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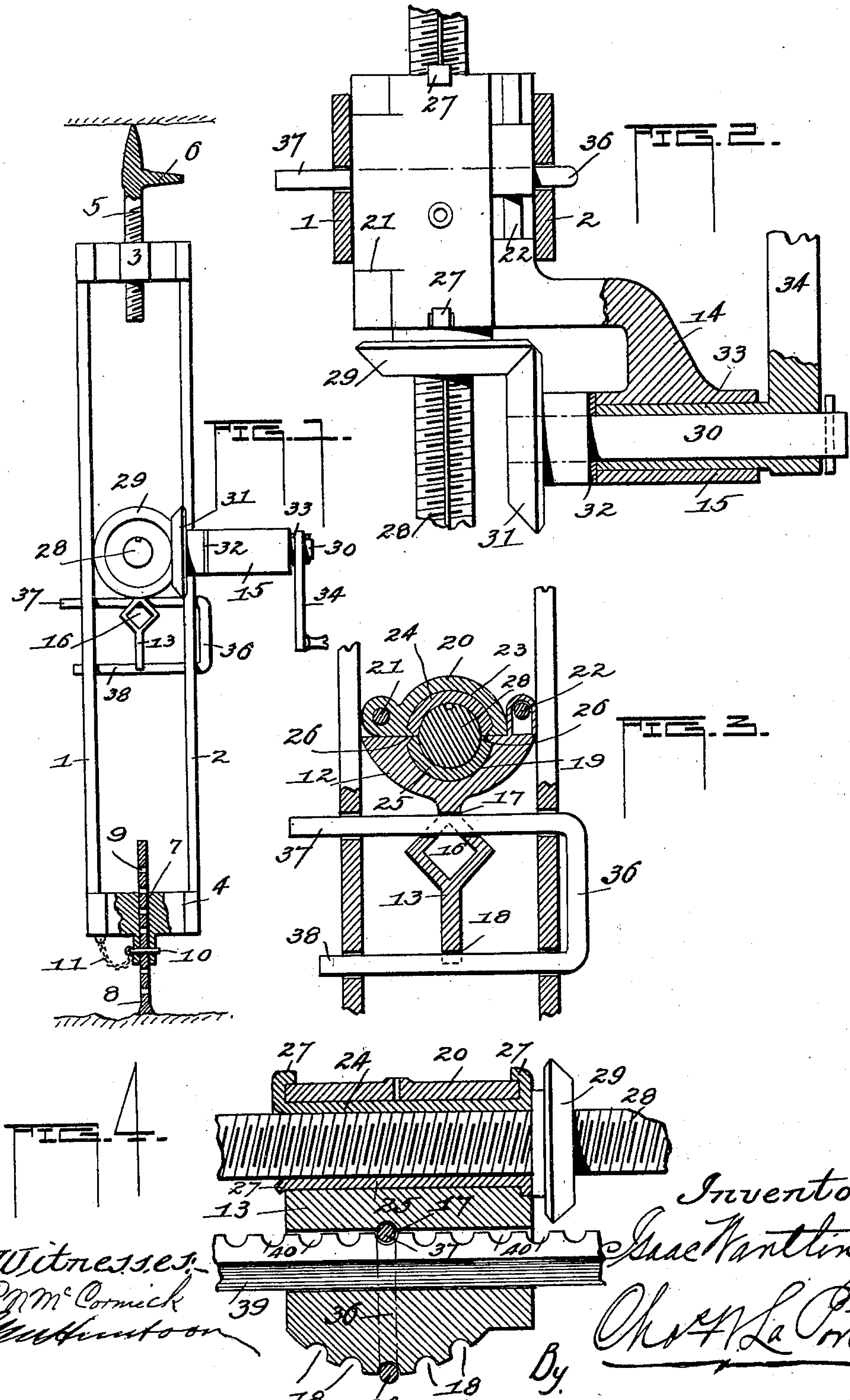
I. WANTLING.

COAL OR ROCK DRILL.

(Application filed Feb. 16, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

ISAAC WANTLING, OF PEORIA, ILLINOIS.

COAL OR ROCK DRILL.

SPECIFICATION forming part of Letters Patent No. 683,158, dated September 24, 1901.

Application filed February 16, 1901. Serial No. 47,664. (No model.)

To all whom it may concern:

Be it known that I, ISAAC WANTLING, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Coal or Rock Drills; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to coal or rock drills, and has for its object to provide a drill which may be easily made and assembled with little or no lathework on the parts and without the use of screws or bolts.

The improvement relates especially to the feed-nut and support or boxing and the manner of supporting the same in a "post-drill" frame or to a "grip-bar" when used as a "grip-drill," the feed-nut consisting of threaded linings dovetailed in the support or boxing and with lips upon one sectional lining, whereby the same may be fixed to the support.

A further object is to provide a depending portion of said support with an opening parallel with the nut and a transverse opening cutting through the aforesaid opening and with a flared or winged extension of said support having a series of semicircular notches on its lower edge, of a grip-bar having a serrated or notched edge and arranged to be attached to said support, and means of securing the same to the support in an adjustable manner.

Another object is to provide a shoe for the lower casting of the post-drill, which is preferably rectangular in form, provided with apertures throughout its length, and detachably and adjustably held in a rectangular socket in the casting, and to various other details of construction and arrangement of parts hereinafter fully described, and definitely pointed out in the appended claims, following the description, due reference being had to the accompanying drawings, forming a part of this specification.

In the drawings, Figure 1 is a front elevation of my improved drill. Fig. 2 is a plan of the boxing or support with a portion of the same shown in section. Fig. 3 is a transverse section through the boxing and feed-nut. Fig. 4 is a longitudinal section.

In the present invention I will illustrate and describe certain frame parts upon which I make no broad claim, as they are a part of an application now pending bearing Serial No. 45,960, and the particular features upon which I wish protection in this application I want to cover in combination with either a post or grip drill, as they are equally as applicable to both and are illustrated in such a manner.

1 and 2 are uprights connected at their upper and lower ends by means of the castings 3 and 4. The casting 3 is provided with a central bearing which is threaded and engaged by the threaded spindle 5, having the handhold 6 cast integral therewith. The casting 4 is provided with a rectangular opening 7, and 8 is a shoe rectangular in shape provided with perforations 9 in its length, adapted to be adjusted in the casting and held in such adjusted positions by means of the pin 10, which is held by a chain connection 11 to the casting. The uprights 1 and 2 are each provided with suitable apertures at equal distances apart throughout their lengths and opposite to each other for a purpose to be described.

12 refers to a suitable support or boxing provided with the depending body 13 and the extended stationary arm 14, with the bearing 15. The body 13 is provided with a rectangular opening 16, lying parallel with the feed-nut, to be described, and has its corners lying vertically and horizontally, and 17 is a transverse opening through the body 13 and passes through the upper portion of the rectangular opening 16. The body 13 has a lower extension which is flared or winged shape, the lower edge of which is struck on an arc of a circle from the center of the opening 17, and the edge is serrated or provided with the semicircular notches 18 for a purpose to be described. The central upper face of the support 12 is provided with a semicircular groove 19, as shown.

20 refers to a semicircular cap or half-boxing, which is hinged at 21 to the support and detachably secured at 22 on its opposite side, and the face of the same is provided with a semicircular groove 23, matching the groove 19 of the support.

24 and 25 are threaded semicircular linings

arranged to be carried, respectively, in the section 20 and the upper grooved face of the support and dovetailed therein at 26, as shown, which insures their being held in proper position in the boxing. In this connection I wish to cover not only the dovetailed connection between the linings and boxing, but also a simple method of securing the lining 24 in the half-boxing 20, which consists in providing the section 24 with the lips 27 at forward and rear ends, which will lie straight out when being placed in position and then bent back upon the outer face of the section 20, as fully shown in the figures, which will provide a simple but effective means of locking the lining 24 in the section 20, thus permitting the section to be swung back on its hinge and the thread-bar 28 placed in the nut or removed when desired. The thread-bar is grooved longitudinally, and 29 is a pinion loosely carried on said bar and is provided with a spline fitting in said groove.

30 refers to a rectangular bar which is passed through the bearing 15 of the stationary arm, and 31 is a suitable gear arranged to intermesh with the pinion 29 on the thread-bar, and 32 is a bushing arranged between the end of the bearing and the hub of the gear.

33 is a sleeve provided with a rectangular opening, which is slipped over the bar 30 and in the bearing 15, and the same is provided with the arm extension 34, to which is attached a handhold for actuating the gears for imparting movement to the thread-bar.

36 is a yoke-pin having the extensions 37 and 38, adapted when the feed-nut and support have been properly placed and adjusted in a post-drill frame to pass the extension 37 through the apertures in the post coincident with the transverse opening 17 and the extension 38 through the apertures coincident with the semicircular notches 18 in the support. This same device, with the addition of a grip-bar, may be used when it is desired to make use of the same as a grip-drill, and in this connection the provision of the rectangular opening 16 and transverse opening 17 enables me to provide in connection with a grip-bar a positive lock for the nut to the bar by means of the yoke-pin and to provide for its quick adjustment on the bar.

39 is a grip-bar capable of being slipped through the opening 16 in the support, and one edge is serrated or provided with semicircular notches 40, and when the same is in position, as shown in the drawings, a notch is placed coincident with the opening 17, and the yoke-pin is slipped through the opening in such a manner as to engage the notch or serration 40, and thus securely lock the support and grip-bar together.

I do not wish to limit myself to the exact details of construction and arrangement of parts as shown in the drawings, as it is obvious that various changes may be made in the device by providing a grip-bar of different contour, making the shoe for the lower portion of the post-drill suitable to conditions, and arrange the yoke-pin to adapt itself to various changes that may be made in the lower portion of the support without departing from the broad principle of invention herein disclosed.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In combination with the two-part boxing the parts being hinged to each other, one of said parts having a tubular bearing 15 carrying power devices, and a depending body, the feed-nut consisting of the dovetailed sections 24 and 25 each having a supplemental locking means comprising lips bent back upon the parts of the boxing, the transverse opening 17, extending through the depending body, means for supporting said boxing in a suitable frame-support and a thread-bar engaged by the power devices, substantially as described.

2. In combination with a suitable support with perforations arranged at intervals in its body, of a feed-nut and support having a depending body integral therewith, a transverse opening cutting through said body, a flared or winged extension of said depending body provided with semicircular notches or serrations in its edge and a yoke-pin arranged to engage the perforations in the support and the transverse opening and serrations in the feed-nut, substantially for the purpose described.

3. In combination, the support of the standards 1 and 2, connected at their upper and lower ends by suitable castings with a threaded spindle engaging a nut in the upper casting, an extensible sliding shoe in the lower casting provided with perforations in its body and fixed in desired positions by means of a pin or similar device engaging said perforations and perforation in the casting, of a feed-nut comprising hinged sections 12 and 20 detachably carried in the support arranged with semicircular threaded linings 24 and 25 dovetailed in said sections and each provided with lips 27 arranged to be bent back upon the outer faces of the hinged sections, and a thread-bar and power mechanism engaging said bar, substantially as described and shown.

4. In combination, the boxing comprising two hinged sections, the lower section provided with a stationary arm and a depending body, a transverse opening through said body, a series of semicircular notches arranged on the lower edge of the body, said notches struck on an arc of a circle from the transverse opening, of suitable means for supporting the hinged sections to adapt them for use in connection with a drill-support through the medium of a pin or similar device having lateral extensions adapted to be inserted through the transverse opening and to en-

gage either of the semicircular notches, substantially as herein described.

5. A coal or rock drill, comprising a support of two standards connected top and bottom, each with apertures throughout its length, a feed-nut of two hinged sections 12 and 20, the section 12 provided with the extended body 14 and depending body 13 and a yoke-pin for detachably securing the feed-nut in adjusted positions in said frame, dovetailed threaded linings secured in the sections and engaged by a thread-bar actuated through mechanism carried in the extended body 14, a threaded spindle engaging the connecting device at the upper end of the standards, and the adjustable shoe 8 arranged with a series of apertures detachably fixed in the lower connecting device of the standards by a pin 10 slipped through an aperture in the support and a corresponding aperture in the shoe 8, substantially in the manner and for the purpose described.

In witness whereof I affix my signature in presence of two witnesses.

ISAAC WANTLING.

Witnesses:

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