

United States Patent Office.

JOHN GRIMM, OF DARLINGTON TOWNSHIP, PENNSYLVANIA.

Letters Patent No. 97,080, dated November 23, 1869.

IMPROVED COAL-DRILLING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN GRIMM, of Darlington township, in the county of Beaver, and State of Pennsylvania, have invented certain new and useful Improvements in Coal-Drilling Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and combination of devices, whereby coal may be drilled ready to receive the powder, or other agent used for blasting-purposes.

In the accompanying drawings—

Figure 1 is a perspective view of my invention.

Figure 2, a section of some of the devices used.

Figure 3, a perspective view thereof.

Figure 4, a perspective view of the same.

Letters of reference denote parts.

A standard, A, supports and carries most of the devices used, having an open part, A¹, at or near the centre thereof, and at each extremity, an ordinary screwed nut, A², let into the said standard A, in any suitable manner. Said nuts A² receive ordinary screwed bolts A³, carrying at their outer ends pointed pawls A⁴, one to each.

The lower portion of said standard A, forming an elongation or slide, A⁵, as shown in fig. 1, consists of square grooves A⁶, and is adjusted by means of a set-bolt, A⁷, or, as shown in fig. 4, consists of plane surfaces with a bolt, A⁸, perforations A⁹ being through both, in such a manner, that upon prolonging the length of the standard A, by withdrawing the slide A⁵, the bolt A⁸ will pass through any of the holes or perforations, unexposed.

A series of perforations, B, is on the face of said standard A, at or near the open part A¹ thereof.

At right angles with said standard A and projecting across the same, and attached to the same by means of brackets C, having points C¹ passing into said perforations B, is a screwed nut, C², having bearings, and reciprocating, if required, in said brackets C, said nut C² being hinged or made in two sections, and held together, by means of the pin C³, in such a manner that upon the withdrawal of the same, said nut C² may be opened to allow of the withdrawal of a screwed spindle, D, which is provided at one extremity with a socket, D¹, suitable for the attachment of any ordinary drill D². At the other extremity, said spindle D is provided with an ordinary crank, D.

Said standard A can, if required, be made with curved bearings E, fig. 3, on its face, and the nut C² be placed therein, by withdrawing the brackets C thereof.

The whole being so arranged, that by tightening the screw-bolts A³, the clamps A⁴ will bite and hold, relatively, into the roof and floor of any ordinary coal-mine, the nut C², carrying the spindle D, with its accompanying devices D¹ D² D³, is attached to the standard A, as hereinbefore described, by the rotary action of the crank. Being turned in any ordinary manner, the drill D² is revolved, cutting its way into the coal, whilst the revolving motion of the spindle D causes the drill D² to advance in proportion to the pitch of the worm on said spindle D. The nut C² being pivoted, allows the drill to be attached, and actuated in any position or at any angle. After the drill D² has penetrated a sufficient depth, by withdrawing the pin C³, the said nut expands, and the spindle D can be withdrawn without screwing back the same.

The pitch of the thread or worm on the spindle D, depends upon the nature of the coal or slate to be drilled. For bituminous or soft coal, a coarse pitch is required, but with cannel, or hard coal, a finer pitch is requisite.

I am aware that coal-drilling machines have been heretofore constructed, but they are cumbrous, costly, and complicated, thereby liable to disarrangement, beside requiring skilled labor to manipulate the same, oftentimes requiring two or more men to work one machine. My invention can be set up and worked by any ordinary miner, and as the devices are simple, and thereby not liable to be disordered, much time and expense are saved thereby.

Having thus described the nature, construction, and operation of my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The sliding standard A, having perforations B, or bearings E upon its face, in combination with the screws A³ and pawls A⁴, constructed and operating substantially as and for the purpose described.

2. The screwed spindle D and crank D³, in combination with the pivoted jointed nut C², brackets C, and pin C³, substantially as and for the purpose set forth.

3. The combination of the above parts in the construction of a coal-drill, whereby the drill can be set at any angle, and its feed regulated by the revolution of the spindle D, substantially as described and set forth.

In testimony that I claim the foregoing as my own, I affix my signature, in presence of two witnesses.

JOHN GRIMM.

Witnesses:

PERCEVAL BECKETT,
BENJAMIN FALLOWS.