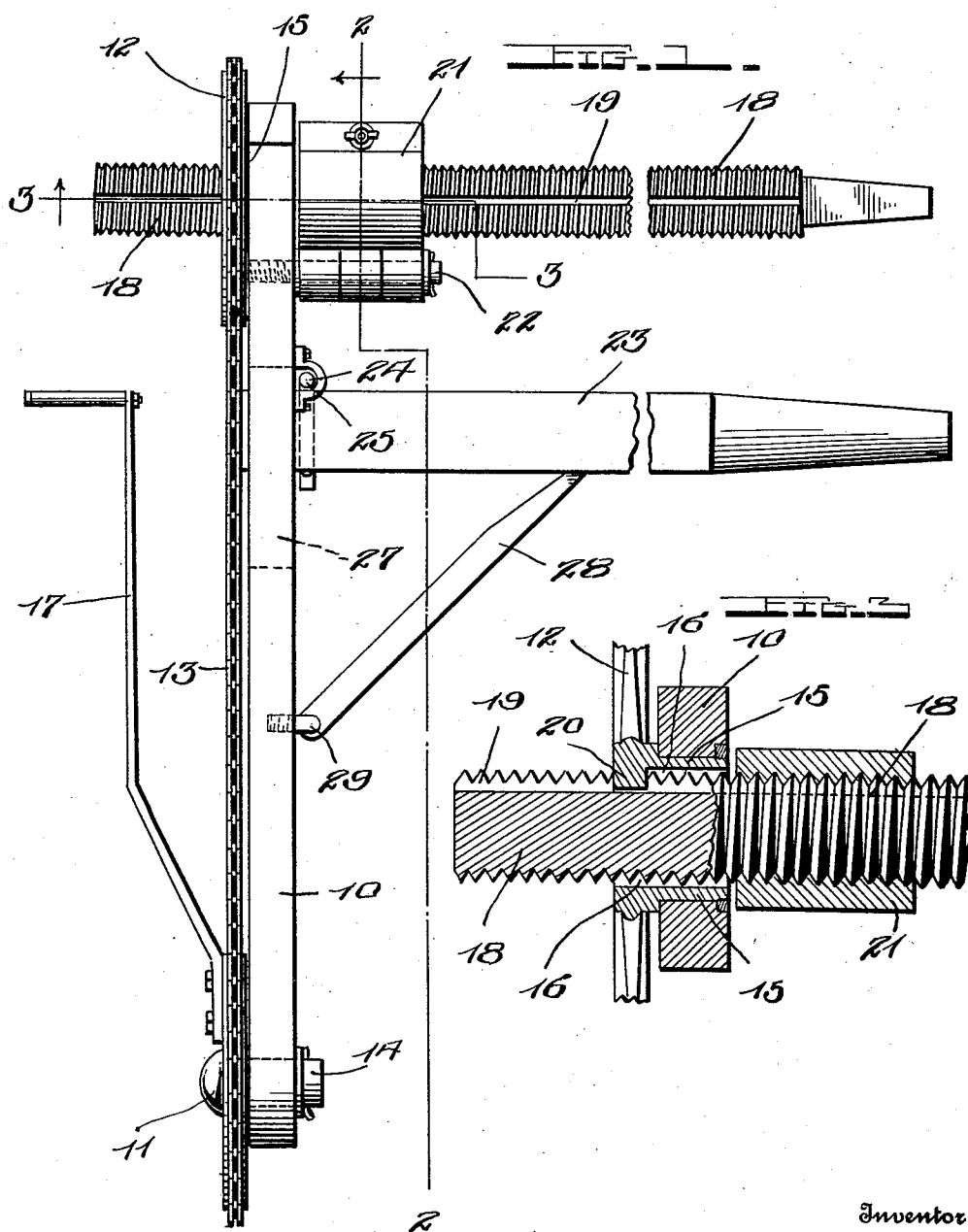


W. J. HINES.
COAL BORING MACHINE.
APPLICATION FILED JUNE 29, 1912.

1,060,840.

Patented May 6, 1913.

2 SHEETS-SHEET 1.



Witnesses

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UNITED STATES PATENT OFFICE.

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TO MATHAEU M. CONNORS AND ONE-FOURTH TO AUGUST E. ROTHLSBERGER,
BOTH OF GRANT TOWN, WEST VIRGINIA.

COAL-BORING MACHINE.

1,060,840.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed June 29, 1912. Serial No. 706,767.

To all whom it may concern:

Be it known that I, WILLIAM J. HINES, a citizen of the United States, residing at Grant Town, in the county of Marion and State of West Virginia, have invented certain new and useful Improvements in Coal-Boring Machines, of which the following is a specification, reference being had to the accompanying drawings.

10 The present invention relates to an improvement in coal boring machines, and more particularly to a device of this character which may be easily manipulated and operated by hand.

15 The principal object of the present invention resides in the construction of a device of this character which may be easily and readily assembled and the various parts thereof adapted to be easily and readily removed should they become worn or broken.

20 A further object of the present invention resides in the construction of a device of this character which will be inexpensive in the cost of manufacture, strong, durable, reliable and efficient when in use.

25 Other objects will be apparent hereinafter as the description continues, to those who are familiar with the art.

30 With the above and other objects in view, this invention consists of the novel details of construction, combination, formation and arrangement of parts as will be hereinafter more fully described, claimed and particularly pointed out in the appended drawings, in which:—

35 Figure 1 is a plan view embodying my invention. Fig. 2 is a section taken on the line 2—2 of Fig. 1 in the direction of the arrows as shown. Fig. 3 is a detail sectional view taken on the line 3—3 of Fig. 1, and Fig. 4 is a perspective view of the jack.

40 Reference now being had to the accompanying drawings wherein like and corresponding parts are illustrated by like numerals throughout the several views, the numeral 10 indicates the frame of the device which consists of a slab of metal preferably of the design shown.

45 Journaled to the outer face of this frame 10 is a pair of sprocket wheels 11 and 12, respectively, which are connected by an endless sprocket chain 13. The smaller end of the frame 10 is provided with an opening through which extends a bolt 14 and mount-

ed upon one end of this bolt is the sprocket 55 wheel 11. This bolt 14 provides a suitable stud shaft for the sprocket wheel 11 inasmuch as the head thereof forms a stop and the opposite end thereof is provided with a cotter pin so that the same may be easily 60 removed when it has become worn or broken during the constant strain exerted upon the same. The other sprocket wheel 12 is provided with an extension 15 which is counter- 65 sunk within an opening formed in the opposite end of the frame 10. This extension and sprocket wheel are provided with an opening 16 through which freely slides the shank of the boring tool. The sprocket wheel 11 has detachably secured thereto by 70 means of stud bolts a handle 17 by which the device may be easily manipulated.

The boring tool which is indicated generally by the numeral 18 is provided with a 75 threaded shank having a longitudinally extending slot 19 formed therein. A keyed extension 20 is formed integrally with the hub of the sprocket wheel 12 and extends within the opening 16 formed therein. This 80 keyed extension 20 is adapted to slide within the slot 19 and at the same time cause the boring tool 18 to rotate with the sprocket wheel 12 when the same is rotated through 85 the instrumentality of the gearing, as before described.

To provide means for supporting the shank of the boring tool 18 I provide a bearing box 21 which is hingedly connected at one end to a pin 22 mounted within one face of the frame 10. The inner end of this pin 22 90 is threaded so that the same may be easily removed when desired from the frame 10 and the outer end thereof is provided with a cotter pin for holding the bearing box in place. This bearing box 21 comprises two 95 sections each of which having formed therein alining semi-circular threaded openings for receiving the threaded portion of the bolt 18. One extremity of each of these sections are hingedly secured upon the pin 22, whereas 100 the opposite ends are connected by a bolt which is hingedly secured to the lower section and adapted to fit within a slot formed in the upper section and having a wing nut mounted thereon for holding the two sections 105 of the bearing in a stationary position.

To provide means for supporting the device when in use so that the same may be

swung at any desired angle with relation to the face of the coal to be drilled, I provide a jack 23, the inner end of which being tapered so that the same may be easily driven
 5 into the face of the coal and its opposite end squared, as shown. A pair of brackets 24 are mounted on the rear face of the frame 10 and have journaled therein a T-shaped member 25 the central arm of which extends
 10 within an opening formed within the squared portion adjacent one end of the jack 23 and a cotter pin is inserted in its free end for securely holding the same in place. The inner end of this jack 23 is
 15 adapted to fit within an elongated opening 27 formed within the frame 10. A brace rod 28 is hingedly secured to an eye bolt 29 mounted upon one face of the frame 10 and its opposite free end is adapted to rest with-
 20 in a rack 30 formed within one face of the jack 23. It is obvious from this construction that the T-shaped member 25 forms a fulcrum point for the device and the brace rod 28 forms a suitable support for holding
 25 the frame at various angles when drilling into the face of the coal.

When the device is in use the jack 23 is first driven into the face of the coal and one arm of the T-shaped member 25 is inserted
 30 within the opening 26, whereby the device may be properly supported and the brace rod 28 may be adjusted to hold the device in any angle with relation to the face of the coal. By rotating the sprocket wheel 11 by
 35 means of the handle 17, the sprocket wheel 12 will also be rotated, thereby causing the shank of the drilling tool to be rotated, which will bore into the face of the coal and as the threaded shank portion of the tool
 40 passes through the bearing 21 it will force the cutting edges of the tool into the face of the coal in the usual manner.

What I claim is:—

1. In a coal boring machine, the combina-
 45 tion with a frame, of a pair of spaced sprocket wheels journaled thereupon, a sprocket chain connecting said sprocket wheels, an internally threaded bearing hingedly secured upon the opposite face of the
 50 said frame, a boring tool having a slotted threaded shank mounted within said bearing and in one of said sprocket wheels, a key formed upon said sprocket wheel and extending into the slot of the shank of the
 55 tool, and means for rotating the other said

sprocket wheel whereby the said boring tool may be operated, substantially as described.

2. In a device of the class described, comprising a frame cast of a flat piece of metal, an elongated opening formed therein, a T-
 60 shaped member journaled upon one face of said frame adjacent said opening, a squared jack having an opening formed in one end thereof for receiving one arm of the said T-shaped member, means for holding said
 65 frame in adjusted position relative to said jack, and boring mechanism mounted in said frame, substantially as described.

3. In a coal boring machine, the combination of a frame, gear wheels journaled upon
 70 one face of said frame, an internally threaded bearing block mounted upon the opposite face of said frame, a boring tool having a threaded shank adapted to extend through said bearing block and one of said gear
 75 wheels, the last said gear wheel having a keyed extension adapted to operate within a longitudinally extending slot formed within the shank of the boring tool, means for connecting the said sprocket wheels, a handle
 80 secured to the other said sprocket wheel, a jack, and means for hingedly securing said jack adjacent the central portion of said frame, substantially as described.

4. In a coal boring machine, the combina-
 85 tion with a frame, of a pair of spaced sprocket wheels journaled therefrom, means for connecting said sprocket wheels, an internally threaded bearing pivotally mounted upon the said frame, a boring tool, a
 90 threaded shank formed integral with said boring tool and extending through said threaded bearing and one of said sprocket wheels, an internally extending key formed upon the last mentioned sprocket wheel and
 95 operatively mounted within a longitudinally extending slot formed within the shank of the boring tool, the said frame having an opening formed therein, bearings mounted upon said frame adjacent said opening, a
 100 jack having one end extending within said opening, means for hingedly connecting said jack to the bearings, and means for adjusting the said jack substantially as described.

In testimony whereof I hereunto affix my
 signature in the presence of two witnesses.

WILLIAM J. HINES.

Witnesses:

MATT CONNERS,
 CHAS. F. TOOTHMAN.