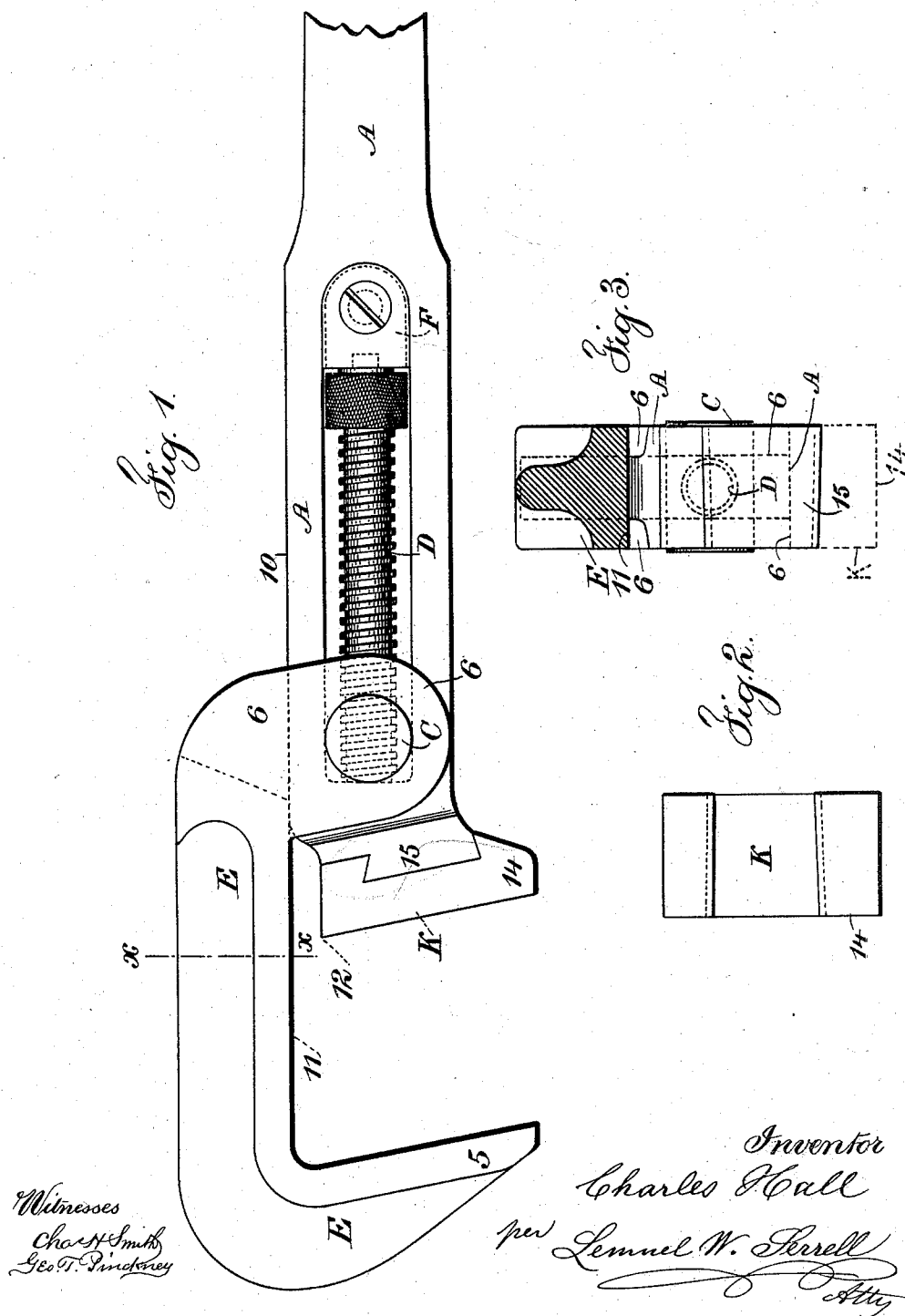


(No Model.)

C. HALL.
PIPE WRENCH.

No. 533,295.

Patented Jan. 29, 1895.



Witnesses
Charles Smith
Geo. T. Pinckney

Inventor
Charles Hall
per Lemuel W. Ferrell
Atty.

UNITED STATES PATENT OFFICE.

CHARLES HALL, OF NEW YORK, N. Y.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 533,295, dated January 29, 1895.

Application filed July 23, 1894. Serial No. 518,332. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HALL, a citizen of the United States, residing in the city, county, and State of New York, have invented an Improvement in Pipe-Wrenches, of which the following is a specification.

In Letters Patent No. 516,485, granted to me March 13, 1894, there is a wrench containing a hook-shaped jaw and also a jaw at the end of the lever handle, the pivot of the hook-shaped jaw forming a nut that is adjusted by a screw within a slot, and in my Patent No. 521,312, the inner surface of the hook-shaped jaw sets back from the line of the adjacent side of the handle jaw, so as to give more space for the reception of a large size pipe.

I find that the principal wear in using this pipe wrench comes upon the angle at the edge of the jaw and the end of the lever handle, and that it is advantageous to grind the jaw so as to keep this edge sufficiently sharp, and in addition to the foregoing features I find that when the aforesaid wrench is made use of for turning a nut or a bolt, it is advantageous to have the point of the jaw at the end of the lever handle project so as to be adapted to pass down into a recess or between one projection and another in grasping the nut or bolt that is to be turned.

In order to adapt my aforesaid wrench to the various uses desired, I make the jaw at the end of the lever handle removable so that it may be ground from time to time to keep its edge sufficiently sharp and also to allow for the removal of one jaw and the substitution of another in case of prolonged wear or breakage, and the acute-angled edge of the jaw at the end of the lever handle is set back from the line of the side of such lever handle so as to be distant from the inner side of the adjacent hook and facilitate the use of the wrench with a large sized pipe, and this jaw at its opposite edge projects beyond the side of the lever handle so as to be adapted to the grasping of a bolt head, nut or similar polygonal article, thus more fully adapting my improved pipe wrench to the ordinary uses of a monkey wrench.

In the drawings, Figure 1 is a side view of my improved wrench with a portion of the handle broken off. Fig. 2 is a view of the base of the removable jaw detached, and Fig. 3 is

an end view of the wrench with the removable jaw detached and with the swinging jaw in section at the line *x x* of Fig. 1.

The handle A is slotted longitudinally for the reception of the screw D which passes through the pivot C of the swinging hook-shaped jaw F, such pivot C forming a nut to the screw D, and the swinging hook-shaped jaw E is made with two strap portions 6 that pass one at each side of the lever handle A at its slotted portion, and the edge or side 10 of the lever handle A is in line with the edge or side 11 of the swinging hook E when the parts stop one against the other, as seen in Fig. 1, but the chisel-shaped edge 12 of the jaw K is not adjacent to the side 11 but sufficiently distant therefrom to aid in adapting the wrench to the reception of large sized pipes, and the jaw K is made of a separate piece from the lever handle so that it may be of hardened steel, and the parts slip together transversely with dovetailed interlocks that are slightly tapering, so that the jaw K can be firmly connected with the end of the lever handle by being driven on transversely, or it may be separated by driving it in the opposite direction; and by making the dovetailed interlocks in the manner represented, the block 15 at the end of the lever handle A over which the dovetailed portions of the jaw pass, firmly supports the jaw while in use, and the end 14 of such jaw projects sufficiently beyond the edge of the lever handle to allow the end of the jaw to pass in between nuts or other articles that may be adjacent to the nut or bolt to be turned by the action of the wrench, thus greatly facilitating the use of this pipe wrench upon polygonal articles.

It will be observed that the hook-shaped end 5 of the swinging jaw E is also reduced in width so as to be adapted to use the same as an ordinary wrench.

The bearing blocks F may be provided for the end of the screw D, as in my aforesaid patent.

I claim as my invention—

1. The combination in a wrench, of a lever handle a separate jaw at the end of the lever handle having a flat face standing at an acute angle to the lever handle and with a chisel edge at one end and the other end projecting beyond the side of the lever handle and re-

cessed centrally and transversely upon its under surface to receive a dovetailed projection at the end of the lever handle, a swinging hook shaped jaw, and a screw for adjusting the swinging hook in relation to the lever handle, substantially as set forth.

2. The combination in a wrench, of a lever handle a separate jaw at the end of the lever handle having a flat face standing at an acute angle to the lever handle and with a chisel edge at one end and the other end projecting beyond the side of the lever handle and recessed centrally and transversely upon its under surface to receive a dovetailed projection at the end of the lever handle, a swinging hook shaped jaw having strap projections that pass at each side of the lever handle, a pivot pin passing through such strap projections and forming a nut and an adjusting screw in a mortise in the lever handle and acting upon the pivot nut C, substantially as set forth.

3. The combination in a wrench, of a lever handle having a flat face at the end forming an acute angle with the lever handle, a chisel edge at one end of the jaw, off-set from that side of the lever handle, and the other end of the jaw projecting beyond the side of the lever handle, a swinging hook having a flat jaw face that is parallel to the face of the jaw at the end of the lever handle when the swinging jaw is stopped against the side of the lever handle, straps upon the swinging jaw passing at each side of the lever handle, a pivot pin passing through such straps and forming a nut and a screw acting upon said nut and within a longitudinal mortise in the lever handle, substantially as set forth.

Signed by me this 18th day of July, 1894.
CHAS. HALL.

Witnesses:

GEO. T. PINCKNEY,
A. M. OLIVER.