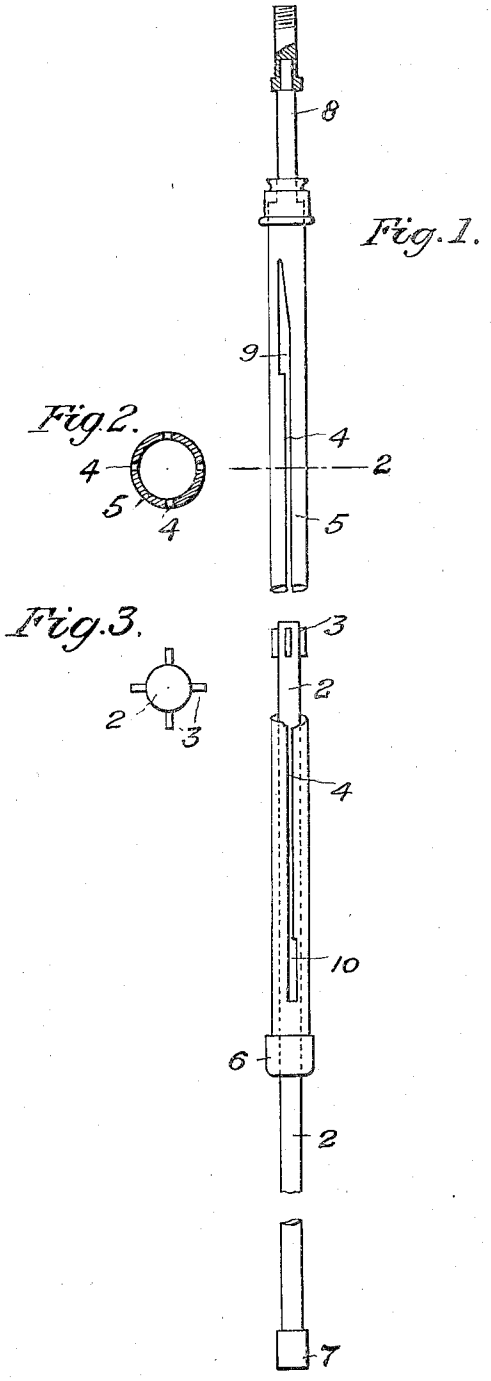
M. ELCHINKO.

WELL DRILL.

APPLICATION FILED JAN. 30, 1920.

1,368,126. Patented Feb. 8, 1921.



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WELL-DRILL.

1,368,126. Specification of Letters Patent. Patented Feb. 8, 1921.

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To all whom it may concern:

Be it known that I, MICHAEL ELCHINKO, a subject of the King of Great Britain, residing at Cloverdale, in the Province of British Columbia, Canada, have invented certain new and useful Improvements in Well-Drills, of which the following is a specification.

This invention relates to a connection for a drill bar, such as is used in drilling for oil. The device is designed to attain a more effective action of the drill end, by freeing the main rods of the drill to which the cutting head is secured at their connection with the light drill rods by which the drill is raised and lowered from the walking beam, that the main rods and drill may fall freely to effect the cut, and may thereafter be picked up and lifted to repeat.

In ordinary use the drill bars are raised and lowered by more or less direct connection to the walking beam end, so that the movement is relatively slow and the drill end is practically free from percussive effect.

With the device, which is the subject of this application, the drill bars are telescopically connected to the light operative rods with provision by which the drill bars are retained at the upper limit of the telescopic movement until the drill rods are at the upper limit of their stroke, when by the quarter turn to the left, which is manually imparted to the drill rods, the drill bar connection is released and allowed to fall by its own weight, thus delivering an effective sharp impacted blow of the cutting bit in the bottom of the hole.

The invention is fully set forth in the following specification, reference being made to the drawings by which it is accompanied, in which—

Figure 1 is an interrupted elevation of the connection which is the subject of this application.

Fig. 2 is a cross section to an enlarged scale on the line 2 in Fig. 1, and

Fig. 3 is an end view of the vaned end of the rod 2.

In these drawings 2 represents a rod, the lower end of which is connected at 7 to the main rods of the drill. This rod 2 is telescopically slidable within a tube 5 and centered therein by a cap 6. The upper end of this tube 5 is connected at 8 to the light rods by which the drill is connected to the walking beam above ground.

The tube 5 is provided with four lengthwise slots 4 which are adapted to receive radial vanes 3 secured in the upper end of the rod 2. These vanes 3 in their slots 4 prevent the main rods and their connected drill from rotating independently of the light rods which are connected to the beam and also insure that rotational movement imparted to the drill rods will be transmitted to the drill.

A detent 9 is formed to the left at the upper end of each vane slot 4 and a similar detent 10 is at the right of the lower end of each slot.

With this connection between the light rods connected to the walking beam and the main rods to the lower end of which the drill is secured, when the drill is at the bottom of the hole, the vanes 3 at the head of the rod will enter the detents 9 at the upper end of the slots 4 of the tube 5, and the main rods and drill will thereby be lifted to the upper limit of the stroke of the beam.

At that limit and before the down-stroke commences the drill rods are manually turned a quarter turn to the left, the initial part of which movement will free the detents 9 from their engagement with the vanes 3, and the main rods and drill which are connected at 2, will freely fall and will give the drill the sharp percussive action which is desired. The light rods with the tube 5 connected will follow slowly down with the motion of the beam end and at the lower limit of their movement will be again moved to bring the detents 9 into engagement with the vanes 3 and enable the main drill rods to be lifted to the upper limit by the beam.

The detents 10 at the lower end of the vane slots 4 are designed to enable the rod 2 to be retained at that end, when it is desired to hold the rods 2 and 5 against telescoping by rotating the drill rods to the left.

Having now particularly described my invention, I hereby declare that what I claim as new and desire to be protected in by Letters Patent, is:

1. In a well drill in combination with the light drill rod, a tube connected on the end of the same and having a longitudinal slot provided at its upper end with a lateral enlargement to provide a shoulder and terminating at its upper end in an inclined wall, a main drill rod telescoping into said tube and having a lug moving in said longitudinal slot whereby when said main drill rod is telescoped into said tube said lug will en-

gage said inclined wall and turn said main drill rod to bring its lug into alinement with the offset or shoulder to hold the parts telescoped substantially as shown and described.

2. In a well drill, light drill rods, a tube connected to the lower end of the light drill rods, which tube is lengthwise slotted with a lateral detent to the left at the upper end of each slot and a lateral detent to the right at the lower end of each slot, a rod member adapted to be connected to the upper end of the main drill rods and susceptible of endwise movement in the tube, said endwise movable rod having radial vanes projecting from its upper end to fit the lengthwise slots of the tube and adapted to be retained in the lateral detent of the same at the upper end of each slot, from which detent the vanes may be released by partial rotation of the light drill rods to the left whereby the rod which is adapted to be connected with the main drill rods may be allowed to fall free in the tube, the detent at the lower end of each slot being adapted to retain the vanes at the lower ends of the slots when desired.

In testimony whereof I affix my signature.

MICHAEL ELCHINKO.