

R. S. SANBORN.

Improvement in Wrenches.

No. 125,695.

Patented April 16, 1872.

Fig. 1.

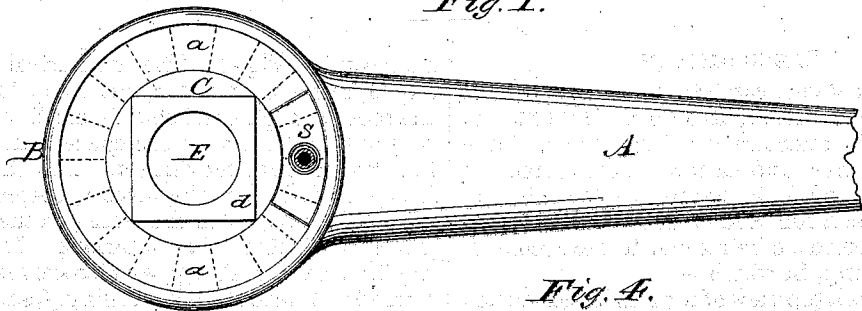


Fig. 4.

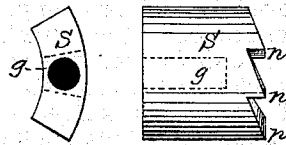


Fig. 2.

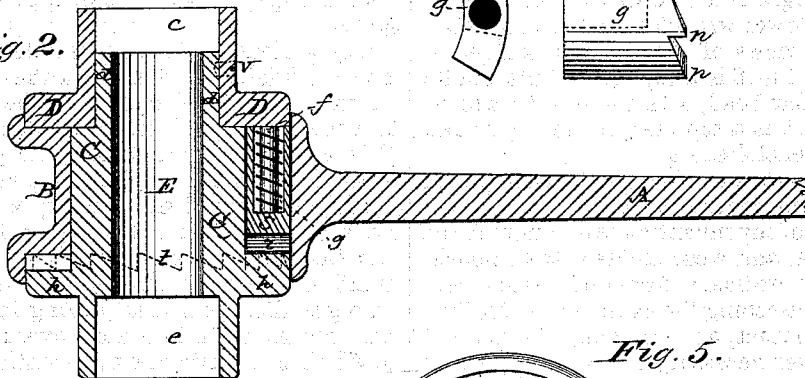


Fig. 5.

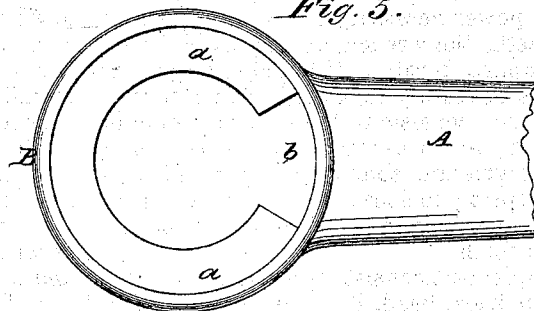


Fig. 3.

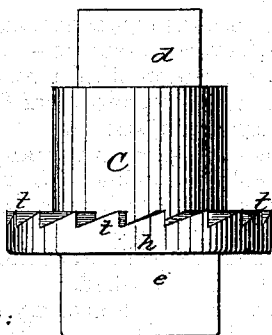
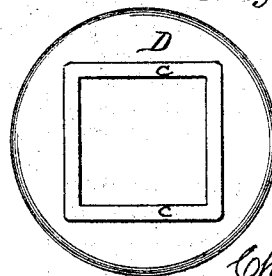


Fig. 6.



Witnesses:

T. C. Drecht.
D. R. Low

Inventor:

Rufus S. Sanborn
By his Atty.
Chas. F. Mansbury

UNITED STATES PATENT OFFICE.

RUFUS S. SANBORN, OF ROCKFORD, ILLINOIS.

IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. 125,695, dated April 16, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, RUFUS S. SANBORN, of Rockford, Winnebago county, Illinois, have invented a new and useful Improvement in Wrenches; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a top view of my improved wrench with the cap D removed. Fig. 2 is a longitudinal central vertical section of the wrench complete. Fig. 3 is a side view of the wrench-cylinder and lower wrench-head; Fig. 4, detail top and side views of the toothed segmental shuttle-bar. Fig. 5 is a top view of the handle with its annular head, with the other parts removed. Fig. 6 is a top view of the cap D and the upper wrench-head *c*.

The same part is marked by the same letter of reference wherever it occurs.

The object of my invention is to diminish the friction, noise, and wear incident to the back-action of the ordinary forms of rose-ratchet wrenches by lessening the extent of the toothed surfaces in contact, and reducing the amount of spring-power necessary to produce the lock of the teeth, the wrench, as improved, being neat, compact, durable, little liable to get out of order, and readily repaired. The nature of the invention consists in the construction and application, to rose-ratchet wrenches, of a toothed segmental shuttle-bar operated by a peculiar spring inclosed in a chamber in said bar, all in the manner hereinafter more particularly set forth.

The implement consists of a handle, A, having a cylindrical head, B, in which the wrench-heads and operative parts are inserted. In the drawing, A marks the handle; B, the cylindrical head; C, the hollow wrench-cylinder, which is inserted in the head B and held in place by the cap D which receives the square projection *d* on the upper end of cylinder C, and is fastened to it by the screw *v*. E is the round opening through the cylinder C. The lower portion of this cylinder forms the lower wrench-head *c*, the upper wrench-head *e* being a part of the cap D. Projecting from the lower part of cylinder C is the annular ratchet-jaw *h*, having the teeth *t* on its upper surface,

as shown in Fig. 3. The cylindrical head B, Fig. 5, has a segment, *b*, cut away to receive the toothed segmental shuttle-bar S, which corresponds in form with the space *b*, in which it has free vertical movement. The shuttle-bar S is provided with the teeth *r*, corresponding in form and size with the teeth *t* on the ratchet-jaw *h*, with which they interlock. It also has a cylindrical chamber, *g*, which receives a spring formed of a piece of rubber tubing, *f*, surrounded by a spiral wire, *s*. This spring reacts with just sufficient force to keep the teeth *r* of the shuttle-bar engaged with those, *t*, of the ratchet-jaw *h*.

The various parts are assembled as follows: The cylinder C is inserted in the head B, the shuttle-bar S is dropped into the chamber *b*, and the spring *f s* inserted in place. The cap D is then put on and fastened in place by the screw *v*, when the implement is ready for use.

It is operated in the ordinary way, and may have one or two handles, as preferred. The shuttle-bar, being but about one-sixth the circumference of the ratchet-jaw, with which it engages, there is a great saving in the friction between the teeth in contact over rose-ratchets in which both jaws are of the entire circumference; and, from its small size and weight, the bar requires but a slight spring-power to throw or slide it to its place to make the lock. For the same reasons the noise and wear are greatly diminished.

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

1. In combination with a rose-ratchet, the segmental toothed shuttle-bar S, constructed and operating as described.

2. The combination and arrangement of the wrench-heads *c e*, cylinder C, ratchet *h*, and segmental shuttle-bar S, in the manner and for the purpose specified.

3. The chamber *g* in the shuttle-bar S, as and for the purpose described.

The above specification of my said invention signed and witnessed at Rockford, Illinois, this twenty-first day of February, A. D. 1872.

RUFUS S. SANBORN.

Witnesses:

A. C. SPAFFORD,
LUCIUS A. TROWBRIDGE.