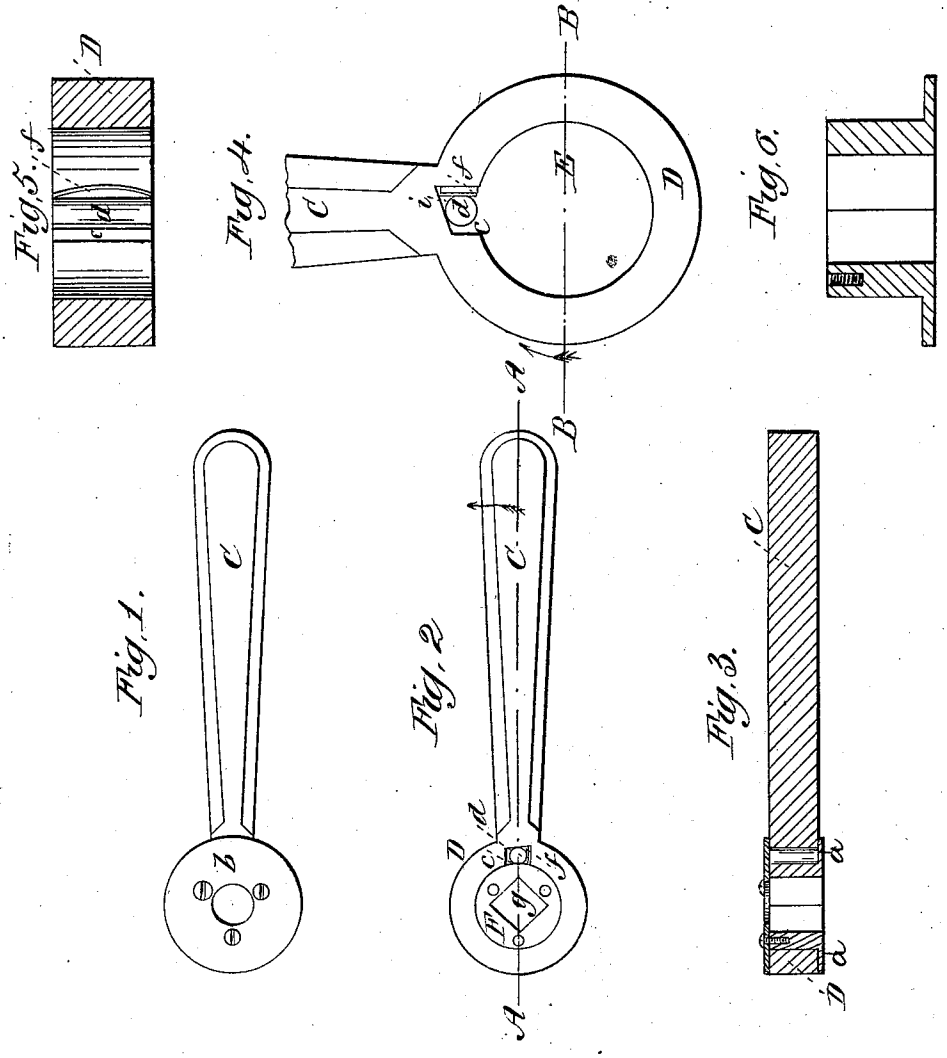
H. D. Walcott,

Wrench.

No. 14,546. Patented Mar. 25, 1856.



N. PETERS, PH.-TO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HALSEY D. WALCOTT, OF PAWTUCKET, MASSACHUSETTS, ASSIGNOR TO H. D. & M. E. WALCOTT.

WRENCH.

Specification of Letters Patent No. 14,546, dated March 25, 1856.

To all whom it may concern:

Be it known that I, HALSEY D. WALCOTT, of Pawtucket, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Wrenches, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a view of the wrench. Fig. 2 a view of the same with the cap *b* removed. Fig. 3 a section on the line A, A of Fig. 2. Fig. 4 a plan upon an enlarged scale, the central portion being removed. Fig. 5 a section on the line B, B, of Fig. 4. Fig. 6 an enlarged section through the core F.

In wrenches as ordinarily constructed a square or polygonal hole is made in one end, which being placed over the nut is turned for the purpose of loosening or tightening it up;—there are however many positions in which it is not practicable for want of room to turn the wrench more than a part of a revolution, and in such cases it is necessary to remove the wrench from the nut each time it has made a portion of a revolution to take a new hold upon the nut. To remedy this inconvenience a wrench has been contrived in which a cylindrical core having a square or polygonal hole in its center and ratchet teeth upon its outside edge, was revolved within a corresponding cylindrical chamber by means of a pawl pivoted to the handle and engaging with the teeth upon the periphery of the core, by which means as the handle was moved in one direction the core was revolved, and as it was moved back in the other direction the pawl slipped over the teeth of the core, which thus remained stationary. There are however several vital objections to this wrench, which it is the object of my present invention to remedy. 1st. The whole strain was thrown upon the center on which the pawl pivoted, and it was not found practicable to allow sufficient space to give this pivot the requisite size and strength to bear the strain. 2d. The teeth upon the periphery of the revolving core soon wore away and the pawl slipped off without turning the core. 3d. There was considerable lost motion of the wrench handle, it being necessary to make the teeth large and strong and at considerable distance from each other, and the wrench could not operate until the pawl was carried back sufficiently far to strike the next tooth behind it.

To remove these objections is the object of my present invention, which consists in the use of a core, so arranged and fitted to a cylindrical chamber that when the wrench is turned in one direction the core shall bind in its chamber, and be revolved with the wrench, but when it is turned in the other direction, it shall move freely without the core, which is thus suffered to remain stationary.

In the accompanying drawings C is the handle; D, the body of the wrench.

E is a cylindrical chamber to which is fitted the nut or core F, which is kept in place by the flange *a*, and cap *b*.

c is a mortise or slot through the body of the wrench, the back wall *i* of which is inclined as seen in Fig. 4.

d is a metallic pin which is dropped into the mortise *c*, and pressed up between the inclined side *i*, and the core F, by the spring *f*. The core F has a hole *g* in its center which may be square or of other polygonal form to adapt it to the nut to be operated upon. When this core is placed upon the nut, and the handle is moved in the direction of the arrow (Fig. 2) the core remains stationary, the bite of the pin *d*, between the core F and the inclined wall *i*, being relieved by the rolling of the pin, and when the handle is moved in a contrary direction the pin is crowded between the core and the inclined wall, and the core is forced to move with the handle. An intermittent rotary motion is thus imparted to the core by the back and forth motion of the handle, and the wrench may be operated in positions where an exceedingly small motion only is allowed to the handle. It will be perceived also that there is no "lost motion" between the handle and the core, as the spring keeps the pin constantly forced up between the core and the inclined wall ready for action upon the first motion of the handle in the proper direction, and it is evident that the greater the resistance offered by the nut the tighter will be the bite of the pin *d*, so that under no circumstances will the core slip within its chamber when it is required to turn with it. By turning the wrench over upon one side or the other the nut may be operated in either direction.

A number of cylindrical cores having dif-

ferent sized holes *g*, may be fitted to the chamber E, to adapt the wrench to operating upon nuts of different size or there may be a number of secondary cores fitted to the hole *g;* these secondary cores having holes of different caliber to fit different sized nuts. These details however form no part of my invention and need not be further described.

What I claim as my invention and desire to secure by Letters Patent is—

The core F, the pin *d*, and the inclined bearing surface *i* in combination with the handle C, operating in the manner substantially as herein set forth.

In testimony whereof I have hereto set my signature this twenty third day of May A. D. 1855.

HALSEY D. WALCOTT.

Witnesses:

LEWIS WALCOTT,

JOSEPH W. NICHOLAS.