

C. SINCLAIR,

Ratchet Drill.

No 81,694.

Patented Sept. 1, 1868.

Fig. 1.

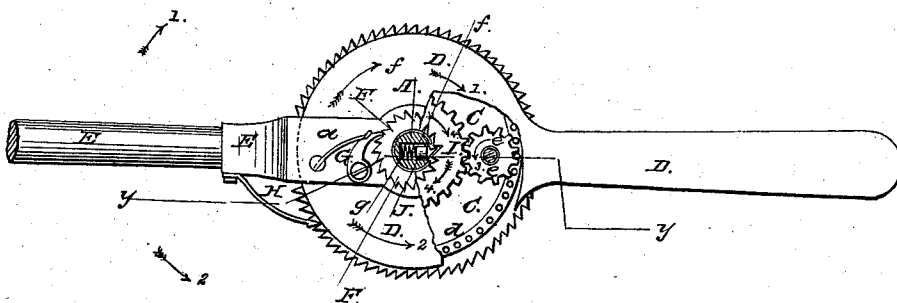
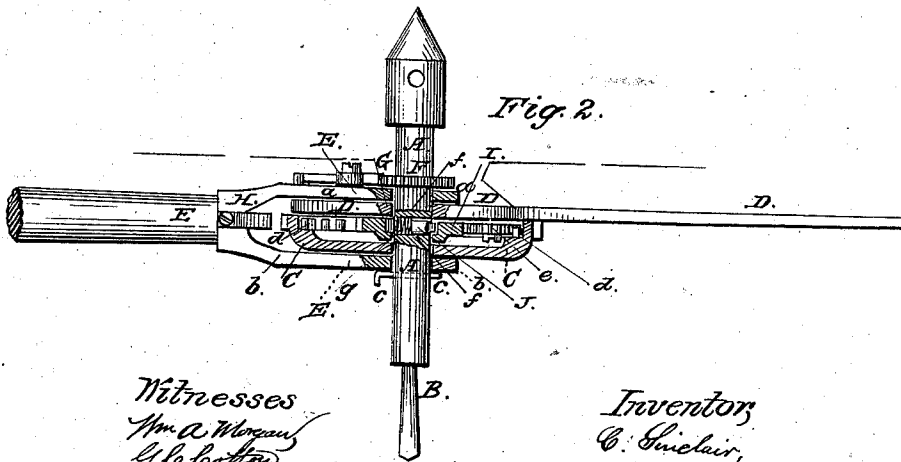


Fig. 2.



Witnesses  
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# United States Patent Office.

CHARLES SINCLAIR, OF NEW YORK, N. Y.

Letters Patent No. 81,694, dated September 1, 1868.

## IMPROVEMENT IN RATCHET-DRILL.

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

### TO ALL WHOM IT MAY CONCERN :

Be it known that I, CHARLES SINCLAIR, of the city, county, and State of New York, have invented a new and improved Ratchet-Drill; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

Figure 1 represents a plan or top view, partly in section, of my improved ratchet-drill, the plane of section being indicated by the line *x x*, fig. 2.

Figure 2 is a vertical longitudinal sectional view of the same, taken on the plane of the line *y y*, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new ratchet-drill of that class which is turned or rotated in the same direction, in whatever direction the handle may be turned or oscillated.

The invention consists in such a combination of the handle with the wheels, pawls, and shell, that the desired result is obtained by simple and efficient means.

A, in the drawing, represents a spindle or arbor, on the end of which the drill B is secured. This spindle is fitted through a wheel, C, a disk or handle, D, and through the opposite ends of the arms of a bifurcated handle, E. The wheel C and disk D are held between the arms *a b* of the handle E, as shown in fig. 2.

The parts C D E are prevented from playing up and down on the spindle, by means of a shoulder, F, formed on the spindle above, and by a pin or shoulder, *e*, fitted through or on the spindle A, below the handle E, as shown.

The shoulder F is, or supports, a ratchet-wheel, into which a spring-pawl, G, pivoted to the arm *a* of the handle E, catches.

By holding the handle D, the drill will be retained in the proper position, and then, by turning the handle E in the direction of arrow 1, in fig. 1, the pawl will carry the wheel F, and with it the spindle A and drill B, around in the same direction.

When, however, the handle E is turned in the opposite direction, which is indicated by the arrow 2, fig. 1, the pawl G will slip on the wheel F, while another pawl, H, which is secured to the handle E, fitting into the toothed edge of the wheel C, will carry the said wheel C around in the same direction of the arrow 2.

The wheel C is provided with internal gearing *d*, into which meshes a pinion, *e*, secured to the handle D, as shown. The pinion meshes into a toothed wheel, I, which is loosely fitted around the spindle A, and which has ratchet-teeth formed on its inner edge, as shown in fig. 1.

J is a bolt fitted into a socket, *f*, that is formed in the spindle A, a spiral or other spring, *g*, being interposed between the end of the socket and the bolt, as shown. The pointed or wedge-shaped end of the bolt is, by the spring *g*, forced against the toothed inner edge of the wheel I.

When the spindle is turned in the direction of the arrow 1, by the pawl G, the bolt J will slip on the wheel I, but when the disk C is turned in the direction of the arrow 2, it will turn the pinion *e* in the direction of the arrow 3, and the same will revolve the wheel I in the direction of the arrow 4, the wheel I carrying, by means of the spring-bolt J, the spindle A and drill B around with it.

Thus, when the whole apparatus is held steady, by means of the handle D, and when the handle E is oscillated around the spindle A, the spindle and drill will be revolved in the direction of the arrows 1 and 4, fig. 1; that is, in whatever direction the handle E may be swung, the drill will be continuously revolved in the same direction.

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

1. The combination of the spindle A, retaining-handle D, and operating-handle E with the pawl G and ratchet-wheel F, and with the ratchet-wheel or disk C, having internal gear with the pinion *e*, toothed wheel I, and spring-bolt J, all made and operating substantially as herein shown and described, the toothed wheel I having ratchet-teeth formed on its inner edge, as set forth.

2. The combination of the drill-spindle A, pinion I, and spring-bolt J, when constructed and arranged as described, as an adjunct to the other mechanism for communicating rotary motion to the drill, substantially as described.

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Witnesses :

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