(Model.)

2 Sheets—Sheet 1.

C. WREN.

DRILLING MACHINE.

No. 263,742. Patented Sept. 5, 1882.

Fig. 1.

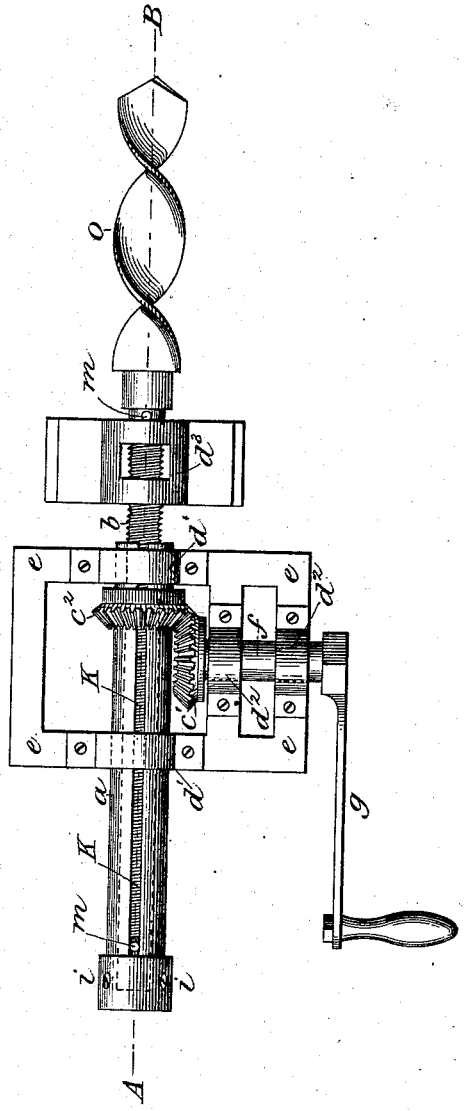
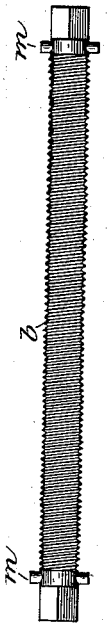


Fig. 3.

Fig. 2.



Witnesses.
C. M. McMurray.
Jas. Beckham

Inventor.
Christopher Wren

(Model.) 2 Sheets—Sheet 2.

C. WREN.

DRILLING MACHINE.

No. 263,742. Patented Sept. 5, 1882.

Fig. 5.

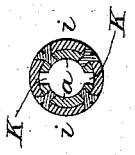


Fig. 4.

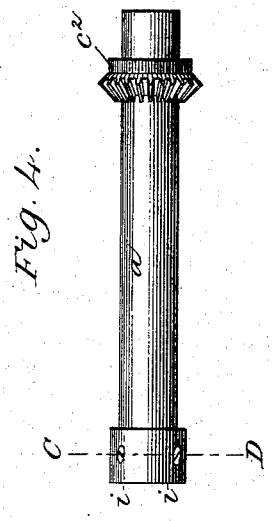
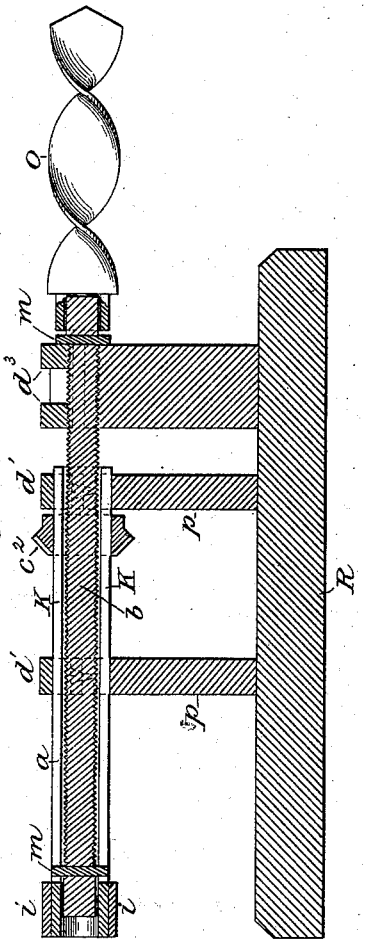


Fig. 6.



Witnesses:
C. M. McAlarney
Jas. Beacham

Inventor:
Christopher Wren

UNITED STATES PATENT OFFICE.

CHRISTOPHER WREN, OF PLYMOUTH, PENNSYLVANIA.

DRILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 263,742, dated September 5, 1882.

Application filed June 12, 1882. (Model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER WREN, of Plymouth, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Attachment to Drilling-Machines, of which the following is a specification, reference being had to the accompanying drawings.

Figure 1 is a top view, showing all the parts in position for operation. Fig. 2 shows screw *b* detached. Fig. 3 is an end view of screw *b*. Fig. 4 shows sleeve *a* detached. Fig. 5 is a sectional view of sleeve *a* through the line C D. Fig. 6 is a sectional view on the line A B. Similar letters refer to similar parts in all the views.

a is a tube or sleeve having slots *k k* running lengthwise through it and bands *i i* around it. The bands *i i*, the journals *d' d'*, and the bevel-pinion c^2 hold the parts of sleeve *a* together.

b is a plain screw of proper size to pass loosely inside of sleeve *a*, having fixed pins *m m* in its ends.

c' c^2 are straight toothed bevel-pinions working at right angles into each other. c' is fastened to shaft *f*, and c^2 is fastened to sleeve *a*. Either of these pinions may be made larger than the other, to give the proper speed to the drill and to adapt it to different kinds of work.

d' d' and d^2 d^2 are journal-boxes in the frame *e e e e*, in which the sleeve *a* and shaft *f* revolve.

d^3 is a threaded box, fixed when in use, through which the screw *b* runs.

e e e e is a frame fastened by means of posts *p p* to the body of the machine, and holding the shaft *f* and sleeve *a* in their relative positions.

f is the driving-shaft, to which the crank *g* is applied in operating the machine.

o is the twisted drill.

The base R shown in the drawings, and on which the model sits, forms no part of the machine, but is merely used to hold the parts in position to show them.

The machine is operated as follows: When the crank *g* is turned it revolves the shaft *f* and pinion *c'*. This sets in motion the sleeve *a* by means of the pinion c^2, and as the sleeve *a* turns it carries with it the screw *b* and drill *o* by means of the pins *m m* protruding into the slots *k k*. As the screw *b* is turned in the threaded box d^3 it is drawn forward by the thread, the pins *m* slide in the grooves *k k*, and the drill *o* is fed forward into the coal or other substance being drilled.

Having fully described my invention, what I claim as new is—

The combination, in an attachment to mine drilling-machines for use in coal or rock, of the sleeve *a*, having slots *k* cut lengthwise in it, and having a straight-toothed bevel-pinion, c^2, fixed to it, the screw *b*, passing inside of sleeve *a* and having fixed pins *m* in its ends, which protrude into the slots *k*, the frame *e e e e*, having the journal-box *d' d'* and d^2 d^2 arranged in it, that the sleeve *a* and shaft *f* may rest and revolve in them, and the shaft *f*, having a straight-toothed bevel-pinion, *c'*, fixed to one end, and fitted on the other end to receive the crank *g*, with a screw-threaded box, d^3, all substantially as shown and described, and to be applied as an attachment to drilling-machines to give motion to the drill, and operating in a manner wherein the power is applied at right angles to the direction of the drill.

CHRISTOPHER WREN.

Witnesses:
WM. BEACHAM,
W. M. LEWIS.