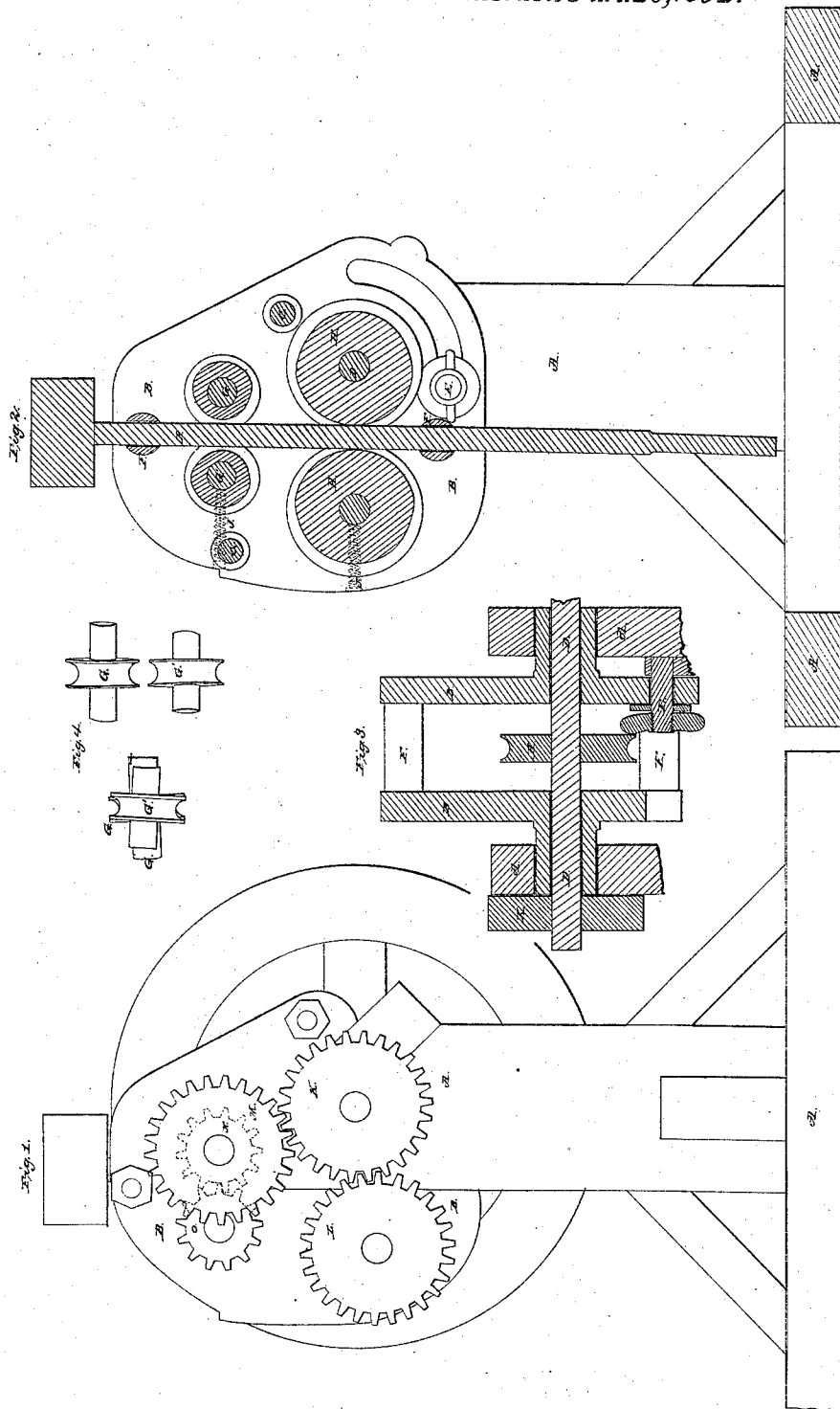


*H. Goulding,
Stone Drill.*

N^o 8672.

Patented Jan. 20, 1852.



UNITED STATES PATENT OFFICE.

HENRY GOULDING, OF BOSTON, MASSACHUSETTS.

MACHINE FOR DRILLING STONE.

Specification of Letters Patent No. 8,672, dated January 20, 1852.

To all whom it may concern:

Be it known that I, HENRY GOULDING, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Drilling-Machines, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said invention, by which it may be distinguished from others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

The figures of the accompanying plate of drawings represent my improvements.

Figure 1 is a side elevation of the machine, Fig. 2 is a central vertical section of the same and Figs. 3 and 4 are detail views which will be hereinafter referred to and explained.

My improved machine is intended to be used either as a power or hand drilling machine, and is so constructed as to drill in any direction, the drill being set in a swinging frame and operated by the friction of two sets of grooved wheels with movable journals, so placed with regard to each other as to turn the drill as it is driven.

A A A in the drawings, represents the supporting framework of the machine, constructed as shown in the drawings or in any other suitable manner.

B B is the swinging frame the two plates of which are connected together by the shafts C C. This frame turns freely on the shaft D D, shown in the detail sectional view Fig. 3, but can be firmly secured in any desired position by the clamping screw E, Figs. 2 and 3. The drill P is moved up and down in its bearings F, F', by the grooved cam shaped wheels G, G', and H, H'; the journals of one of each set are movable, being pressed upon by the spiral springs J, J shown by dotted lines in Fig. 2, so that if the wheels or the drill shaft become worn by the friction, they will still bear upon and drive the said drill shaft as they revolve. The driving wheels G, G' are placed with regard to each other (as shown in Fig. 4) which is a detail view of the said wheels. It will be seen that by this arrangement as the wheels revolve, one set will turn

the drill shaft as it is raised while the other set can be arranged so as to turn it again in the same direction, as it is driven down.

The driving wheels are made to revolve by the following arrangement of gearing which gears are all placed upon the outside of the swinging frame. On one end of the main driving shaft D D (the same shaft upon which is placed one of the lower driving wheels H and upon which the swinging frame turns) is the gear wheel K Fig. 1, which turns the lower driving wheel H' by means of the gear wheel L on the end of the shaft of said driving wheel. The teeth of the wheel K also play into the teeth of the wheel M. on the end of the shaft of the upper driving wheel G. On this same shaft is the gear wheel N (shown by dotted lines in Fig. 1) which engages with the wheel O on the shaft of the other driving wheel G'. By the above arrangement of gearing it will be seen that the two sets of wheels G, G' and H, H' will be turned in opposite directions and operate the drill as above described.

The drill is fed in as the hole is deepened by the larger set of wheels, the bearing surface of which is greater than that of the smaller sets. It will be seen that the drill shaft can be operated by driving wheels the edges of which are flat as well as by grooved wheels.

Having thus described my improved drilling machine, I shall state my claims as follows,—

What I claim as my invention and desire to have secured to me by Letters Patent is,—

1. Driving the drill forward and back by adjustable wheels between the edges of which the drill shaft is placed, substantially as above described.

2. I claim turning the drill by placing said wheels at an angle to each other, substantially as herein above described.

3. I claim feeding the drill forward as the hole is deepened by making the bearing surface of the wheels which drive the drill in of greater length than that of the other wheels.

HENRY GOULDING

Witnesses:

EZRA LINCOLN,
JOSEPH GAVETT.