line  $x$ , Fig. 1.

A is the fixed jaw, it having a toothed surface  $a'$ , two like ears  $a^2$ , and two short lugs  $a^3$ .

B is the movable jaw, having a toothed surface  $b'$ , and threaded along its shank, as at  $b^2$ . The threads of the movable jaws of wrenches are usually made angular; but, owing to the liability of breakage of the jaw, I believe consequent upon this shape of the threads, I make the threads  $b^2$  thereon in such form that the grooves between adjacent threads are curved at the bottom, rather than flat, or so that the spaces between adjacent projections of the screw-threads are of circular form, as represented at 2, and I have made the crowns of the threads also circular in cross-section, as at 3.

C is a nut having threads to fit the screw-threads of the movable jaw.

The fixed jaw between the ears  $a^2$  has, as shown, two rockers  $c$   $c'$ , such as shown in my said patent. Herein I have provided the fixed jaw with a screw 4, the point of which enters loosely a hole at the center of oscillation of the rocker  $c$ , the said screw preventing displacement of the said rocker.

The fixed jaw is provided with a recess, in which is placed a spring  $d$ , which acts against a plunger  $d'$ , having, as shown, an enlarged head 5, the outward movement of which is arrested by shoulders 8 at the inner side of the lugs  $a^3$ . The strength of the spring  $d$  is sufficient to normally keep the head of the plunger against the shoulders 8, the latter

thus standing normally in position to act as a yielding stop for the threaded part of the shank of the movable jaw as the same is moved toward the fixed jaw by the pressure of a pipe being grasped by or already inserted between the jaws, as represented in the drawings. In the working of the wrench in regular manner the head of the spring-plunger stands normally against the said shoulders 8. In case the jaw has any tendency to set, the operator of the wrench has only to grasp the threaded end of the movable jaw and cause it to be pressed toward the fixed jaw with a force sufficient to overcome the strength of the spring. In case the spring-plunger were omitted and the movable jaw, when applying the wrench to a pipe, were thrown fully back in a small or cramped place, so that the fixed jaw could not be farther moved backward, then the movable jaw would be "set," as it is called, and the wrench would have to be forced off by hammering, &c. This difficulty does not, however, happen with a wrench having the spring-plunger located as described, for when applying the wrench to a pipe the spring-plunger normally acts to prevent the serrated part of the movable jaw from taking the farthest position possible from the serrated portion  $a'$ , and hence, if there is any tendency of the jaw to set, the operator, by grasping the shank end of the movable jaw and pushing it to compress the spring, separates the two faces of the jaws far enough to release the pipe.

I claim—

1. The fixed jaw provided with ears  $a^3$  and recessed for the reception of a spring and plunger, the movable jaw, and connections, substantially as described, between it and the fixed jaw to support the movable jaw and permit it to both slide and tip on or with relation to the fixed jaw, combined with a spring and a plunger, and a stop for the same, as a shoulder 8, to limit its outward movement, the said plunger acting to check the movement of the threaded end of the shank of the movable jaw toward the fixed jaw during the usual movement of the wrench, as when the latter is applied to and on a pipe, the plunger being, however, capable of yield-



ing and the said spring of being compressed  
by the application of additional power, as  
described, to permit the shank of the mov-  
able jaw to have more than its normal move-  
5 ment when the hold of the wrench is to be re-  
lieved from the pipe in a cramped position or  
narrow space, substantially as described.

2. A wrench having a fixed jaw and the  
usual movable tipping jaw and interposed  
10 connections, combined with the plunger  $d'$ ,  
arranged in a recess in the fixed jaw and  
having the enlarged head 5, the spring  $d$ , ar-  
ranged in the said recess beneath the plunger

and normally projecting such plunger to-  
ward the movable jaw, and a stop or shoul- 15  
der, such as 8, on the ears  $a^3$  to arrest the  
outward movement of the plunger, substan-  
tially as described.

In testimony whereof I have signed my name  
to this specification in the presence of two sub- 20  
scribing witnesses.

JOHN H. VINTON.

Witnesses:

GEO. W. GREGORY,  
BLANCHE DEWAR.