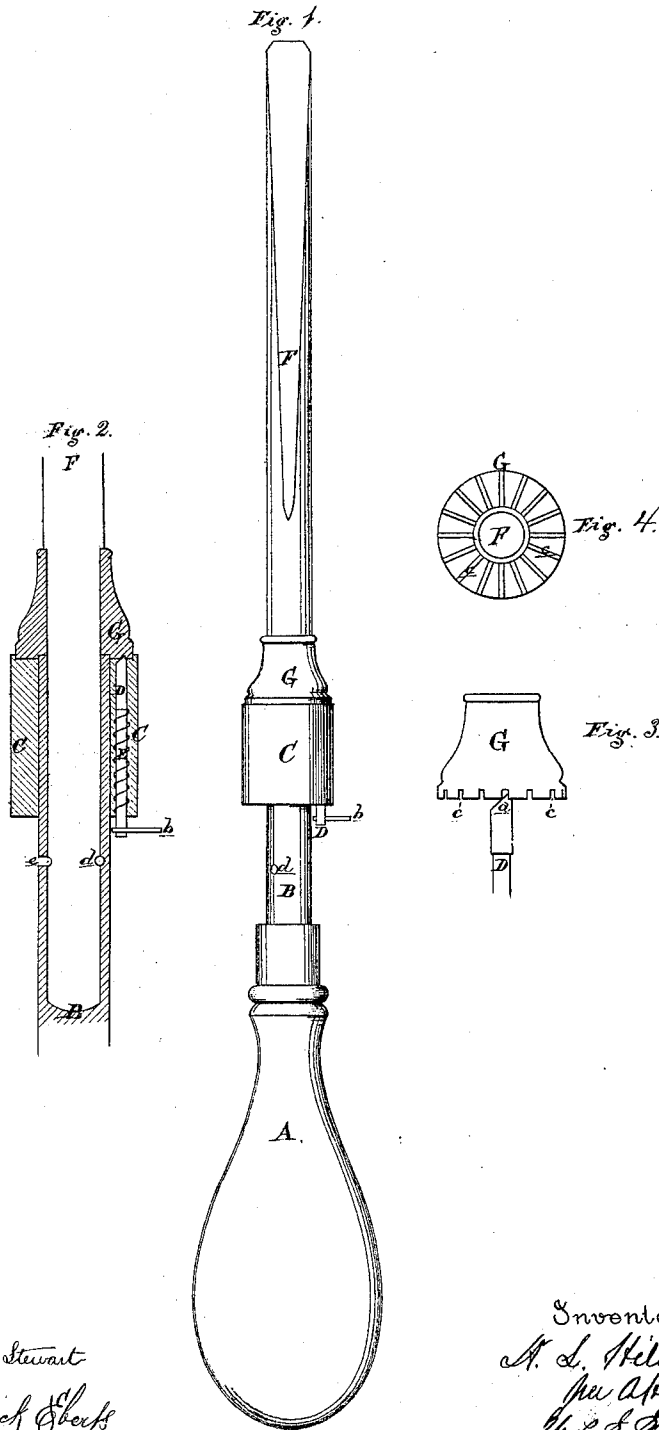


H. L. Hildreth,

Screw Driver.

No. 112,143.

Patented Feb. 28. 1871.



Attest.
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HENRY L. HILDRETH, OF LOCKPORT, NEW YORK.

Letters Patent No. 112,143, dated February 28, 1871.

IMPROVEMENT IN SCREW-DRIVERS.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, HENRY L. HILDRETH, of Lockport, in the county of Niagara and State of New York, have invented a new and useful Improvement in a Ratchet Screw-Driver; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is an elevation of my device;

Figure 2 is a longitudinal section of the operative parts of the same;

Figure 3 is a detached elevation of the pawl and ratchet; and

Figure 4 is a plan of the ratchet-face.

Like letters indicate like parts in each figure.

This invention has for its object the application of a ratchet to the ordinary hand screw-driver in such a manner that the pawl may operate when the tool is rotated in either direction.

The invention consists in the peculiar construction and arrangement of a cylindrical pawl in a case in such a way that the pawl may be reversed so as to engage with the ratchet in either direction, and in the general arrangement of the various parts, as more fully hereinafter set forth.

In the drawing—

A represents a handle, to which is attached the tubular socket B, around the outer end of which is secured a metallic cylinder, C, through a longitudinal opening in which extends a cylinder forming the pawl D, whose outer end is beveled off on one side, as shown at *a*.

On the inner end of the pawl is a short lever, *b*, by which it may be turned on its axis.

The main and rearmost portion of the pawl is made of a lesser diameter than the outer part, and around the smaller part a spiral spring, E, is coiled, whose action is such as to force the beveled end of the pawl outwardly.

F is the screw-driver, the rear part of which is

turned down so as to enter the tubular socket B, with a shoulder abutting on its outer end.

G is an annular ratchet, secured to the screw-driver, so that its serrations *c* will come into close contact with the outer face of the pawl-case C. The serrations in the ratchet are square on their edges and radiate from a common center.

The screw-driver is secured in the socket by a screw, *d*, tapped through one side of the socket, with an end projecting into a groove, *e*, in the shank of the screw-driver.

The operation of the device will be readily seen and understood on reference to the drawing, simply remarking that with the pawl in the position shown in fig. 3 the screw-driver is adjusted to turn to the right, as for screwing home a wood-screw; but, to unscrew, or turn to the left, the pawl must be turned to the left by means of its lever *b*.

In the use of the ordinary screw-driver, at each semi-rotation of the tool the operator shifts his hand on the handle, which renders the bit liable to slip out of the slot in the screw-head, while with this tool he does not relax his grasp upon the handle, and need not slacken up the pressure upon the screw-head, rendering the bit less liable to slip out of the slot. Furthermore, the operation is much quicker and less fatiguing.

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

1. The cylindrical pawl-case C, reversible pawl D, spring E, and annular ratchet G, constructed, arranged, and operating substantially as described, for the purpose specified.

2. The combination and arrangement of the foregoing parts with the screw-driver F, tubular socket B, and handle A, in the manner and for the purpose set forth.

H. L. HILDRETH.

Witnesses:

FREDERICK EBERTS,
M. STEWART.