

# G. H. Wood, Stone Drill.

N<sup>o</sup> 15,540.

Patented Aug. 12, 1856.

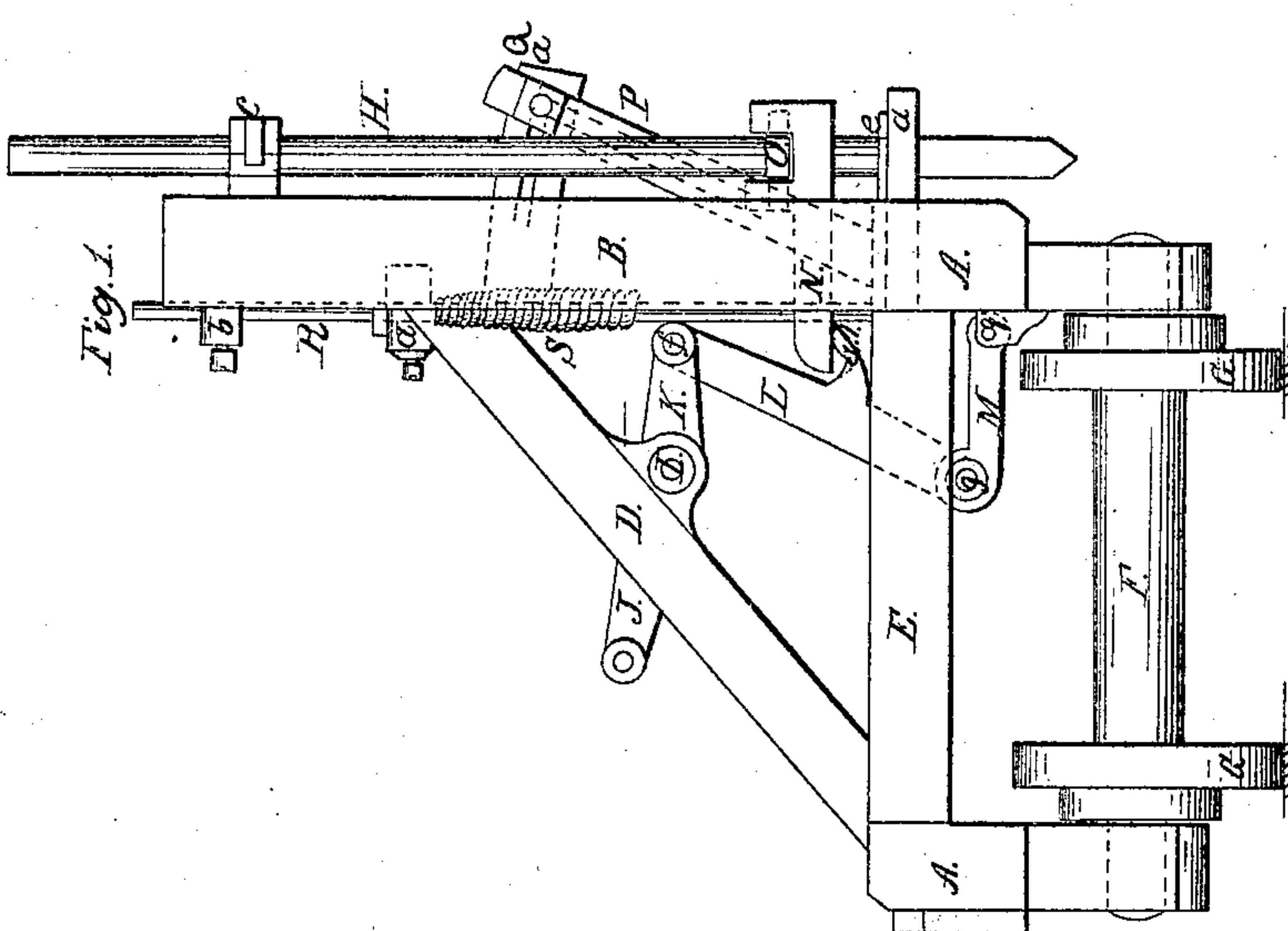
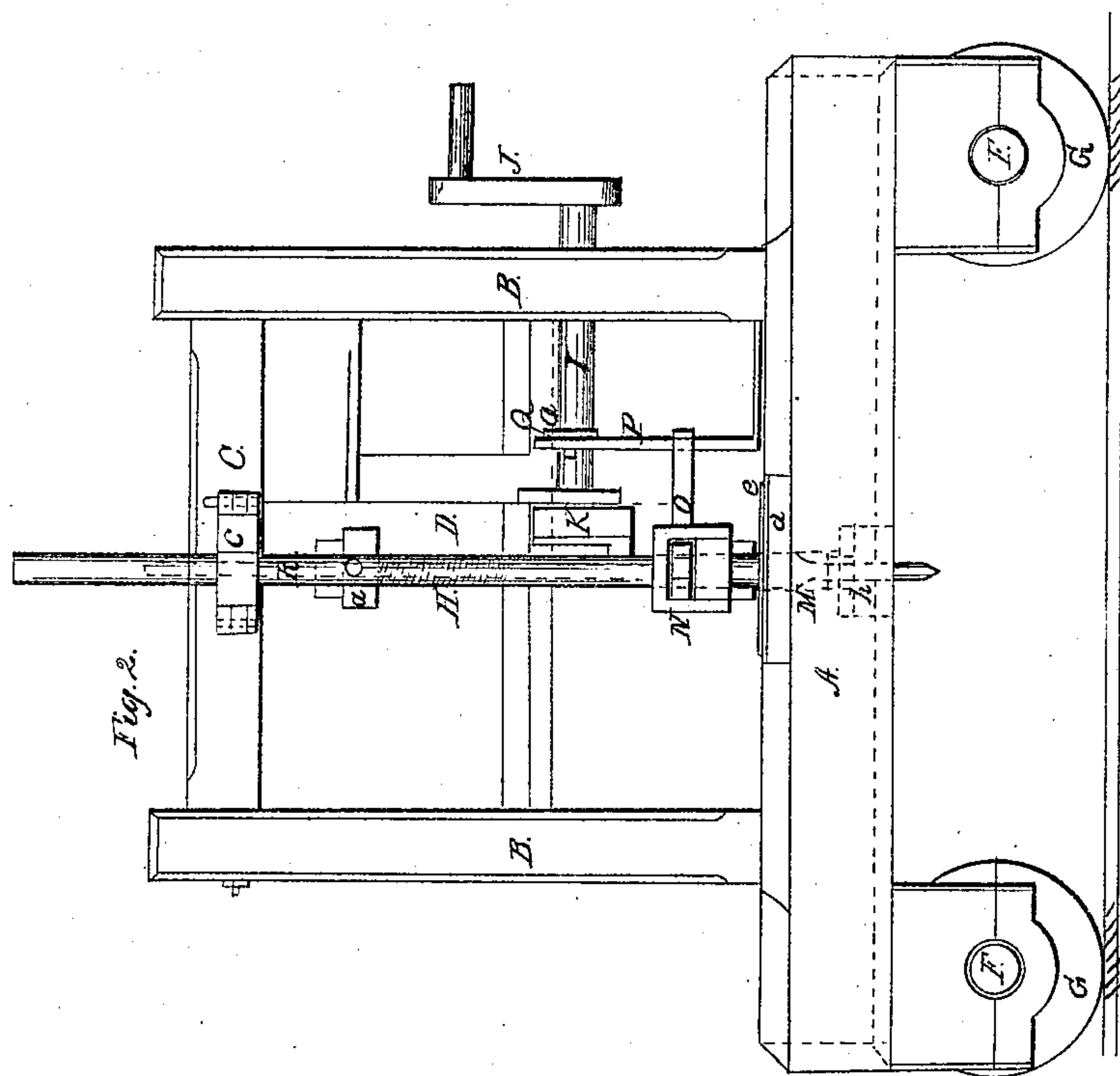
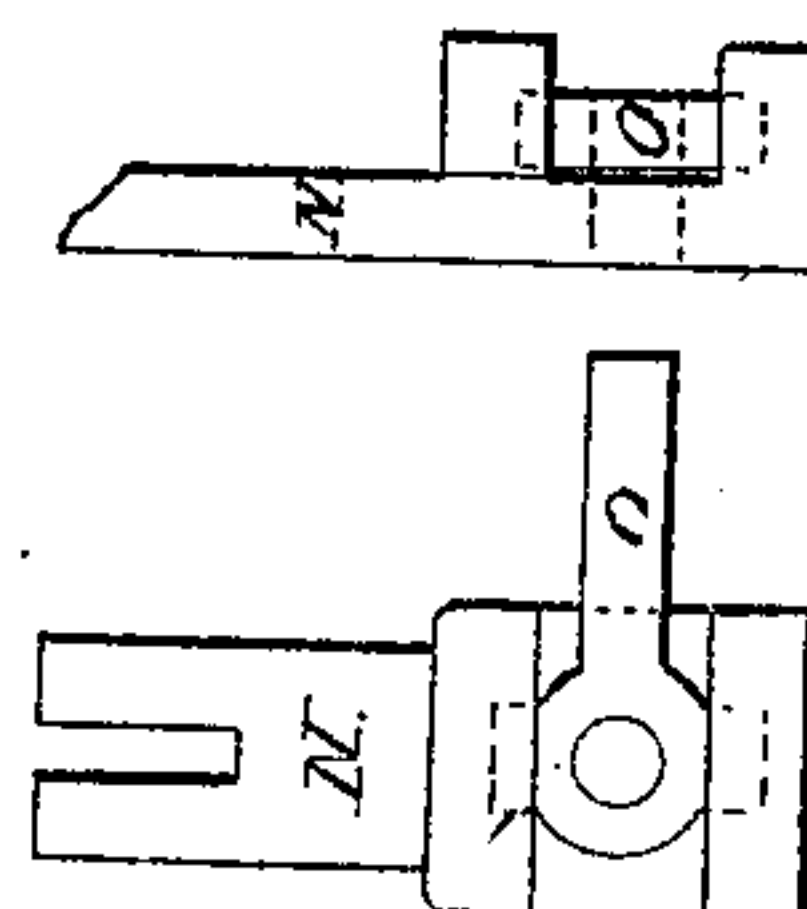


Fig. 4.

Fig. 3.



# UNITED STATES PATENT OFFICE.

GEORGE H. WOOD, OF GREEN BAY, WISCONSIN.

## ROCK-DRILL.

Specification of Letters Patent No. 15,540, dated August 12, 1856.

*To all whom it may concern:*

Be it known that I, GEORGE H. WOOD, of the city of Green Bay, in the county of Brown and State of Wisconsin, have invented a new and Improved Machine for Drilling Rock, Stone, &c.; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, figures, and letters of reference thereon, in which—

Figure 1, is a side elevation of my improved drilling machine. Fig. 2 is an end elevation thereof. Fig. 3 is a top view of the gripping levers to lift the drill and force it down. Fig. 4 is an edge view of the same.

Similar letters of reference refer to like parts in all the drawings.

The nature of my invention consists in the employment of a hooked pitman crank and strap as a mechanism for working the drill.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the bed of the machine.

B, C, D, E, are parts of the frame work securely put together.

F, F, are the truck shafts.

G, G, are the wheels.

H is the drill.

I is the shaft having on one end the crank and winch to propel the machine, while the other is furnished with a crank K, connecting with the hooked pitman at (f) to raise the drill.

L is the pitman having thereon a hook  $a^1$ , Fig. 1, to catch under the lever operating the gripping bar and raise the drill.

M is a jointed strap connecting at one end with the pitman at (g) while the other is properly hinged to a hanger (h), secured upon the frame work of the machine.

N, is the lower gripping bar to grip the drill downward, and is also a lever operating the upper gripping bar. O is the upper gripping bar to grip the drill upward. These gripping bars are strongly fastened together, but so as to admit of a free horizontal and rotary motion upon each other around the drill. The apertures in these gripping bars through which the drill passes are inclined to each other and are of such size that when the grippers are at right angles with the drill it will pass freely through them, and when the end of the lever

N is raised the gripper O is fastened, and the gripper N is loose upon the drill, and when the lever N is depressed the gripper O is loose and the gripper N is fastened upon the drill: the grippers take their hold upon the drill by friction upon its opposite sides. An arm projects from the gripping bar O through an angular adjustable slotted guide. P is this adjustable guide.

Q is a slotted bar attached to the frame work, which secures the adjustable guide when set at any angle.

R is a rod held at the upper end at (b) and passes down between the forks in the lever N, into the frame as shown in Fig. 1. On this rod there is a spiral spring S and also a stop (a) which by means of a set screw may be adjusted to increase or diminish the force of the blow upon the drill.

The drill has its lower bearing in the plate (d) so fastened as to be removed at pleasure, while at the upper end there is a hinged box (c), in order that the drill may be readily removed when necessary. Just above the plate (d) may be placed a piece of india rubber (e) or other substance to prevent the blow or jar of the gripping apparatus in its descent.

Operation: Motion being given, the crank K, will during one half revolution carry the hooked pitman away from the gripping levers, while the other half revolution carries the hook  $a^1$ , on the pitman, under the lever N, which, acting by its leverage upon O, causes it to grip the drill firmly and lift it up, while the arm of the gripper O, working in the angular guide causes the drill to rotate a certain distance during each upward motion. The hook  $a^1$  having been carried away from beneath the lever N, the coil spring S instantly depresses the lever N, thereby loosening the hold of the gripper O and fastening the gripper N upon the drill bar, which is then thrown down by the combined action of the spring and gripper N with a force, greater or less, according to the position of the spring upon the rod R. When the under surface of the gripper N strikes the horizontal plate (a) it is thrown into a position at right angles with the drill, which is thus loosened and passes freely down to its work.

The adjustable guide may be set to give the drill more or less twist at pleasure. The force of the blow may be regulated by drop-



ping the stop (a) lower down the rod R for a heavy blow, and raising it up to give a lighter blow.

Having thus described my improved drill-  
5 ing machine, what I claim as new therein and desire to secure by Letters Patent, is—

The combination of the hooked pitman,

crank and strap when arranged as described, as a mechanism for lifting the drill substantially as set forth.

GEO. H. WOOD. [L. s.]

Witnesses:

C. H. KIES,

ORLO B. GRAVES.