(No Model.)

G. McKERCHER.

PIPE WRENCH.

No. 474,300. Patented May 3, 1892.

Fig. I.

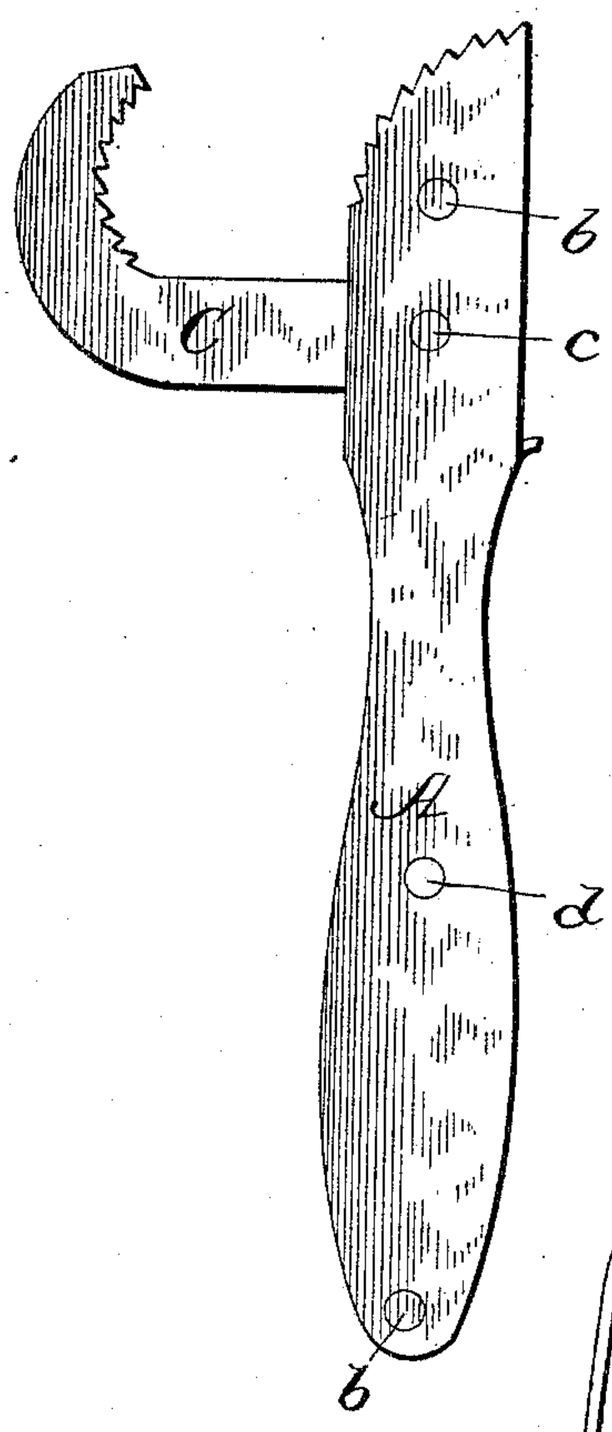


Fig. V.

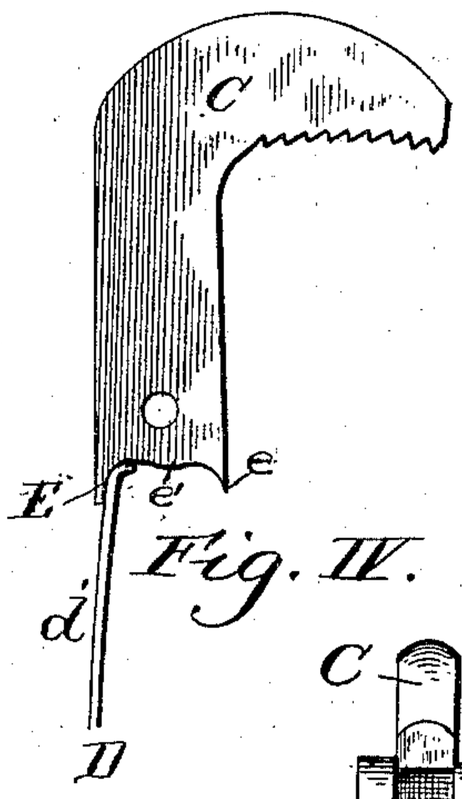


Fig. II.

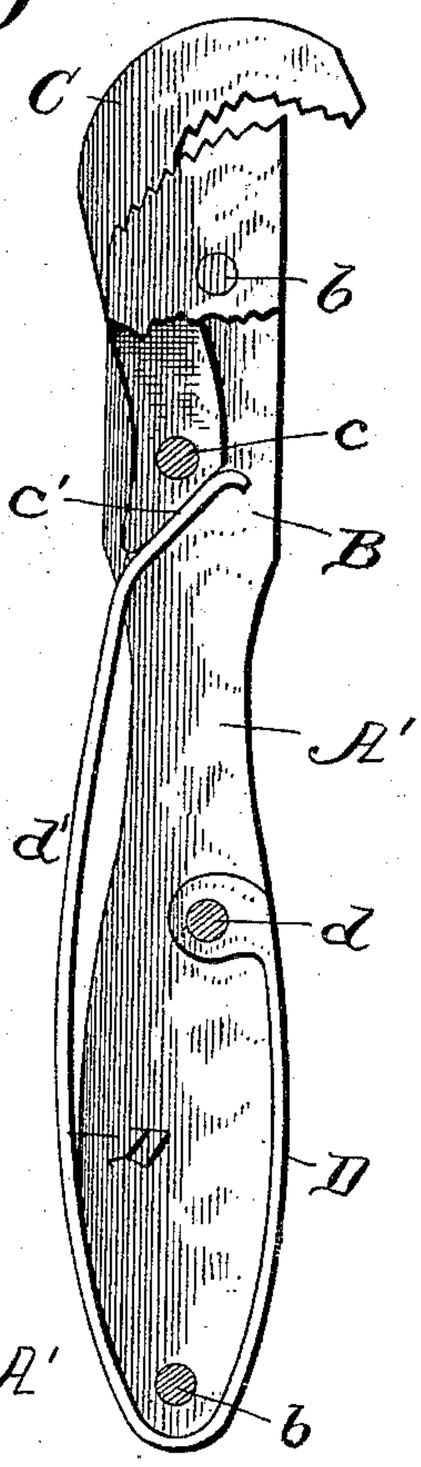


Fig. IV.

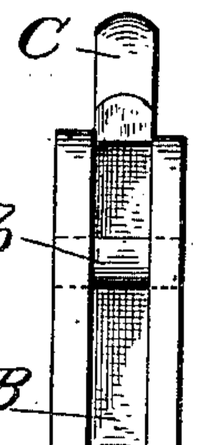
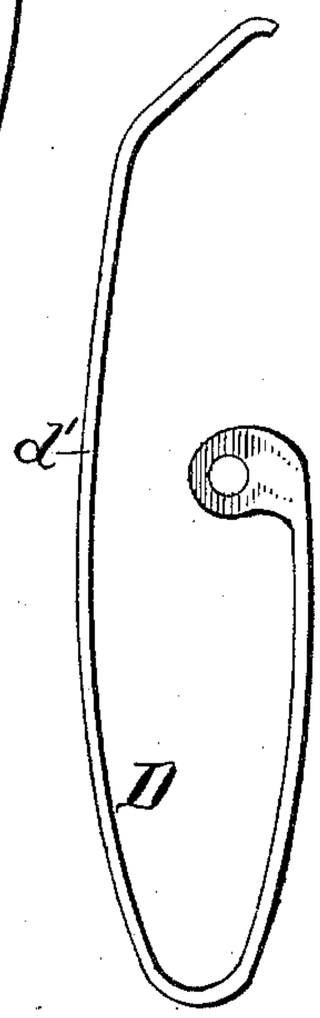
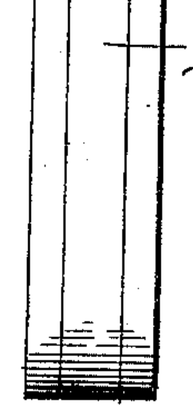


Fig. III.





Witnesses:
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Inventor:
George McKercher,
By his Attorneys,
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UNITED STATES PATENT OFFICE.

GEORGE McKERCHER, OF JONESVILLE, MICHIGAN, ASSIGNOR OF THREE-FOURTHS TO EDWARD McKERCHER, WILLIAM S. COLEMAN, AND FRANK J. McENTEE, OF SAME PLACE.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 474,300, dated May 3, 1892.

Application filed December 15, 1891. Serial No. 415,165. (No model.)

To all whom it may concern:

Be it known that I, GEORGE McKERCHER, a citizen of the United States, residing at Jonesville, in the county of Hillsdale and State of Michigan, have invented certain new and useful Improvements in Pipe-Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in pipe-wrenches; and the object is to provide a simple device which can be easily operated, which will grasp the pipe or other cylindrical object in a firm and rigid manner, and can be readily removed from the pipe or object.

With these ends in view my invention contemplates the use of two plates, which form the handle and rigid jaw of the wrench, and are secured together in a suitable manner. Sufficient space is left between the two plates to receive the movable jaw, which is pivotallly secured at or near the upper ends of the plates, and this pivoted jaw is operated and controlled by a spring secured between the plates and arranged to bear on the heel of the pivoted jaw to force or press the same normally toward the rigid jaw, so that the pipe can be gripped between the jaws.

My invention further consists of certain details of construction and arrangement of parts, which will be fully pointed out hereinafter.

I have illustrated my invention in the accompanying drawings, in which—

Figure I is an elevation showing the movable jaw forced or pressed away from the rigid jaw. Fig. II is a similar view with the movable jaw in its normal closed position, one of the plates being partially broken away. Fig. III is a detail view of the spring. Fig. IV is a front view of the wrench, and Fig. V is a view of the pivoted jaw, showing a modified construction.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A A′ designate the two plates, which coincide or register with each other, and are shaped to the form of a handle at the lower part while the upper ends of the plates are beveled. These plates are connected together by bolts, rivets, or pins *b* at convenient points, and said plates are arranged parallel to provide a space B between them. The pivoted jaw and the spring are arranged in this space B between the plates, as shown.

The movable jaw C is fitted on a pivot-pin *c* at or near the upper ends of the plates, and the inner convex edge of the jaw is toothed or serrated, the pivoted jaw being so shaped and arranged that it lies substantially flush with the rigid jaw when the wrench is not in use. (See Fig. II.) The lower end or heel of the pivoted jaw is beveled to form a bearing-surface *c′* for the free end of the spring D.

The spring D is secured at one end between the plates A A′ on a bolt *d* at or about the middle of said plates, and it is bent around the lower bolt *b* to the rear edge of the plates and extends up between the spaced plates and bears against the beveled surface *c′* of the pivoted jaw. The spring D is bent and shaped to conform to the contour of the handle, and it lies flush, or nearly so, with the front edges of the plates, while it bows somewhat, as at *d′*, at the rear edges of the plates when the wrench is not in use. It will thus be seen that the spring and pivoted jaw, constituting the only movable parts of the wrench, are partially inclosed within the two plates A A′, and the adjustment of the movable jaw is reduced to the simplest form.

As shown in Fig. II, the spring D bears against the beveled surface *c′* of the pivoted jaw and holds it in a normally-closed position, the spring bowing slightly, as at *d′*, beyond the rear edges of the plates. When it is desired to open the jaws, it is only necessary to compress the spring at *d′*, which releases the pivoted jaw and permits it to assume an open position with reference to the rigid jaw. The upper end of the spring D is bent to correspond with the inclination of the beveled surface *c′* of the pivoted jaw, and it will be found, when the spring is compressed, that besides releasing the pivoted jaw the frictional contact of said spring with the bev-

eled surface *c'* will tend to throw the pivoted jaw back and open it, as shown in Fig. I.

I am aware that changes in the form and proportion of parts and details of construction can be made without departing from the spirit or sacrificing the advantages of my improvements, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

In the drawings I have shown the rigid and movable jaws as having convex and concave working surfaces or edges, respectively; but it is obvious that the form and shape of either jaw may be changed, as desired, as said jaws can be made straight, concave, or convex without departing from the spirit of my invention.

The heel of the pivoted jaw is beveled, as shown in Figs. I and II, or it can be constructed as indicated in the detail, Fig. V, in which a point or extension E is provided on the rear edge of the lower end of the jaw, and another shorter point or extension *e* on the opposite edge. Between these two extensions the end of the jaw is substantially straight with a slight bulge *e'* at the middle, and the end of the spring D is arranged to bear against this straight edge and play back and forth between the extensions E *e* as the pivoted jaw is opened or closed.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A wrench consisting of the two plates provided with the rigid jaw, the movable jaw pivoted between said plates and having its heel below the pivot thereof, and the spring fastened at one end to said plates on one side thereof, said spring extending around the lower ends of the plates and extending upwardly in rear of the same, the rear part of the spring being bowed outwardly beyond the rear edges of the plates and the upper end of the spring bearing against the heel of the pivoted jaw, substantially as described.

2. A wrench consisting of the two plates provided with the rigid jaw, the pivoted jaw having its heel below the pivot thereof and provided with the downward extensions on said heel, and the spring having one end secured between the plates and its other end bent around the ends of the plates and bearing against the heel of said pivoted jaw between the extensions thereon, substantially as described.

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

GEORGE McKERCHER.

Witnesses:
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