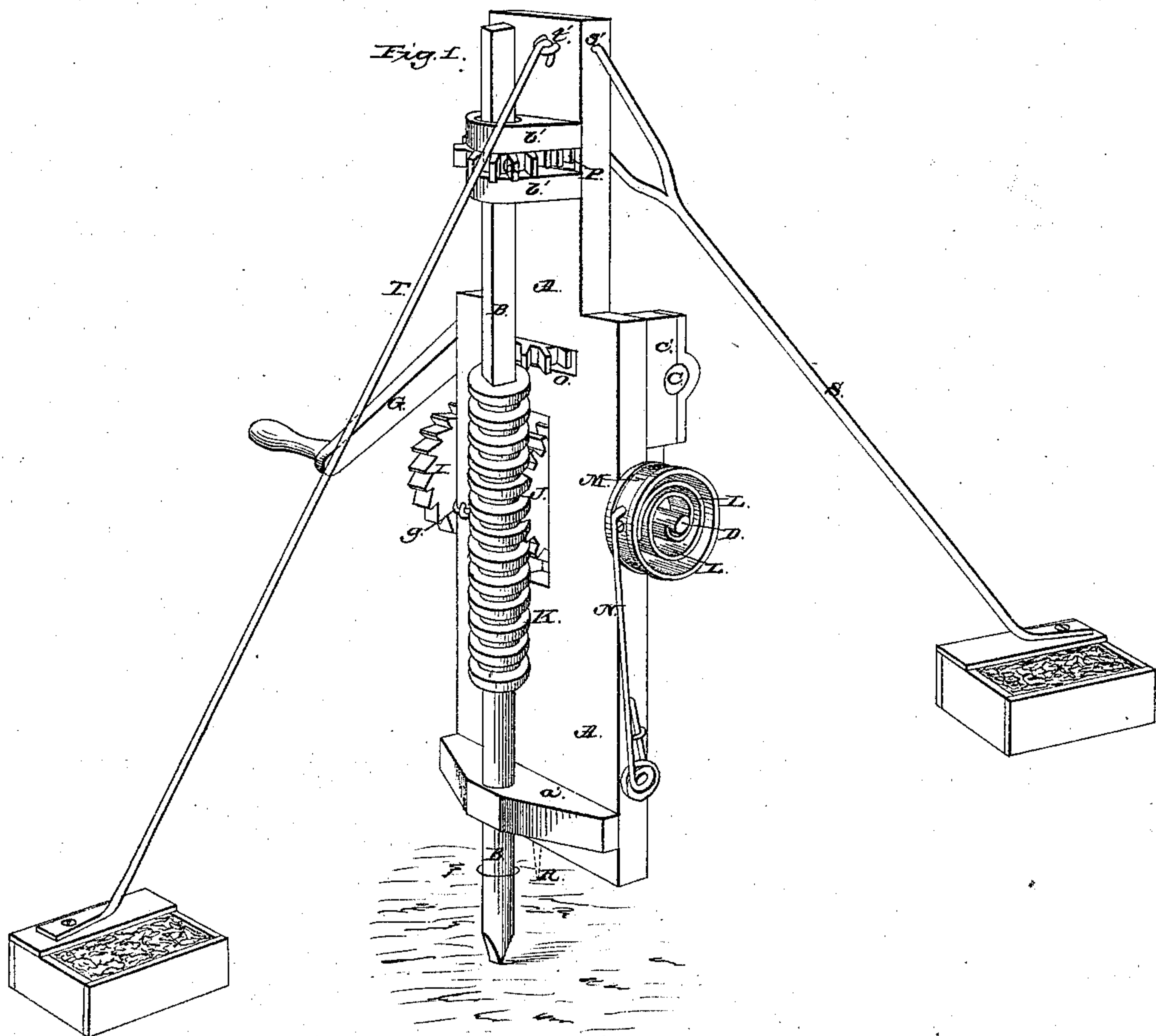


2 Sheets. Sheet 1.  
W. M. Barton,

Stone Drill.

N<sup>o</sup> 15,595.

Patented Aug. 19, 1856.

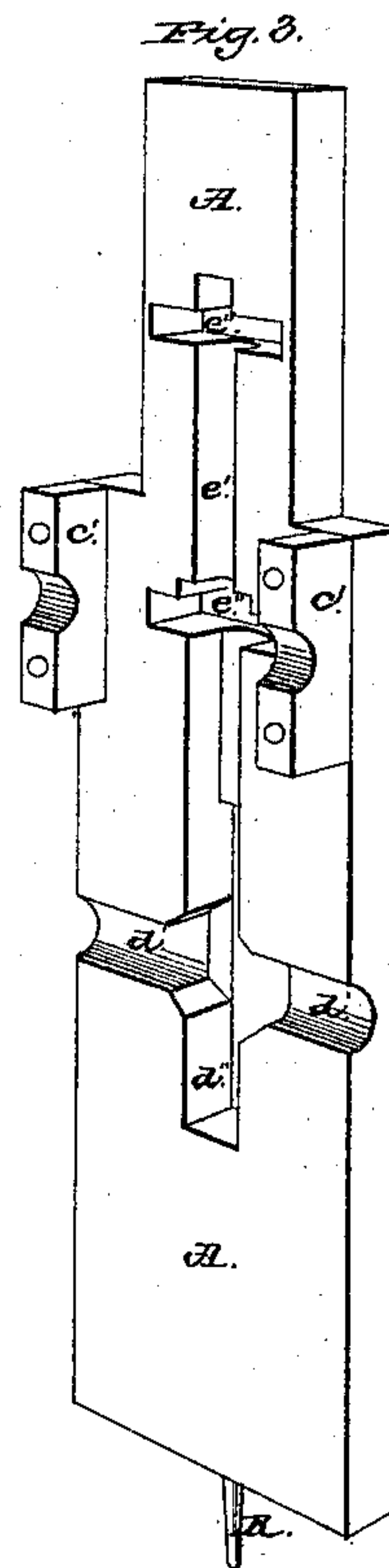
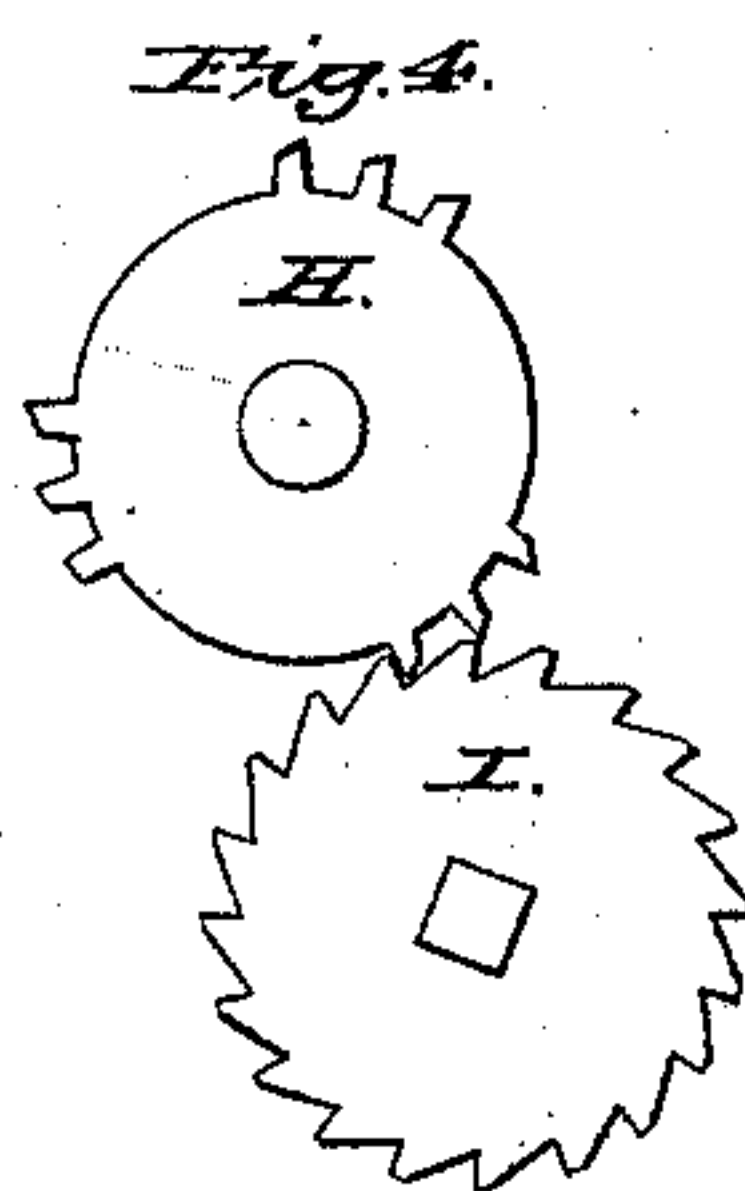
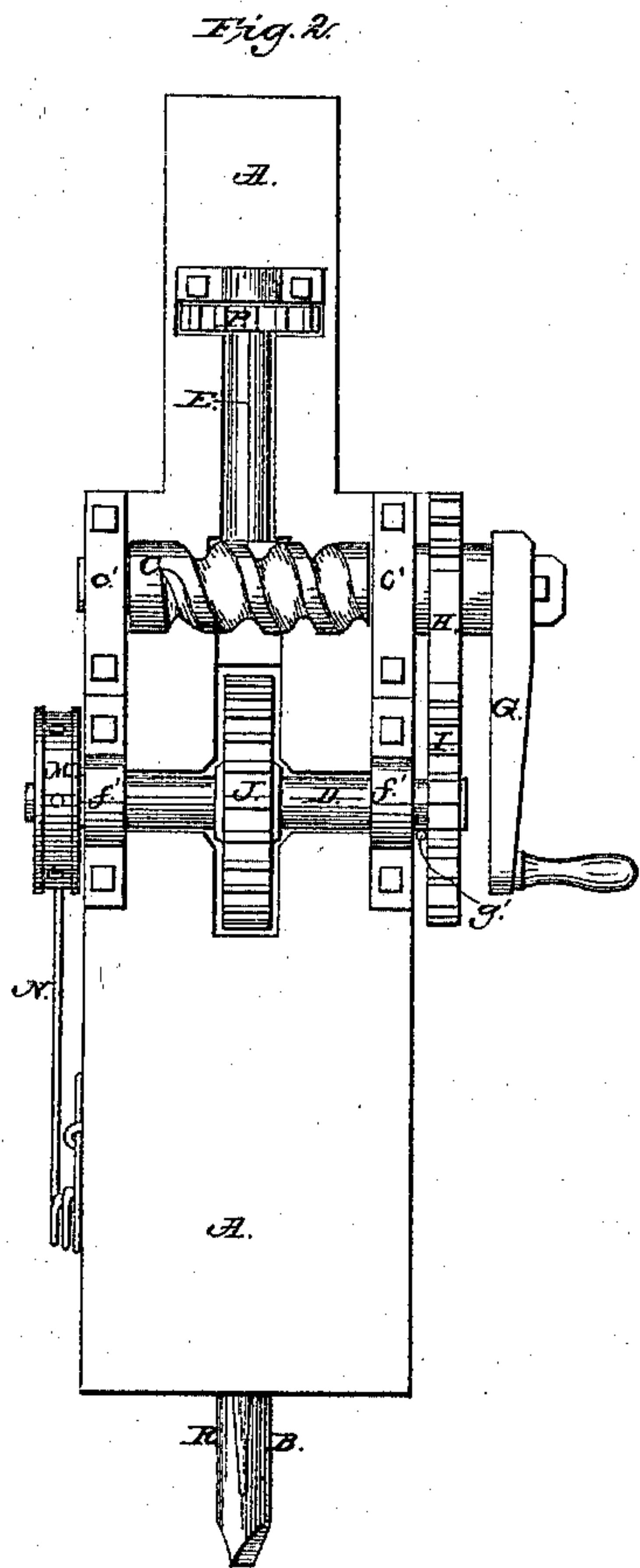


W. M. Barton,  
Stone Drill.

2 Sheets. Sheet 2.

N<sup>o</sup> 15,595.

Patented Aug. 19, 1856.





# UNITED STATES PATENT OFFICE.

WILLIAM M. BARTON, OF RUSSELLVILLE, TENNESSEE, ASSIGNOR TO WM. M. BARTON AND ROBERT M. BARTON.

## ROCK-DRILL.

Specification of Letters Patent No. 15,595, dated August 19, 1856.

*To all whom it may concern:*

Be it known that I, WILLIAM M. BARTON, of Russellville, county of Jefferson, Tennessee, have invented a new and useful Improvement in Rock-Drills, of which the following is a full, clear, and sufficient description, reference being had to the accompanying drawings.

Of these Figure 1 is a perspective view of my machine; Fig. 2, a rear elevation of the same; Fig. 3, represents the slab with the wheels and shafts removed; and Fig. 4, a view in detail of a portion of the gearing.

The slab A, being of a single piece of wood or other suitable material, in shape generally as represented in the drawings, is substituted for a frame; and to this are attached the shelves  $a'$  and  $b'$ ,  $b'$ , to serve as guides for the drill B, and the lugs  $c'$ ,  $c'$ , to serve as journals for the main shaft C. This slab is also grooved transversely, as shown in Fig. 3 at  $d'$ , to afford a space in which the shaft D may be sunk; and vertically, as shown in the same figure at  $e'$ , to receive in like manner the shaft E. In three instances a smaller groove is cut at right angles to one of the above grooves and entirely through the slab, in order to give passage to wheels upon the above shafts respectively. These slots are shown at  $d''$ , and at  $e''$ ,  $e''$ .

The main shaft C, receiving its motion from a crank G, or otherwise, bears a wheel H, the teeth upon which cover only small segments of its circumference, the number of these segments being that of the desired number of blows of the drill to a revolution of the shaft. The drawing—it is more clearly shown in Fig. 4—represents three such segments of three teeth each, catching against the ratchet-teeth of the wheel I upon the shaft D, and this shaft, bearing also the cog-wheel J, which passes through the above mentioned slot  $d''$  and gears into the cylindrical rock K or the drill, effects its intermittent rise. To the other end of the shaft D is attached one end of the spring L, the other end of which is riveted to a drum M, loose on the same shaft and fixed in position when desired, by setting the spring catch N into one of a series of holes on its circumference. When the drum is loose, being free to move with its spring and the shaft D, the drill falls by its own weight as often as the

ratchet wheel I is released from one of the segments of teeth on the wheel H; but when the drum is fixed, it forms a resistance to the spring, which being coiled up by the revolution of the shaft, reacts when released as above and drives down the drill with a force graduated by changing the hole into which the spring N catches, and thereby the tension of the coil spring L. The shaft D is fastened to the slab A or to slightly projecting strips attached thereto, by bands  $f'$ , and the end carrying the wheel I, which is allowed to yield slightly in case of an uneven gearing with the segment teeth of wheel H, is held up to said wheel by a stiff spring  $g'$ .

Upon the shaft C is cut a worm, which gears into the pinion O on the vertical shaft E; and the pinion P on the upper end of this shaft, passing through the upper slot  $e''$ , gears into a pinion Q, held between the guide shelves  $b'$ ,  $b'$ , and surrounding with a square center the square upper end of the drill, which thus receives a continuous though slow rotation from the shaft C.

The bottom of the slab A is held firmly in place by stepping its iron pin or projection R into a hole in the rock, and it is supported in any desired angle by braces S and T, extending from the top and forming a tripod support, the former being forked and fastening in holes, as shown at  $s'$ ; the latter catching in a staple at  $t'$ ; and both being attached by hooks or otherwise, at their lower ends, to boxes of sand, stones, &c., by which they are steadied.

A number of drill bits of different lengths may be used, to be bolted or otherwise fastened to the body of the drill, as required.

Having thus described my improved rock drill, what I claim as my invention and desire to secure by Letters Patent, is—

The combination of the segmentally toothed wheel H, gearing into the ratchet wheel I, with the spring L and its drum M, when these parts are arranged as above set forth.

In testimony whereof, I have hereunto subscribed my name.

WILLIAM M. BARTON.

In presence of—

CLISBE RIGGS,  
ROLEN G. ESTES.