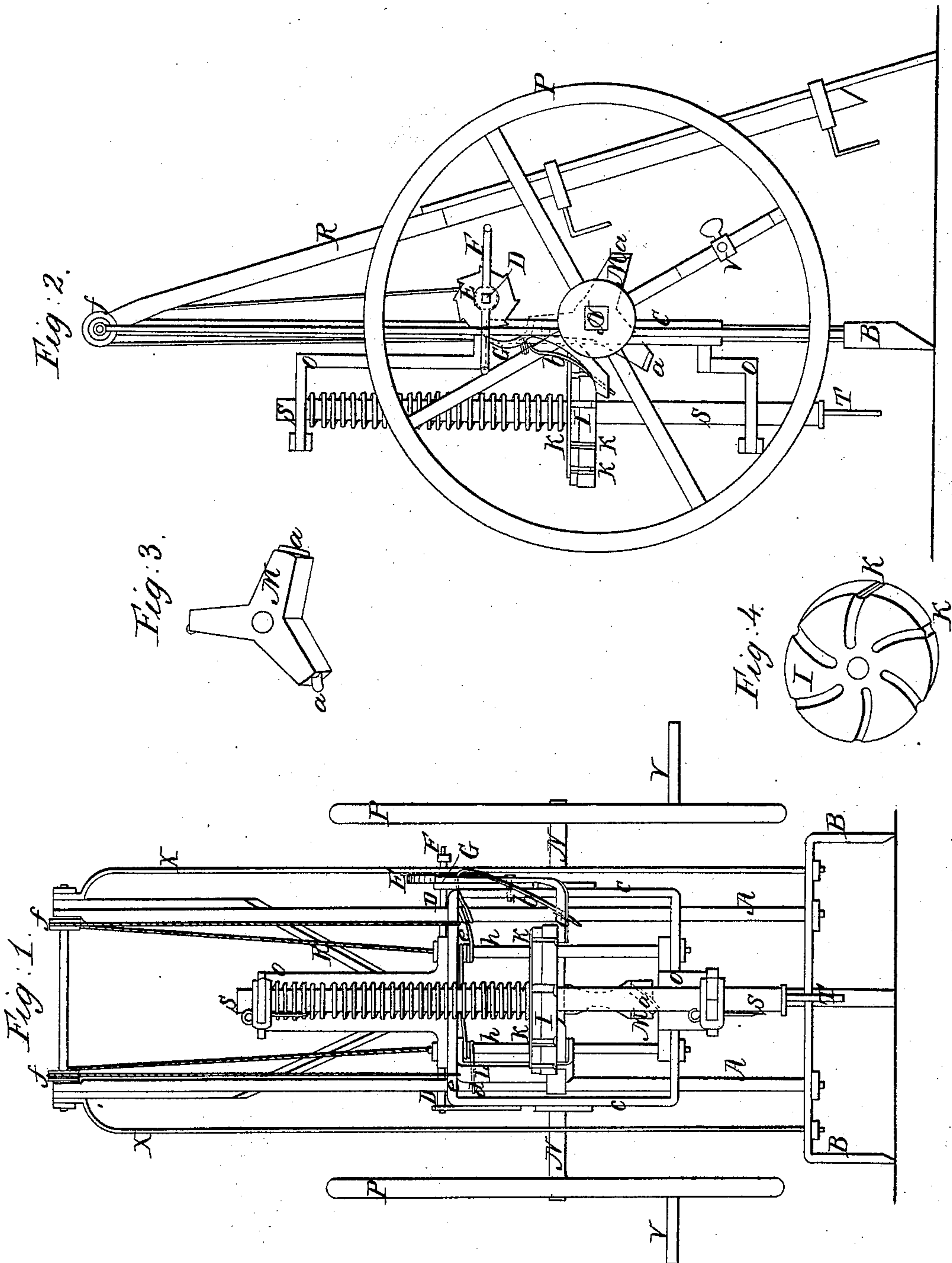


*S. Pettes,
Stone Drill.*

No 10,653.

Patented Mar. 14, 1854.



UNITED STATES PATENT OFFICE.

SIMON PETTES, OF NEW YORK, N. Y.

MACHINE FOR DRILLING STONE.

Specification of Letters Patent No. 10,653, dated March 14, 1854.

To all whom it may concern:

Be it known that I, SIMON PETTES, of the city, county, and State of New York, have invented a new and useful Improvement in
5 Machines for Drilling Rock or other Substances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of
10 this specification, of which—

Figure 1 is a front elevation; Fig. 2, a side elevation; Fig. 3, a perspective of the lifter; Fig. 4, ditto of the drill head.

The nature of my machine consists in
15 constructing one for drilling rock, &c., of an exceedingly portable character, and by the arrangement of the operative parts giving certainty of action in the turning of the drill head, thus obviating the liability to jam or
20 deface the lifter, while at the same time the diagonal rib on the face of the lifter serves the purpose of a greater throw than one placed radially from the shaft on which the lifter turns.

25 By the elbow form given my arms containing the boxes for the drill rod, a longer range is given the same, as the rod may rise above the frame, as well as descend below it: while by placing the windlass for raising
30 the drill frame, &c., upon said frame, I am enabled to effect the descent of the drill in a regular manner by the stroke of the drill head, relieving the ratchet on the windlass shaft.

35 To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation, referring to the drawings of which—

40 A, A, are uprights on which the drill frame slides and serving as guides, they are secured in a foot piece B B: C, C, the drill frame, on the upper part thereof is secured the windlass D D, the cords secured to the
45 frame at *e e* pass over pulleys *f, f*, and are wound on D when the drill is up: E a ratchet wheel on the shaft D: F the handles for turning said shaft: G a dog or pawl having its lower end bent at right angles, so that
50 the drill head in its descent strikes it and relieves the ratchet, one notch: on the rising of the head the pawl is thrown into play by a spring *b* secured on the bolt *h*: I the drill head; on its under side (see Fig. 4) any desired
55 number of eccentric grooves are formed; in which the ribs on the lifter play: upon the edge of I, are vertical grooves K K

in which the detent L is forced by a spring *d* placed behind it: upon this detent L the drill head slides in its descent, the object of which is to secure the drill from turning
60 irregularly, or flying back, the detent is worked by a bent arm against which the sides of the lifter strike: M the lifter or tappets, secured on the main shaft N, upon the rotation of which each arm lifts the drill
65 head; on the face of each tappet is a diagonal rib *a*, the inner end projecting not as much as the outer one, so as gradually to enter the grooves on the head, the sides of which it touches and thus gives the turn to
70 the head, while the square shoulders, or the face of the lifter strikes the under surface of the head and lift it, thus reducing the wear thereof, while the angular position of
75 the rib *a* gives a greater throw than could have been effected by a radial one; a helical spring (or should one spring be deemed insufficient a second or third may be used concentric with the drill rod) is placed be-
80 tween the drill head and upper angular arm *o*, and by the compressing of said spring and weight of the head the stroke is given.

P, P, are wheels which subserve the purpose of fly wheels, and a means of ready
85 transportation: when a blast is made, it is necessary to remove to a place of safety the machine; in so doing it being only required to change the uprights to a horizontal position; R, a back stay to steady the machine
90 when at work, and the angle to be given the hole in the rock being effected by moving the foot in or out, it is furnished with sliding rod and clamps: *s s*, the drill rod, T the bit or drill, V V shifting handles on the
95 wheels P, P: when not in use, or in passing through narrow shafts they may be turned out of the way; X X stay or brace rods.

The operation is as follows: The machine being in place, the drill stock is placed in the arms *o o*. If it is desired to use a two
100 foot drill, raise the frame that height by turning the windlass D D: the wheels P P being rotated the lifter M strikes the lower side of the drill head as before described giving it the lift and turn; the descent of
105 the head releases the windlass one notch of the ratchet: the form and arrangement of the holding boxes greatly facilitate the introduction and removal of the drill rod, &c. The under face of the drill head is slightly
110 beveled to facilitate the rising and working thereof.

By the construction of the tappets of the
lifter D, with a radial rib (a) thereon I am
enabled not only to raise the drill head, but
at the same time and with the same mecha-
5 nism give the throw with great certainty,
while the detent (L) catches, and on which
the head also slides: thus obviating a prac-
tical difficulty, of uncertain throw from the
jar affecting the pawl throw and detent of
10 other drills.

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

So placing on the sliding frame C C the

windlass D with ratchet E whose pawl is
acted on by the drill head I, at each descent 15
thereof, and thus feeds the entire mechanism
as the work proceeds, substantially as set
forth in the foregoing specification.

In testimony whereof I have hereunto
signed my name before two subscribing wit- 20
nesses.

SIMON PETTES.

Witnesses:

J. A. SMITH,
JOHN F. CLARK.