

(No Model.)

D. P. FOSTER.

PIPE OR NUT WRENCH.

No. 282,298.

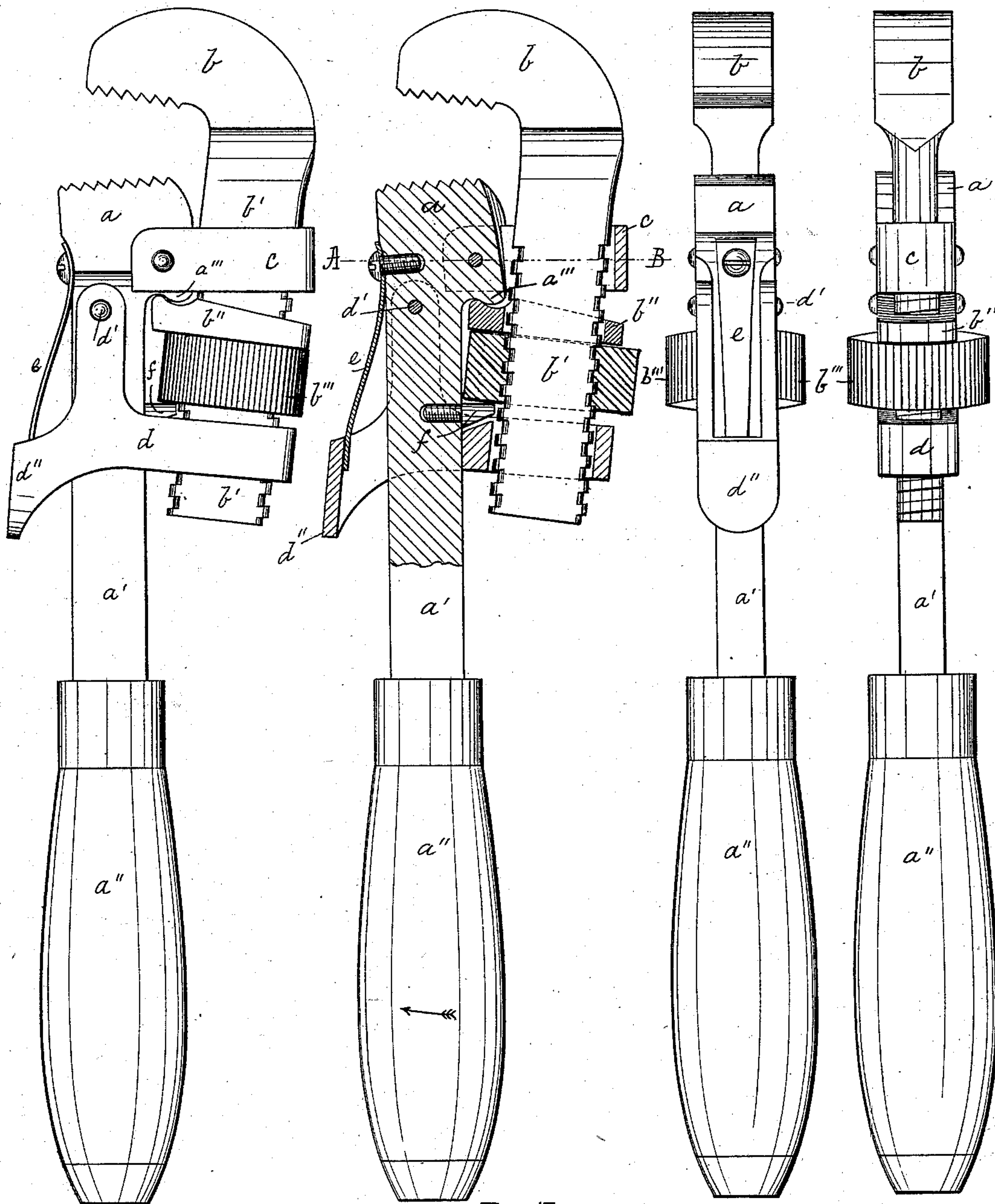
Patented July 31, 1883.

Fig:1.

Fig. 2.

Fig. 3.

Fig. 4



Witnesses.

Henry Chadborn<sup>d</sup>  
Sarah M. Goodrich

Fig. 5.

Inventory.

Dan. P. Foster,

Wm. Andrew  
his atty.



# UNITED STATES PATENT OFFICE.

DAN P. FOSTER, OF WALTHAM, MASSACHUSETTS.

## PIPE OR NUT WRENCH.

SPECIFICATION forming part of Letters Patent No. 282,293, dated July 31, 1883.

Application filed December 16, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, DAN P. FOSTER, a citizen of the United States, residing at Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pipe or Nut Wrenches; and I do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawings.

This invention relates to improvements in pipe or nut wrenches; and it is carried out as follows, reference being had to the accompanying drawings, where—

Figure 1 represents a side elevation, and Fig. 2 a longitudinal section, of the improved wrench. Fig. 3 represents a front view, and Fig. 4 represents a rear view, of the same. Fig. 5 represents a cross-section on the line A B, shown in Fig. 2.

Similar letters refer to different parts wherever they occur on the different parts of the drawings.

The wrench is composed of the stationary jaw *a*, with its shank *a'* and handle *a''*, and the movable jaw *b*, with its screw-threaded shank *b'*, as shown. Both jaws may be made plain or serrated, according to the uses to which the wrench is to be put. To the rear of the stationary jaw *a* is rigidly affixed or made in one piece with it, the slotted guide *c* for the shank *b'* of the movable jaw *b*, as shown in Figs. 1, 2, and 5. In addition to the rigid guide-piece *c*, I hinge at *d'*, to the stationary jaw *a* or its shank, the movable guide *d*, which is also slotted in its rear end, so as to serve as a guide or bearing for the lower end of the shank *b'* of the movable jaw *b*, as shown. The movable guide *d* extends in front of the stationary shank *a'* as a thumb-piece, *d''*, which is normally acted on by the spring *e*, secured in its upper end to the front of the stationary jaw *a*, and having its lower free end pressing on the inside of the thumb-piece *d''*, so as to automatically hold the swinging guide *d*, shank *b'*, and its jaw *b* in their relative positions to the stationary jaw *a* and its shank *a'*, as shown in Figs. 1 and 2, when the wrench is not in use. The rear of the stationary jaw *a* has a downward-projecting fulcrum edge or projec-

tion, *a'''*, against which the correspondingly-grooved washer *b''* is brought to bear as the screw-threaded shank *b'* is moved upward by means of the serrated thumb-nut *b'''*, which latter surrounds the shank *b'* and has its under side supported on the pin or projection *f*, secured to or made in one piece with the rear of the stationary shank *a'*, which pin or projection serves to bring the nut *b'''* back to its normal position when the grip of the jaw is released, and the spring *e* causes the movable guide *d* and shank *b'* to swing to the position shown in Figs. 1 and 2. The pin or projection *f* is made long enough to prevent the nut *b'''* from dropping off it when the thumb-piece *d''* is brought to a stop against the shank *a'*.

In using the wrench the movable jaw *b* is first adjusted by means of turning the nut *b'''*, so that the object to be grasped may easily be introduced between the jaws *a* and *b*, after which the operator takes hold of the handle *a''*, and with his thumb presses the thumb-piece *d''* toward the shank *a'*, causing the movable jaw *b* to turn on the stationary fulcrum *a'''* and to close upon the object to be grasped. Simultaneously with depressing the thumb-piece *d''* the operator moves the handle *a''* in the direction shown by arrow in Fig. 2, by which a very firm grip is obtained by the jaws *a b* upon the object to be turned, which grip is instantaneously released the moment the handle *a''* is moved in an opposite direction to that shown by arrow in Fig. 2, the spring *e* causing the grooved washer *b''* and the shank *b'*, with its jaw *b*, to turn on the fulcrum *a'''* to the position shown in Figs. 1 and 2, and thus automatically to expand the jaws *a b* from each other and releasing their hold on the object.

It will be seen that no strain whatever comes on the stationary guide *c* or movable guide *d* in using the wrench, but is transferred from the stationary jaw *a* and its fulcrum *a'''* to the washer *b''*, nut *b'''*, and screw-threaded shank *b'*, and its jaw *b*, as fully shown and hereinabove described.

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



The herein-described pipe or nut wrench,  
consisting of the stationary jaw *a*, its shank *a'*,  
fulcrum *a'''*, stationary guide *c*, and hinged  
guide *d*, with its thumb-pieces *d''* and spring  
5 *e*, in combination with the movable jaw *b*, its  
screw-threaded shank *b'*, notched washer *b''*,  
nut *b'''*, and supporting-pin *f*, as and for the  
purpose set forth.

In testimony whereof I have affixed my sig-  
nature in presence of two witnesses.

DAN P. FOSTER.

Witnesses:

ALBAN ANDRÉN,  
HENRY CHADBURN.