

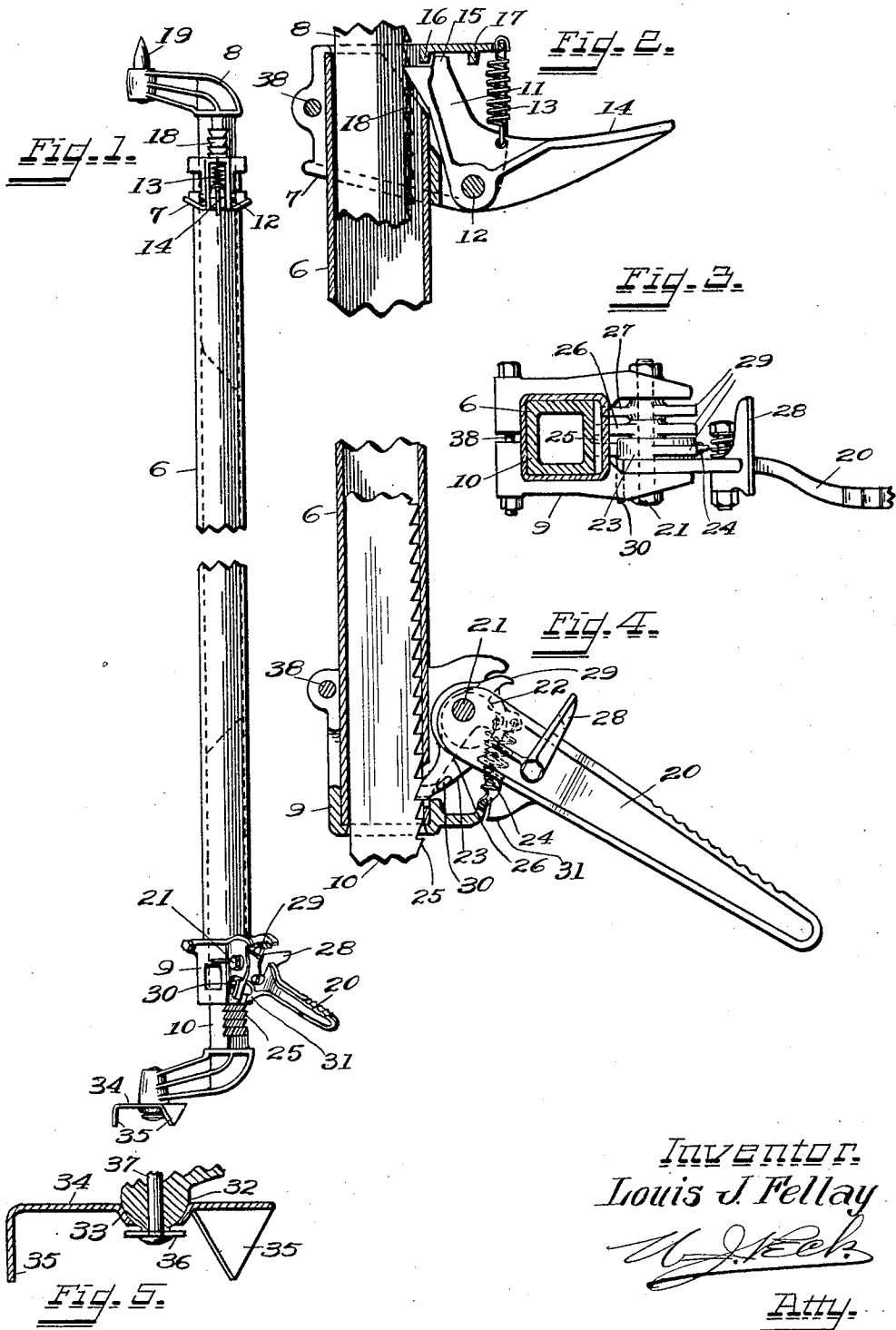
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MINING DRILL POST

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MINING DRILL POST

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My invention relates more particularly to off-set posts for use with electric mining drills and in which the post itself is usually square in cross section and tubular, and provided with extensible ends for contact with an upper and lower support.

One object of my invention is the elimination of screw-threaded jacks for securing the post in position.

Another object of my invention is the provision of means whereby the elongation of the structure may be accomplished easily, quickly, and positively.

Another object of my invention is the provision of quick releasing means whereby the post may be dismounted instantly, thereby saving time in moving it and the drilling mechanism from place to place during operation.

Other objects of my invention will appear and be described in the specification.

The novelty of my invention will be hereinafter more fully set forth and specifically pointed out in the claims.

In the accompanying drawing:

Fig. 1 is a side view of a mining drill post embodying my invention.

Fig. 2 is an enlarged detail partly in section, of the upper portion of the post proper and its associated parts.

Fig. 3 is a sectional plan view of the lower portion of the post proper and its associated parts.

Fig. 4 is a side view, partly in section of the parts shown in Fig. 3.

Fig. 5 is an enlarged detail of the lower portion of the post.

The same numerals of reference are used to indicate identical parts in all the figures.

As illustrating one form of construction embodying my invention, though without limiting myself to the details of construction and arrangement of parts shown and to be herein described, but availing myself of all changes and modifications which may be

made within the scope of the appended claims, I have shown a mining drill post comprising essentially five sections, namely, the post section 6, its upper section 7, upper extension member 8, lower post section 9, and lower extension member 10.

Referring more particularly to Fig. 2, the upper section 7 carries a pawl 11 pivotally mounted in the section 7 as by pin 12. The pawl is normally moved toward the center of the post by the tension spring 13, and is provided with a releasing handle 14 by means of which it may be retracted. An upward extension of the pawl co-operates with an inward movement limit 16 and an outward movement limit 17, the pawl itself engaging ratchet teeth 18 formed on the shank of the upper member 8, which as shown in Fig. 1, carries a spur 19 to engage the upper support for the post.

Referring now more particularly to Figs. 3 and 4.

The lower section 9 carries a lever 20 pivoted on the bolt 21, and this lever carries an eccentric 22 upon which is mounted a pawl 23 normally moved inwardly at its lower end by a spring 24, the construction being such that as the lever 20 is moved upwardly and downwardly after the fashion of a pump handle, the dog 23 is moved upwardly and downwardly and caused to successively engage the teeth 25 formed in the shank of the lower member 10.

Mounted on the bolt 21 adjacent the lever 20 and dog 23 are a pair of pawls 26 and 27 each of which is provided with its own spring 24, similar to the spring 24 for the dog 23, the dog 26 being longer than the dog 27 by an amount equal to half the distance between the ratchet teeth 25 of the member 10.

As thus far described it is obvious that as the lever 20 is moved upwardly and downwardly the member 10 is forced downwardly and held against upward movement by one or the other of the dogs 26 and 27, the amount of

depression of the lever 20 determining which of the dogs 26 or 27 will resist an upward movement of the member 10.

5 The lever 20 also carries a releasing member 28 and the upper portion of the dog 23 and each of the pawls 26 and 27 is formed as a hook 29 and when the upper end of the releasing member 28 is moved on its pivot toward the post 6, and the lever 20 is moved
10 to its upper position, the dog 23 and the pawls 26 and 27 are moved out of engagement with the teeth 25 of the member 10, permitting this member to move upward in the post 6.

15 Should the position of the parts be such that the releasing member 28 cannot be moved under the hooks 29 due to the elevated position of the lever 20, it will be necessary to disengage the dog 23 so that the lever 20 may be moved to permit the member 28 to be
20 swung to releasing position, and this is accomplished by the provision of a lug 30 which projects from the side of the dog 23 through a suitable opening in the section 9
25 so that the operator may engage the lug and move the dog away from the teeth 25 to permit the lever 20 to be moved.

A downward movement limit 31 is carried by the lever 20 and when this is in contact
30 with the lower portion of the section 9, the dog 23 is moved downwardly so close to the lower portion of the opening through which it passes to engage the teeth 25 that it cannot swing on its pivot out of engagement with
35 these teeth and forms a lock to prevent the member 10 from dropping out of the bottom of the post while the latter is being transported from place to place.

The lower member 10, instead of being provided with a spur 19, as is the upper member 8, is spherically formed as at 32 and engages a correspondingly formed seat 33 in a triangular plate 34 which has its three corners bent down to form spurs 35 to engage the
45 lower support for the post, the plate 34 being held upon the portion 32 of the member 10 by a washer 36 and a rivet 37, the construction being such that the plate 34 has a universal movement with relation to the
50 member 10 so that it may properly fit against the supporting surface even though that surface may be irregular or out of level.

Suitable clamping bolts 38 hold the sections 7 and 9 upon and respective ends of the
55 post 6.

The operation of the post is as follows: When the post is being transported from place to place the members 9 and 10 are moved inwardly with relation to the post thus
60 reducing its extreme length and when it is desired to mount the post for a drilling operation, it is placed between the supports and the member 8, extended or both members 8 and 10 partially extended to bring the spur
65 19 into contact with one support and the

plate 34 into contact with the other whereupon by moving the lever 20 as previously described, the post is further extended to force the spurs into engagement with the support to whatever extent may be desired or
70 required.

I have not shown or described any drilling mechanism or mounting as these form no part of the present invention, though they are necessary to its use, and it is assumed for present purposes that some form of drilling
75 mechanism is mounted on the post.

When it is desired to dismount the post, this may be accomplished from either end, by retracting the pawl 11 by means of its lever 14, or by disengaging the pawls 26 or 27 and the dog 23 by means of the member 28 and the lever 20 as previously described.
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It will be seen from the above that I have provided a post which can be almost instantly set in position and caused to firmly engage its supports; a post which can be instantly dismounted; and one which is composed of but few parts, and these parts all of simple and rugged construction.
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It is also to be noted that by the provision of the plurality of pawls at the lower end of the post, and the different lengths of these pawls, I am enabled to provide the lower member 10 with relatively coarse teeth 25
90 while at the same time providing a relatively fine graduation of locking positions for the extending movement of the member 10.

Having thus described my invention, I claim:
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1. In a mining drill post the combination of a post section, an extensible member co-operating with the post section, a dog co-operating between the post section and the extensible member, a lever for moving the
100 dog, a pawl co-operating between the post section and the extensible member for holding the latter in extended position, and a releasing member co-operating between the lever and the dog and pawl for releasing both of the latter to permit retraction of the extensible member.
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2. In a mining drill post the combination of a post section, an extensible member co-operating with the post section, a dog co-operating between the post section and the extensible member, a lever for moving the dog, a plurality of pawls co-operating between the post section and the extensible member for holding the latter in extended
110 position, and a releasing member co-operating between the lever and the dog and pawls for releasing both of the latter to permit retraction of the extensible member.
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3. In a mining drill post the combination of a post section, an extensible member mounted at each end thereof, a ratchet and pawl engagement between the post and one of the extensible members, a dog co-operating between the post and the other extensible
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member, means for moving the dog, a plurality of pawls of different lengths for holding the latter extensible member in extended position, and a releasing member co-operating between the means for moving the dog and the pawls for releasing the dog and pawls from engagement with the extensible members.

4. In a mining drill post the combination of a post section, an extensible member mounted at each end thereof, a ratchet and pawl engagement between the post and one of the extensible members, a dog co-operating between the post and the other extensible member, means for moving the dog, a plurality of pawls of different lengths for holding the latter extensible member in extended position, a releasing member co-operating between the means for moving the dog and the pawls for releasing the dog and pawls from engagement with the extensible members, and additional releasing means for the dog to permit movement of the means for moving the dog to permit the engagement of the releasing means with the dog and the pawls.

5. In a mining drill post the combination of a post section, an extensible member at one end thereof, a ratchet and pawl engagement between the post and the extensible member, means for retracting the pawl, an extensible member at the opposite end of the post section, a dog and ratchet engagement between the post and the latter member, a lever for moving the dog to move the extensible member, a pawl co-operating between the post and the extensible member to hold the latter in extended position, and a releasing member engageable between the lever and the dog and pawl for moving both to disengaged position to permit retraction of the extensible member.

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