M. P. Coons,

Stone Drill.

No. 5,881. Patented Oct. 24, 1848.

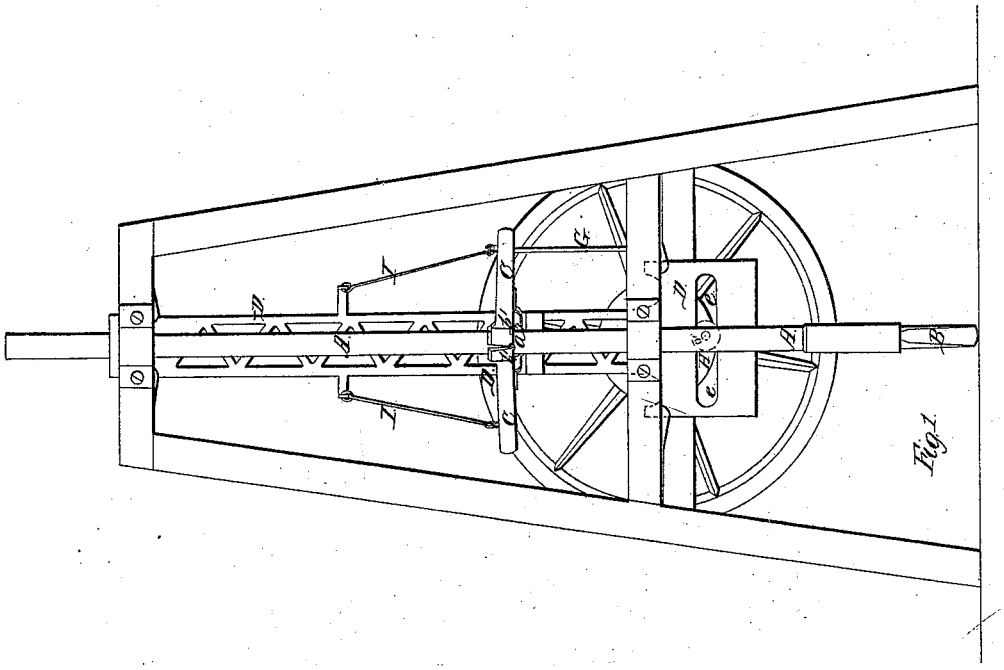

Fig. 1.

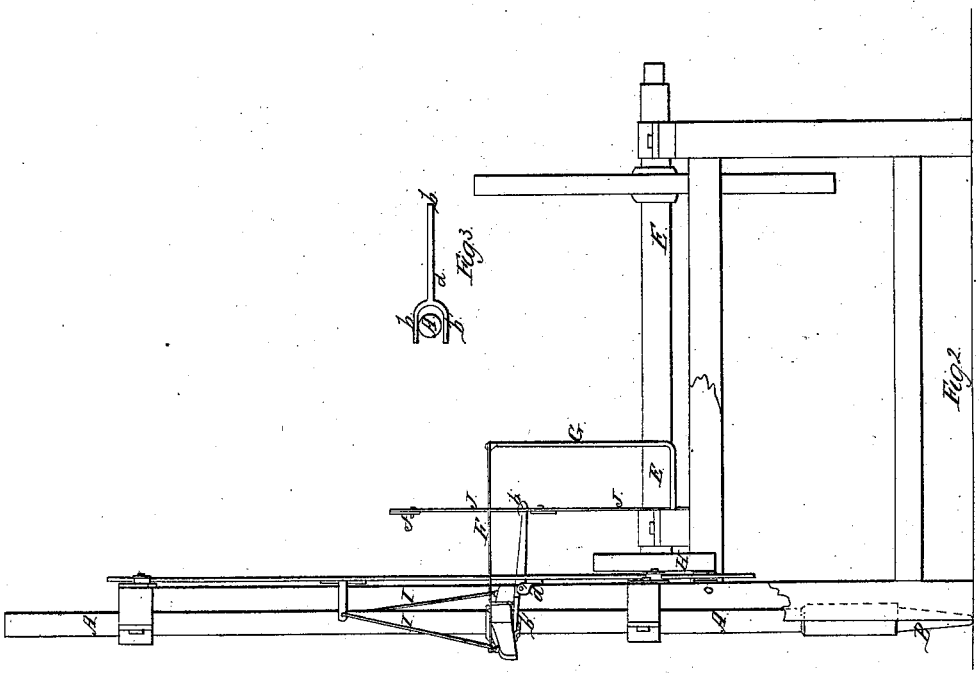

Fig. 2.

Fig. 3.

UNITED STATES PATENT OFFICE.

MATTHIAS P. COONS, OF LANSINGBURGH, NEW YORK.

ROCK-DRILLING MACHINE.

Specification of Letters Patent No. 5,881, dated October 24, 1848.

To all whom it may concern:

Be it known that I, MATTHIAS P. COONS, of Lansingburgh, in the county of Rensselear and State of New York, have invented certain new and useful Improvements in Machines for Drilling Stone; and I do hereby declare that the following is a full and exact description thereof.

My drill for drilling stone is intended principally for the drilling of such stones as are intended to receive the iron posts which I use in the construction of the improved fence for the shape, or configuration of the posts and rails of which I have made application for Letters Patent of the United States. The particular form in which I have described and represented my drilling machine is that therefore which adapts it to this special purpose; but the same manner of producing the respective movements may, of course, be employed when the machine is made for more general purposes, and on a large scale.

In the accompanying drawing Figure 1, is a front elevation of the machine, and Fig. 2, a side elevation thereof, a part of the side frame being removed for the purpose of exhibiting the operating parts the more clearly.

In each of these figures where the same parts are represented they are designated by the same letters of reference.

A, A, is the drill shaft, and B, the drill which is received within a socket at the lower end of the shaft in the usual manner. When the shaft is to be raised it is acted on by a pair of grippers which lift it to the proper height, which height can be regulated at pleasure, and these grippers being made to release their hold, the drill shaft falls. C, C, are the pair of grippers that take hold of the drill shaft, when their outer ends are raised. These grippers work on a joint pin at *a*.

D, D, is a vertical slide, which when made to use closes the grippers C, C. The slide D, is raised and lowered by a crank motion communicated from the horizontal shaft E, (Fig. 2) to which the power to work the drill is to be applied. The wheel H, on this shaft carries a crank pin which has on it a friction roller *o'*, that is received within a mortise or slot *e*, *e*, on the lower part of the slide D, and consequently by its revolution, raises and lowers said slide.

As the slide rises the grippers C, C, are closed by means of the rods I, I, attached to the slide, and the drill shaft is consequently lifted. To determine the height to which it is to be raised, a plate, or piece J, J, rises vertically from the frame work of the machine behind the slide D, D, which plate has a slot in it that receives the outer end *b*, of a latch-lever *b'*. This latch-lever has its joint pin at *d*, when the outer end of the latch-lever is brought into contact with the upper end of the slot, or with an adjustable piece *f*, the grippers will be opened, and the drill shaft will fall, the outer end of said lever being forked, as shown in a top view of it (Fig. 3,) and passing under the middle part of the grippers, these will consequently be raised and opened. After the shaft has fallen by its own gravity, and the slide D, is made to descend the rod F, will, in assuming the horizontal position, carry the grippers around the requisite distance for rotating the shaft, which at the proper time will again fall by its own gravity.

The drill must be rotated to a slight distance at every stroke, as is common in machines for drilling stone; but I have devised a new and simple manner of effecting this, as follows: The grippers, C, are suspended to the slide D, by the two connecting rods I, I, as above indicated, which permits the grippers to rotate horizontally. F, is a connecting rod which extends from the standard G, to the lower end of one of the rods I, as is so proportioned and placed that when the slide is at its lowest point it shall be horizontal and swing the grippers round a distance equal to that which the drill is to turn; when the slide rises the grippers sieze and raise the drill and turn it by the force of gravity, till the rods I, assume their perpendicular position from which they were previously forced in falling by the rod F.

Having thus fully described the manner in which I construct my drilling machine, for drilling stone, what I claim therein as new, and desire to secure by Letters Patent is—

1. The particular manner herein set forth

of constructing the grippers and of combining them with the latch lever, and with the slide D, under an arrangement of parts substantially the same with that herein set forth.

2. I also claim the particular manner in which I give a rotary motion to the drill shaft, by means of the rod F, extending from the standard G, as described.

MATTHIAS P. COONS.

Witnesses:
THOS. P. JONES,
L. WILLIAMS.