

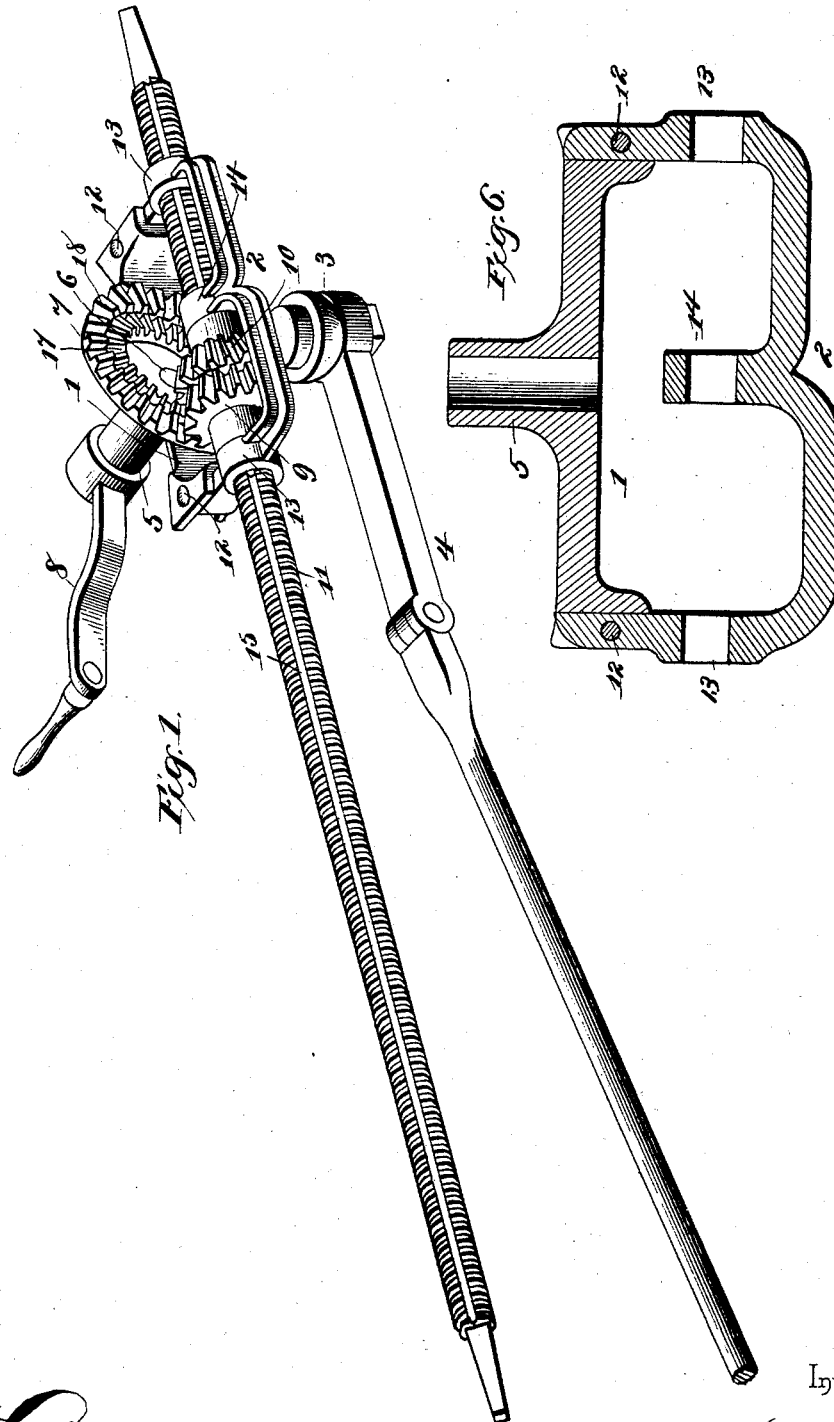
(No Model.)

2 Sheets—Sheet 1.

J. T. SNYDER.
DRILLING MACHINE.

No. 489,044.

Patented Jan. 3, 1893.



Witnesses

E. Hurdman
N. H. Riley

By his Attorneys,

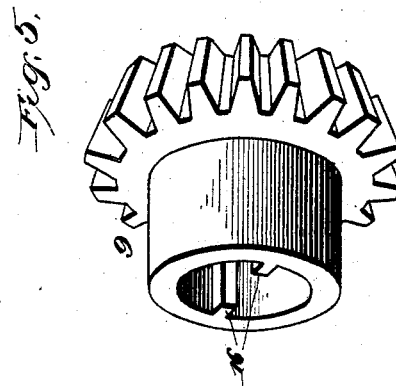
John T. Snyder
C. A. Snow & Co.

Inventor

2 Sheets—Sheet 2.

Patented Jan. 3, 1893.

No. 489,044.



Inventor

By *his* Attorneys,

John T. Snyder
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UNITED STATES PATENT OFFICE.

JOHN T. SNYDER, OF LUZERNE, PENNSYLVANIA.

DRILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 489,044, dated January 3, 1893.

Application filed March 30, 1892. Serial No. 427,040. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. SNYDER, a citizen of the United States, residing at Luzerne, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Drilling-Machine, of which the following is a specification.

The invention relates to improvements in drilling machines.

The object of the present invention is to simplify and improve the construction of drilling machines, to increase their strength and durability and to facilitate their adjustment to the character of the coal or other substance operated on.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended.

In the drawings—Figure 1 is a perspective view of a drilling machine constructed in accordance with this invention. Fig. 2 is a horizontal sectional view. Fig. 3 is a detail view of the cog wheel. Figs. 4 and 5 are similar views of the pinions. Fig. 6 is a horizontal section through the frame with the pinions and feed bar omitted.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a frame of general rectangular shape and having a removable section 2 and provided with a depending L-shaped arm 3 which is adjustably secured to a standard or brace 4. The frame 1 is provided with a laterally extending bearing 5 in which is journaled a short shaft 6 carrying a beveled cog wheel 7 at its inner end and having a crank handle 8 attached to its outer end and adapted to rotate it and a cog wheel 7, which drives pinions 9 and 10 arranged on a threaded feed or drill bar 11. The removable section 2 of the frame which is secured to the other portion of the frame by vertically disposed pins 12, is provided with end bearings 13 and a central bearing 14 to receive the feed-bar 11, and the pinions 9 and 10 are arranged between the intermediate bearing 14 and one of the end bearings 13. The feed-bar 11 is provided on opposite sides with longitudinal slots or grooves 15; the pinion 9 is provided

with interiorly disposed ribs or splines 16 which fit in the grooves 15; and the pinion 10 is interiorly threaded and engages the threads of the feed-bar. The cog wheel 7 is provided with inner and outer cogs 17 and 18 which mesh respectively with the pinions 9 and 10, whereby the feed bar will be rotated and fed forward. Heretofore the amount of feed of the bar 11 was regulated solely by the number of threads to the inch, and as the hardest substances to be drilled require a small amount of feed to a great number of rotations it is necessary to make the threads of the feed-bar very fine, consequently weakening the feed-bar and employing threads that would become worn in a short time. By the arrangement of the doubled cog wheel 7 and the pinions 9 and 10, a drilling machine may be readily constructed to obtain the number of rotations of the feed bar and the amount of feed to suit the character of the coal or other substances operated on by varying the number of the cogs. The pinion 9 which is provided with the ribs or splines causes the rotation of the feed-bar, and the pinion 10 causes the feed-bar to be fed forward. The ends of the feed-bar are similarly constructed and are adapted for the reception of a bit which may be placed on either end of the feed bar; and after the feed bar has been fed its entire length, the bit may be taken from one end and placed on the other and the removable section may be detached and the feed bar turned end for end and be placed in position for re-drilling. By this construction the drilling machine may be made either right or left hand to suit the operator. The lower end of the arm 3 which is attached to the standard or brace has its lower face rounded and it is provided with a slot.

What I claim is—

1. In a drilling machine, the combination of a frame provided with a laterally extending bearing and having a removable reversible section adapted to be turned end for end and provided with end bearings and a central bearing, arranged in alignment and disposed longitudinally of the frame, a groove threaded feed bar arranged in the longitudinally disposed bearings, the pinions disposed on the bar between the central bearing and one of the end ones, one of the pinions engag-

ing the grooves and the other the threads of
the feed bar, a short shaft journaled in the
laterally extending bearing and the cog wheel
carried by the short shaft and having a double
5 set of teeth meshing with the pinions, sub-
stantially as described.

2. In a drilling machine, the frame 1 hav-
ing a removable section 2, the latter being
provided with end bearings 13 and a central
10 bearing 14, the feed bar passing through the

three bearings 13, 13 and 14 and the pins 12
for securing the removable section in place,
substantially as described.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in 15
the presence of two witnesses.

JOHN T. SNYDER.

Witnesses:

WM. J. TREMBATH,
A. A. HOLBROOK.