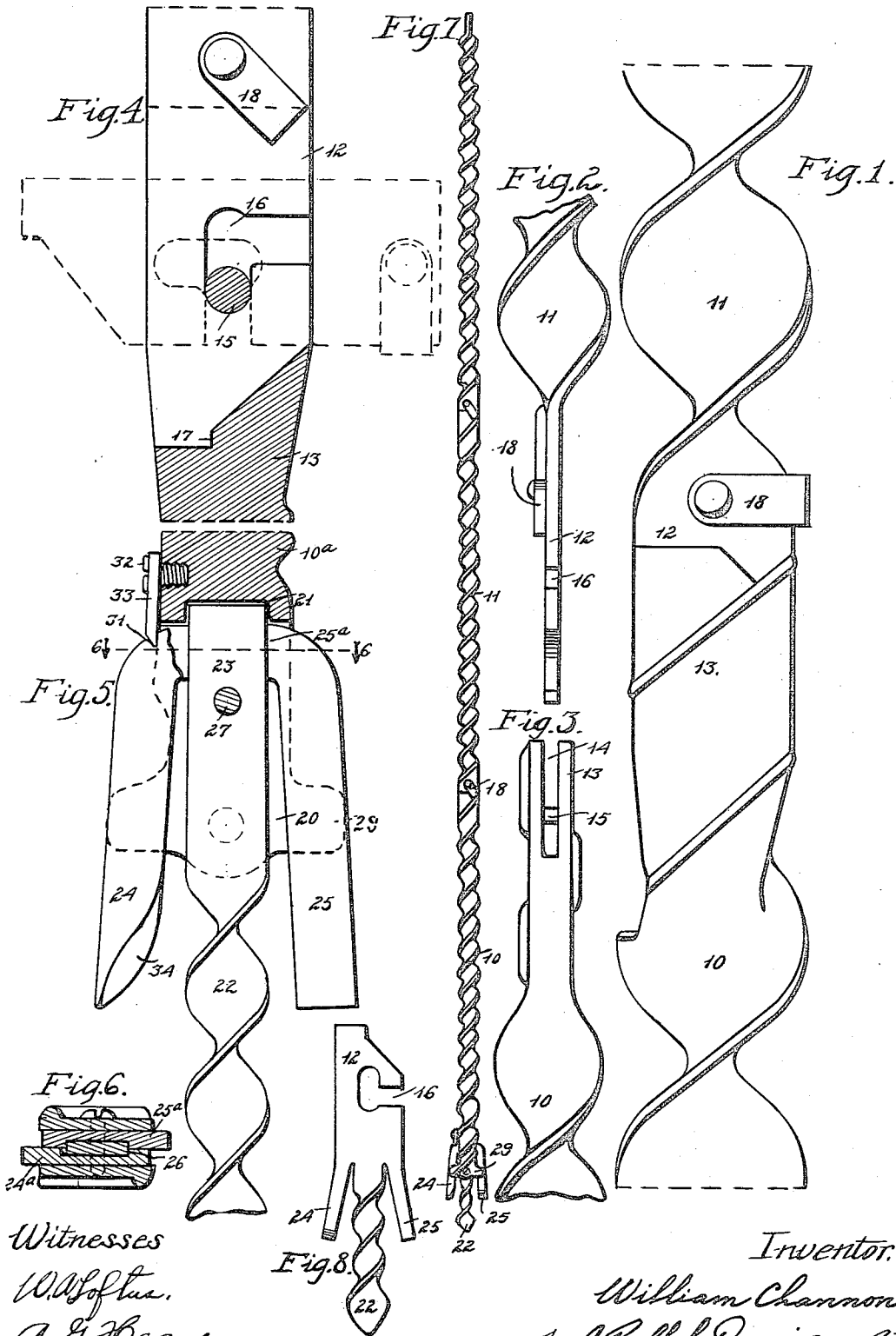


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MINER'S DRILL.
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Patented Mar. 11, 1913.



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MINER'S DRILL.

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To all whom it may concern:

Be it known that I, WILLIAM CHANNON, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Miner's Drill, of which the following is a specification.

The object of my invention is to provide a miner's drill of simple, durable and inexpensive construction made in comparatively short sections which may be easily and quickly fastened together in a firm and secure manner.

A further object is to provide a simple means whereby said sections may be quickly and firmly secured to each other. By using a drill made in sections as above mentioned, the necessity for carrying different length drills is dispensed with.

A further object of my invention is to provide a drill point together with additional cutting members for reaming out the hole, which may be easily, quickly and securely fastened to one of the drill sections.

My invention consists in certain details, in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a portion of two drill sections secured together by means embodying my invention. Fig. 2 shows a view, of an end of one of said drill sections when detached from the other taken at right angles to the view shown in Fig. 1. Fig. 3 shows the end of the other of said drill sections. Fig. 4 shows a detail view of my improved means for fastening one drill section to another, the dotted lines showing one of the sections in its position at the beginning of the movement whereby the sections are fastened together. Fig. 5 shows a side elevation of a drill point embodying my invention. Fig. 6 shows a horizontal, sectional view taken on the line 6—6 of Fig. 5. Fig. 7 shows a side elevation of a drill point and three drill sections embodying my invention, and Fig. 8 shows a drill point, one end of which is constructed to be secured to one of my improved drill sections.

In the accompanying drawings, I have employed the reference numerals 10 and 11 to indicate two sections of an ordinary screw threaded miner's drill. My drill is con-

structed in sections preferably about two feet long and one end of each section is constructed as shown in Fig. 2 and the other end as shown in Fig. 3. One end of each of my drill sections is provided with a flat bar 12. The other end of each drill section is provided with a flat bar 13 of greater thickness than the bar 12 in which is formed a slot 14 extending from one side to the other of said bar 13 and designed to freely receive the bar 12. At a suitable point a bolt 15 extends from side to side of the bar 13 through the slot 14. At a point spaced apart from the free end of the bar 12 is a laterally extending slot 16 extending from the edge of said bar to a point past the center thereof. At the inner end of said slot 16, said slot is extended longitudinally toward the free end of the bar 12 as clearly shown in Fig. 4. In securing one of my drill sections to another, and assuming that the bar 13 is in vertical position, the bar 12 is inserted therein in horizontal position until the bolt 15 is received in the slot 16. The bar 12 is then raised to vertical position. The shape of the slot 14 at the bottom thereof is as follows: Assuming that the bar 13 is in vertical position the bottom of the slot 14 is horizontal from the outer edge of the bar 13 to a point near the center thereof. The bottom of said slot 14 then extends vertically upward forming a shoulder 17 and is then beveled to the other edge of the bar 13 as shown in Fig. 4 where the lower part of the bar 13 is shown in section. The free end of the bar 12 is constructed to fit the bottom of the slot 14 as shown in Figs. 2 and 4. The upper end of the free end of the bar 13 is provided with a notch, as shown in Fig. 1 and a short bar 18 is pivoted to the side of the bar 12 in such a position that it may be dropped into said notch when the bar 12 is received in the slot 14. The sections 11 and the sections 10 are thus located firmly together and cannot be separated except by moving the pivoted bar 18.

The point of my improved drill is constructed as follows: One end of one of the drill sections such for instance as drill section 10^a shown in Fig. 5 is provided with a longitudinal slot 20 in the bottom of which is a depression 21. A drill point 22 terminates at its upper end in a flat bar 23. Cutting members 24 and 25 are provided for their upper ends with lateral extensions 24^a

and 25^a in which are notches 26 for receiving the bar 23. The cutting members 24 and 25 are placed opposite each other with the bar 23 received in the notches 26 and the upper ends of all three are then inserted in the slot 20. A screw 27 is extended through the portions of the section 10^a forming the sides of the slot 20 and through the portions 24^a and 25^a and the bar 23 and these parts are all thus held firmly together. The end of the drill section 10^a is preferably provided with short lateral extensions 29 shown in Fig. 7 and in dotted lines in Fig. 5 designed to limit the movement of the cutting members 24 and 25. The notch 26 in the lateral extension 24^a of the cutting member 24 is sufficiently large to allow some lateral play of the extension 24^a with reference to the bar 23. In the upper end of the cutting member 24 is a notch 31 and secured to the drill section 10^a above said notch by a screw 32 or other suitable means is a catch bar 33. When the catch bar 33 is in the notch 31 the cutting member 24 is held at the inward limit of its movement. When the screw 32 is removed and the catch bar 33 is moved out of engagement with the cutting member 24, said cutting member on account of the shape of its cutting edge 34 tends to move outwardly in its operation and may thus be used for reaming out a space at the bottom of the hole.

In the practical assembling and use of my improved drill member, the cutting members 25 and 24 are placed in position with their upper ends inclosing the bar 23 as shown in Fig. 6. All three parts just mentioned are then inserted in the slot 20 designed to receive them and the screw 27 is inserted in its proper place. The catch bar 33 is secured in position in engagement with the notch 31 of the cutting member 24. The drill point and the first section secured thereto may then be employed in drilling until it is necessary to use another section. When it is desired to secure another section to the drill, the bar 12 is inserted in the slot 14 in a position at right angles to the bar 13 until the bolt 15 is received in the slot 16. A bar 12 is then raised to position in line with the bar 13 and the bar 18 is dropped to engagement with the notch at the end of the bar 13.

Where the form of drill point shown in Fig. 8 is used, said drill point is secured to a section of the drill in the same manner as though it were a drill section.

My improved miner's drill has a considerable number of advantages among which are its simplicity of construction and its strength. It is quite common for miners to carry drills of different lengths, as for instance: a two foot drill, a four foot drill and a six foot drill. The two foot drill is used to start the hole and after that the

four foot drill and the six foot drill are used in succession to complete the drilling. To drill a six foot hole requires twelve feet of drill. With my device the sections can be made in two feet lengths and six feet of drill will cut a six foot hole. Thus my improved drill results in the saving of labor both in carrying the drills in the mine and in carrying them to and from the shop where they are sharpened. It is believed that the construction shown herein in describing the means for connecting two drill sections is so strong, simple and inexpensive as to give my drill a considerable advantage over those now in use. The method of securing the drill point 22 and the cutting members 24 and 25 to each other and to the drill section produces a drill point of great strength which may be readily and easily taken apart. Where the form of drill point shown in Fig. 8 is used the drill point alone may be taken to the shop for sharpening and the transportation of drill sections is avoided.

I claim as my invention:

1. In a device of the class described, the combination of a screw threaded drill section having at one end a flat bar provided with a slot extending from one edge thereof to a point slightly past the center of said bar and from thence extending longitudinally toward the adjacent end of the drill section, the adjacent end of said flat bar being beveled over part of its length on the same edge of the bar which contains the first described part of said slot, then having a vertical shoulder and a substantially horizontal end, a second screw threaded drill section, a flat bar at one end thereof having a notch at one side of its upper end, a longitudinal slot in said flat bar, designed to receive the flat bar on said first drill section, a bolt extending through the sides of said flat bar on said second section across said slot, and designed to be received in the slot in said first drill section, the bottom of said slot being horizontal from its edge to a point near its middle and being then provided with a vertical shoulder and then with an inclined portion extending to the other edge of said bar, to fit the end of the bar on said first drill section and a swinging latch on said first named bar, designed in one position of its movement to engage said notch.

2. In a device of the class described, a screw threaded drill section having at one end a flat bar provided with a slot extending from the edge thereof to a point past the center of said plate and from thence extending longitudinally toward the adjacent end of the drill section, the end of said flat bar being beveled over part of its length, then having a vertical shoulder and a horizontal end, a plate pivotally mounted on

said bar, a second screw threaded drill section having a flat bar at one end thereof, a longitudinal slot in said flat bar, a bolt extending through the sides of said slot, the
5 bottom of said slot being horizontal from its edge to a point near its middle and being then provided with a vertical shoulder and then with an inclined portion extending to the other edge of said bar, a notch formed

in one side of the free end of the bar on said 10 second section designed to receive said pivoted bar in one position of its movement.

Des Moines, Iowa, August 30, 1911.

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Witnesses:

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