

(No Model.)

H. K. CARPENTER.
PIPE WRENCH.

No. 464,192.

Patented Dec. 1, 1891.

Fig. 1.

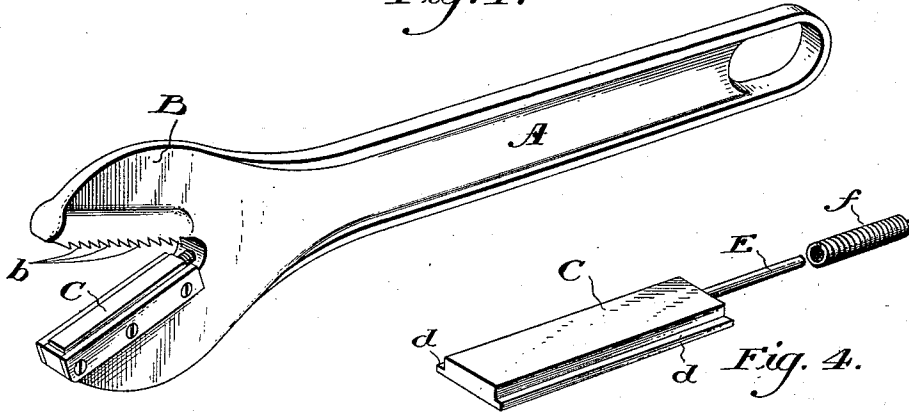


Fig. 2.

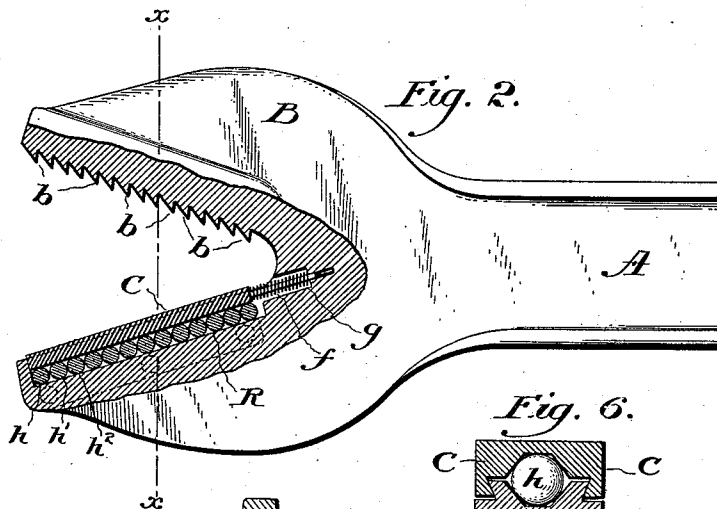


Fig. 5.

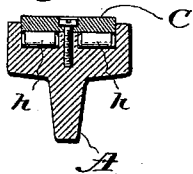


Fig. 6.

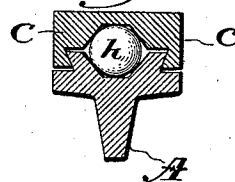
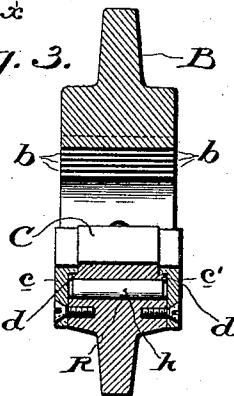


Fig. 3.



WITNESSES:

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PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 464,192, dated December 1, 1891.

Application filed January 19, 1891. Serial No. 378,386. (No model.)

To all whom it may concern:

Be it known that I, HALSEY K. CARPENTER, a citizen of the United States, residing at Palenville, county of Green, and State of New York, have invented a new and useful Improvement in Pipe-Wrenches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates particularly to a novel construction for the jaws of said wrench, as will hereinafter be more particularly pointed out.

In the drawings, Figure 1 represents a perspective view of my improved wrench. Fig. 2 is a view of my pipe-wrench, the jaws being partly in section. Fig. 3 is a section on the line *x x*, Fig. 2. Fig. 4 is a detached view of jaw-plate and spring-stem. Fig. 5 is a cross-section of the lower jaw of the wrench. Fig. 6 is a modified form showing the lower jaw in section.

A is the handle and body of wrench. B is one of the jaws of said wrench, serrated, as shown at *b b*. This jaw B may be made integral with the body of the wrench or may be separable from said body. In the drawings it is shown integral, although it may be connected in any manner with the body without departing from my invention.

C is a movable jaw-plate resting in suitable guides *c* and *c'*, said guides *c* and *c'* being provided with projections *c²* and *c³*, which are adapted to slide in grooves *d* in the said guide-plate C. *e* is a stem projecting from the said jaw-plate C, which stem is surrounded by the spring *f*. *g* is an orifice in the body of said wrench, in which the stem *e* is adapted to enter, (see Fig. 2,) the spring *f* resting between the end of the movable jaw-plate *c* and the body of the wrench. *b b' b²*, &c., are rollers which are seated in a recess R in the body of the wrench, as shown in Figs. 2 and 3, and upon which rollers the jaw-plate C rests. In place of the rollers shown, any rolling surface or surfaces may be used, upon which the jaw-plate C rests, without departing from my invention.

As may be seen, the object to be acted upon is caught between the teeth *b b* of one jaw and the jaw-plate C of the other jaw, and the

first tendency is to cause the jaw-plate to slide inwardly, which more firmly locks the object between the gripping-jaws, preventing any slipping when the wrench is turned, and also relieving a great deal of the strain upon the teeth of the other jaw. When the wrench is moved back to make another turn, the spring *f* causes the jaw-plate to return to its normal position, (the first action having compressed the spring,) and on the next turn the same action, as before described, takes place. The rollers under the jaw-plate C allow said jaw-plate to move with a minimum of friction. In place of using the jaw-plate C, I can remove it, in which case the rollers themselves would form the sliding surface, between which sliding surface and the jaw B the object is gripped.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. As a new article of manufacture, a wrench provided with a jaw the gripping-surface of which is adapted to slide.

2. As a new article of manufacture, a wrench provided with a jaw the gripping-surface of which is adapted to slide, said jaw being provided with a rolling-surface upon which said gripping-surface slides.

3. In a wrench, in combination, guides integral with or secured to the body of the wrench, rolling-surfaces secured between said guides, and a jaw-plate adapted to slide in said guides and upon said rolling-surfaces.

4. In a wrench, in combination, guides integral with or secured to the body of the wrench, rolling-surfaces secured between said guides, and a jaw-plate adapted to slide in said guides and upon said rolling-surfaces, said jaw-plate being provided with a stem, and an orifice in the body of said wrench, in which said stem is adapted to move.

5. In a wrench, in combination, guides integral with or secured to the body of the wrench, rolling-surfaces secured between said guides, a jaw-plate adapted to slide in said guides and upon said rolling-surfaces, said jaw-plate being provided with a stem, an orifice in the body of said wrench in which stem is adapted to move, and a spring surrounding said stem and resting between the body of said jaw-plate and the body of the wrench.

6. In a wrench, in combination, a rigid jaw,

and a jaw the gripping-surface of which is adapted to slide.

7. In a wrench, in combination, a rigid jaw, and a jaw the gripping-surface of which is adapted to slide, and rolling-surfaces upon which said gripping-surface slides.

8. In a wrench, in combination, a rigid jaw provided with teeth, as *b b*, and a jaw the gripping-surface of which is adapted to slide.

9. In a wrench, in combination, a rigid jaw provided with teeth, as *b b*, a jaw the gripping-surface of which is adapted to slide, and rolling-surfaces upon which said gripping-surface slides.

10. The combination of a rigid jaw with a jaw consisting of guides integral with or secured to the body of the wrench, rolling-surfaces secured between said guides, and a jaw-plate adapted to slide in said guides and upon said rolling-surfaces.

11. The combination of a rigid jaw provided with teeth, as *b b*, with a jaw consisting of guides integral with or secured to the body of the wrench, rolling-surfaces secured between said guides, and a jaw-plate adapted to slide in said guides and upon said rolling-surfaces.

12. The combination of a rigid jaw with a jaw consisting of guides integral with or secured to the body of the wrench, rolling-surfaces secured between said guides, a jaw-plate adapted to slide in said guides and upon said rolling-surfaces, said jaw-plate being provided with a stem, and an orifice in the body of said wrench in which said stem is adapted to move.

13. The combination of a rigid jaw pro-

vided with teeth, as *b b*, with a jaw consisting of guides integral with or secured to the body of the wrench, rolling-surfaces secured between said guides, a jaw-plate adapted to slide in said guides and upon said rolling-surfaces, said jaw-plate being provided with a stem, and an orifice in the body of said wrench in which said stem is adapted to move.

14. The combination of a rigid jaw with a jaw consisting of guides integral with or secured to the body of the wrench, rolling-surfaces secured between said guides, a jaw-plate adapted to slide in said guides and upon said rolling-surfaces, said jaw-plate being provided with a stem, an orifice in the body of said wrench in which said stem is adapted to move, and a spring surrounding said stem and resting between the body of said jaw-plate and the body of the wrench.

15. The combination of a rigid jaw provided with teeth, as *b b*, with a jaw consisting of guides integral with or secured to the body of the wrench, rolling-surfaces between said guides, a jaw-plate adapted to slide in said guides and upon said rolling-surfaces, said jaw-plate being provided with a stem, an orifice in the body of said wrench in which said stem is adapted to move, and a spring surrounding said stem and resting between the body of said jaw-plate and the body of the wrench.

In testimony of which invention I have hereunto set my hand.

HALSEY K. CARPENTER.

Witnesses:

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