

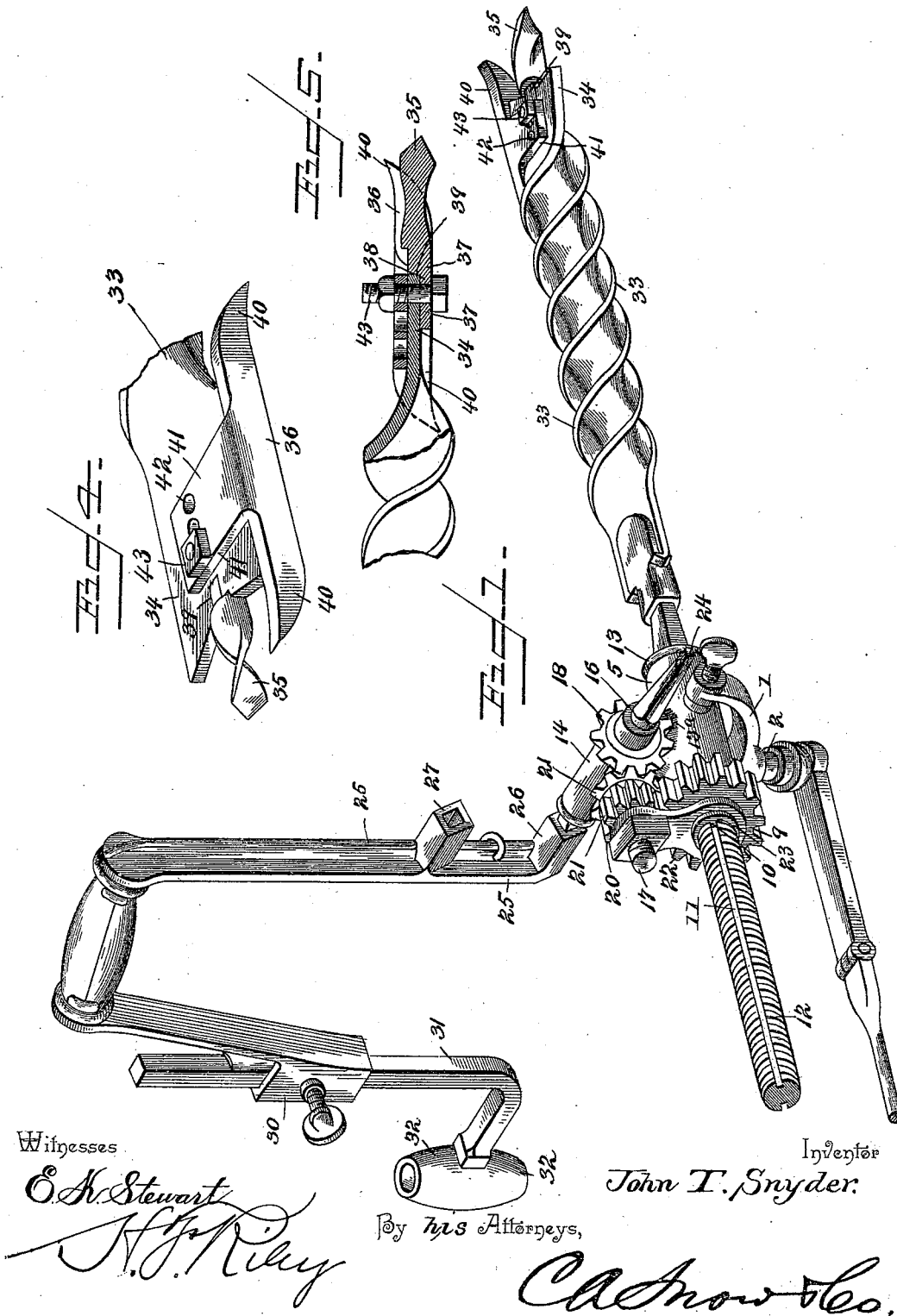
(No Model.)

2 Sheets—Sheet 1.

J. T. SNYDER.  
DRILLING MACHINE.

No. 492,118.

Patented Feb. 21, 1893.



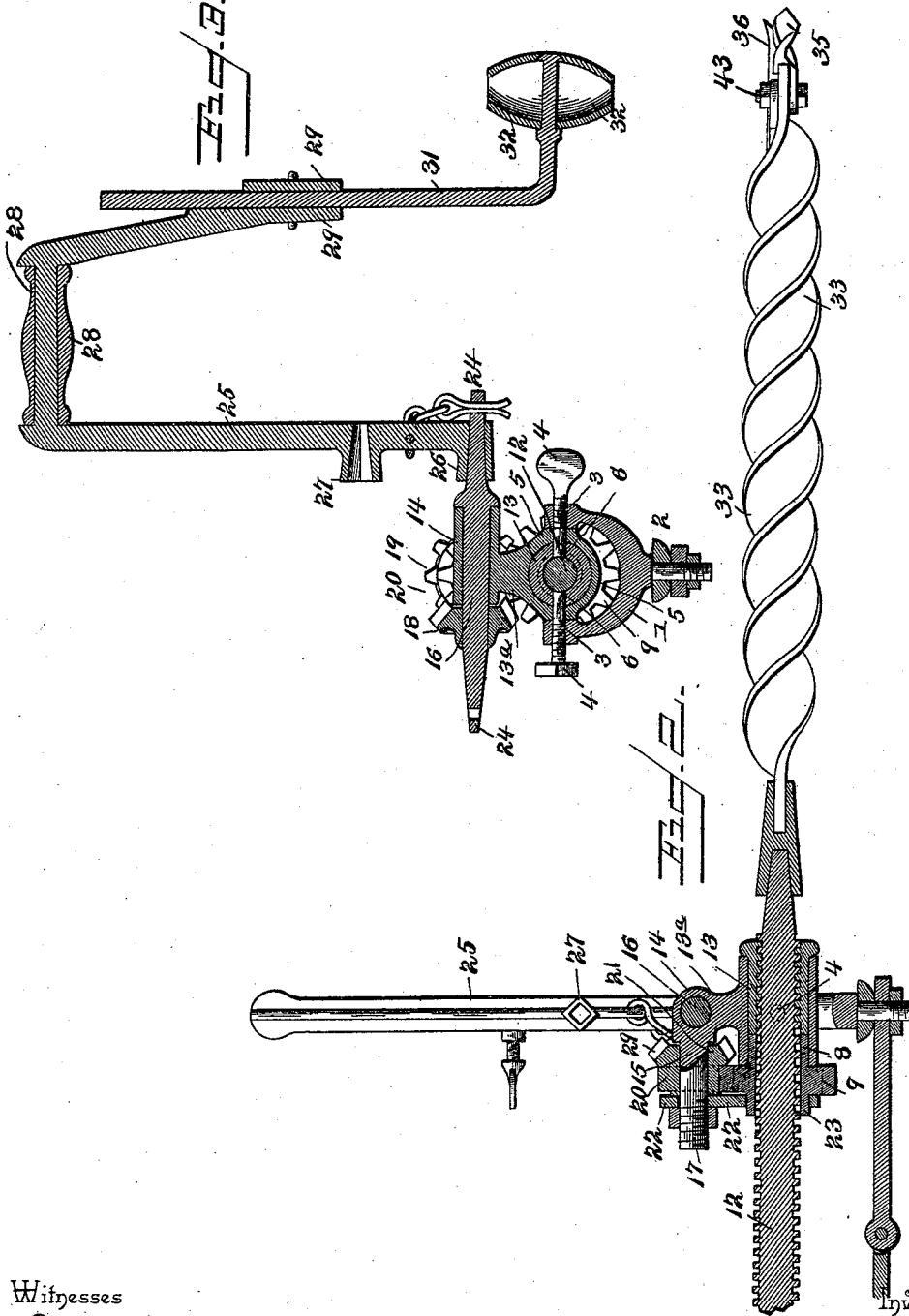
(No Model.)

2 Sheets—Sheet 2.

J. T. SNYDER.  
DRILLING MACHINE.

No. 492,118.

Patented Feb. 21, 1893.



Witnesses

E. H. Stewart  
N. M. Riley

By *his* Attorneys,

C. A. Snow & Co.

# UNITED STATES PATENT OFFICE.

JOHN T. SNYDER, OF LUZERNE, PENNSYLVANIA.

## DRILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 492,118, dated February 21, 1893.

Application filed September 21, 1892. Serial No. 446,458. (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 coal drilling machines.

10 The object of the present invention is to improve the construction of coal drilling machines to enable them to be operated with a minimum amount of friction, and to provide an improved crank handle adapted to enable  
15 the operator to use one or both hands in turning the drive shaft.

A further object of the invention is to improve the construction of the cutting end of the bit and to enable the side cutter to be  
20 readily adjusted as it becomes worn and to be reversed as one end has been fully used.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated  
25 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 embodying the invention. Fig. 2 is a longitudinal sectional  
30 view. Fig. 3 is a transverse sectional view. Fig. 4 is a detail perspective view of the cutting end of the auger. Fig. 5 is a detail sectional view of the same.

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

1 designates a yoke mounted on a standard 2 and provided in the ends of its arms with threaded openings 3, receiving screws 4 for  
40 securing a bearing 5 in the yoke and forming the trunnions of the same. One of the screws is provided at its outer end with a thumb head and the other is provided with a rectangular or nut head and the inner ends of  
45 each of the screws are smooth at 3 to form journals or trunnions which fit in bearing recesses 7 of the bearing 5. The bearing 5 receives at one end a hub 8 of a cog wheel 9 which is provided on the interior of it and its  
50 hub with diametrically disposed ribs 10 engaging corresponding longitudinal grooves 11 of a feed bar 12. The other end of the main

bearing 5 receives a tubular feeding sleeve 13 which is interiorly threaded and is engaged by the threads of the feed bar whereby when  
55 the latter is rotated it will be advanced for boring; and the sleeve is secured rigidly with the main bearing by the transversely disposed screws 4.

The main bearing is provided with a vertical extension or lug 13<sup>a</sup> at the top of which  
60 are arranged a longitudinal stub-shaft 17 and a transverse supplemental bearing 14 in which is arranged a drive shaft 16. On the drive shaft is arranged a driving pinion 18 which  
65 meshes with beveled teeth 19 of a double pinion 20, which is provided with another set of teeth 21 meshing with the cog wheel 9, whereby when the drive shaft is rotated the cog  
70 wheel will rotate the feed bar. The outer end of the stub shaft is threaded and is engaged by a nut which retains a circular securing plate 22 in place, and this plate 22 is provided with openings to receive the stub  
75 shaft and receives an annular flange 23 on the exterior of the cog wheel and extending outward therefrom whereby the cog wheel is retained in proper position. Each end of the  
80 drive shaft is squared at 24 and is adapted to receive a crank handle 25 which may be arranged at either side of the drilling machine and which is provided with sockets 26 and 27  
85 to increase or diminish the length of the handle. The crank handle is provided at the outer end of its handle spindle 28 with an inward extension 29 arranged parallel with the  
90 main portion of the crank handle and terminating in a socket 30 which is provided with a set screw and which is adapted for the reception of an L-shaped arm 31 of a supplemental handle 32, whereby the operator may  
95 use both hands in turning the crank handle. The socket of the extension and the sockets 26 and 27 enable the crank handle to be adjusted to suit the operator.

The auger 33 of the machine has its outer end 34 enlarged and spread and has centrally secured to it at its outer edge a center twist bit 35, and at one edge a side cutter 36. The center twist bit terminates at its inner end in  
100 a shank 37 which is provided with a shoulder 38 arranged in a recess 39 of the auger; the side cutter has each end 40 formed into a cutter, and is provided with a central shank

41 which is provided with a series of adjusting perforations 42 and which is secured to the outer end of the auger by a bolt 43 and the latter also serves for securing the shank 5 of the center twist bit. By this construction, the side cutter may be advanced as it becomes worn and after one end has become useless it may be reversed to bring its other end in position, and the means for securing 10 the side cutter to the auger also secures the center twist bit.

The supplemental handle is swiveled to the L-shaped arm and the crank handle is provided between its two drive shaft sockets with 15 a pin or key connected with the crank handle with a short chain and arranged within convenient reach when either of the sockets is used.

I desire it to be understood that I do not 20 limit myself to the precise details of construction herein shown and described as I may without departing from the spirit of the invention make minor changes therein such as varying the form and proportions and the 25 like.

What I claim is:—

1. In a drilling machine, the combination of a yoke provided at the ends of its arms with threaded openings, the screws arranged in the 30 threaded openings and having smooth inner portions forming journals, the main bearing having bearing openings in its sides receiving the journals a cog-wheel having a hub arranged in one end of the bearing and provided 35 with interior ribs, an interiorly threaded sleeve provided at opposite sides with openings registering with those of the bearing and receiving the ends of the screws, and a feed-bar engaging the threaded sleeve and provided 40 with grooves to receive the ribs of the cog-wheel, substantially as described.

2. In a drilling machine, the combination of the yoke, the screws arranged in the ends of

the yoke and having smooth journal portions at their inner ends, the bearing provided at 45 opposite sides of the bearing recesses to receive the smooth portions of the screws and provided at its top with the supplemental transverse bearing, a drive shaft arranged in the transverse bearing, a stub shaft, a cog- 50 wheel arranged at one end of the main bearing and provided with interior ribs and having a hub located in the latter and provided with an exterior annular flange, an interiorly threaded sleeve arranged in the other end of 55 the main bearing and provided at opposite sides with openings and registering with those of the main bearing and receiving the screws, the drive pinion mounted on the drive shaft, a double pinion mounted on the stub shaft 60 and meshing with the drive pinion and cog-wheel, the feed bar engaging the threaded sleeve and provided with grooves to receive the ribs of the cog wheel, and a securing plate having openings receiving the stub shaft and 65 the feed bar and securing the cog wheel in the bearing substantially as described.

3. In a drilling machine, the combination with an auger provided at its outer end with a recess, a center twist bit having a shank arranged on the end of the auger and provided 70 with a shoulder engaging said recess, a double ended side cutter having a central shank provided with a series of perforations, whereby the cutter may be adjusted outward, said cutter 75 being reversible to bring either end in operation and a bolt passing through said shanks and securing the parts together, substantially as described.

In testimony that I claim the foregoing as 80 my own I have hereto affixed my signature in the presence of two witnesses.

JOHN T. SNYDER.

Witnesses:

WM. J. TREMBATH,  
ROBT. H. MCKUNE.