J. A. KING.

DRIFT BOLT PULLER.

APPLICATION FILED SEPT. 21, 1909.

957,565. Patented May 10, 1910.

Fig. 1.

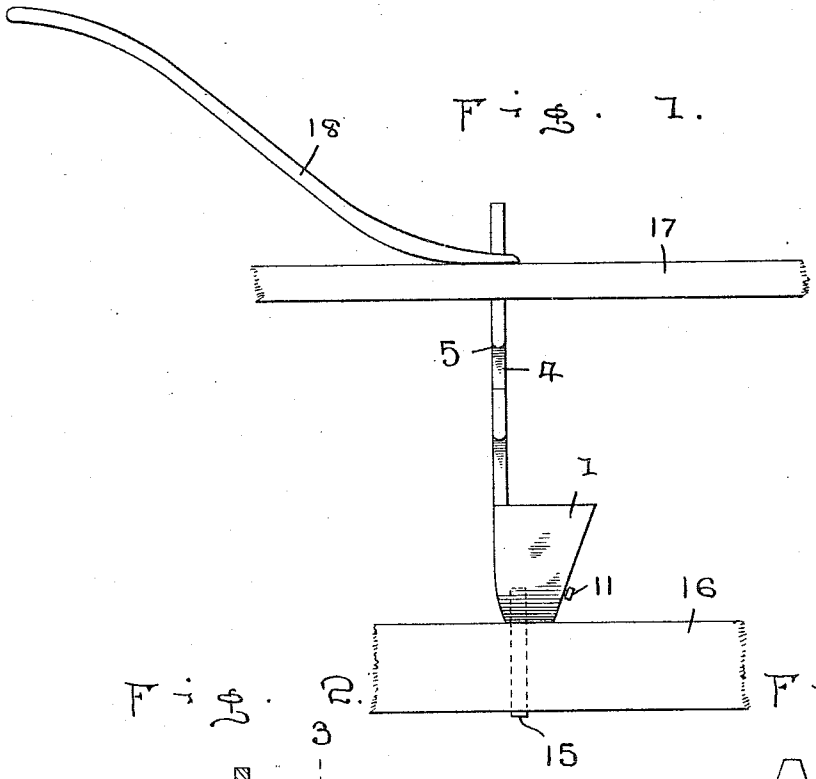


Fig. 2.

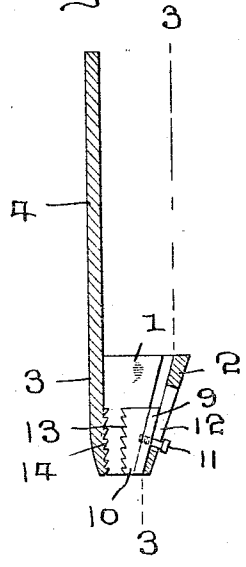
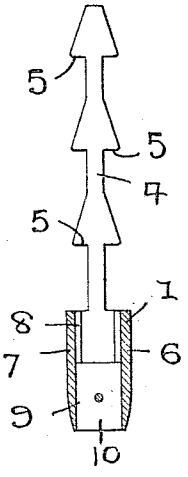


Fig. 3.



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DRIFT-BOLT PULLER.

957,565. Specification of Letters Patent. Patented May 10, 1910.

Application filed September 21, 1909. Serial No. 518,836.

To all whom it may concern:

Be it known that I, JOHN A. KING, a citizen of the United States, residing at St. Maries, in the county of Kootenai and State of Idaho, have invented certain new and useful Improvements in Drift-Bolt Pullers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to new and useful improvements in drift bolt pullers and is designed more particularly for removing drift bolts from parts of a bridge construction and my object is to provide means for engaging the end of the drift bolt and cause the same to leave the object into which it is extended, when upward pressure is applied to the puller.

A further object is to provide an adjustable block, whereby bolts of various sizes may be extracted.

A further object is to provide means for holding the block against casually leaving its seat or socket and a further object is to provide means whereby a bar may be engaged with parts of the puller to move the same outwardly or upwardly.

Other objects and advantages will be hereinafter referred to and more particularly pointed out in the claims.

In the accompanying drawings forming part of this application, Figure 1 is an elevation of a portion of a bridge structure, showing my improved bolt puller applied to use. Fig. 2 is a central vertical sectional view through the puller and, Fig. 3 is a sectional view as seen on line 3—3, Fig. 2.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 indicates the body of my improved bolt puller, one wall 2 of which is inclined, while the opposite wall 3 terminates in an upwardly extending shank 4 and on the edges of this shank are provided shoulders 5, with which an object is to be engaged for operating the puller.

The side walls 6 and 7 of the body 1 are provided with grooves 8 adjacent the inclined wall 2, said grooves having the same inclination as the wall 2 and into these grooves extend tongues 9 extending outwardly from the side edges of a wedge block 10, the taper of said block being along one face thereof, the angle of the taper being the same as the angle of the wall 2, so that the opposite face of the block will always rest in a vertical position when the block is adjusted upwardly or downwardly. The block 10 is adapted to move upwardly or downwardly the full length of the body 1 and it will be readily seen that as the block is moved upwardly, the distance between the wall 3 and vertical face of the block will be increased, the vertical movement of the block being limited by extending a bolt or pin 11 through the slot 12 in the inclined wall 2, the inner end of the bolt being engaged with the wedge block, the bolt preventing the block from leaving the opening in the body.

The vertical face of the block 10 is provided with teeth 13, while the face of the wall 3 opposite the vertical face of the wedge block 10 is also provided with teeth 14 and it will be readily seen that when the end of the drift bolt 15 is securely engaged by the teeth upon the wedge block and wall of the body, the bolt will be securely held in engagement with the body and caused to leave the part of the bridge or object into which the bolt is entered when the extractor is moved upwardly.

In operation, the body 1 is placed over the end of the drift bolt 15 and said body moved downwardly, until it rests upon the stringer 16, through which the drift bolt extends, the introduction of the bolt into the lower end of the body moving the block 10 upwardly until the vertical face thereof is a sufficient distance from the face of the wall 3, to permit the end of the bolt to pass between the face and block and in view of the inclination of the wall 2 and arrangement of the block, said block will descend by gravity and positively engage the bolt, the teeth on the block and wall preventing the body from leaving the bolt. The shank 4 is preferably passed between the tie rods 17 or other parts of the bridge structure and in order to extract the bolt, the end of a bar 18 is introduced below the shoulders nearest the upper edges of the tie rods, when a prying movement is given the bar and the pulling device moved bodily upward, thus extracting the bolt. If it is impossible to raise the puller a sufficient distance to extract the bolt with one operation of the bar 18, and the operator is unable to engage the bar with the next succeeding set of shoulders, the body may be

further lowered into engagement with the bolt and the prying operation repeated.

It will thus be seen that I have provided a very cheap and economical form of device for extracting drift bolts from timber or the like and one that can be readily applied to use. It will further be seen that by arranging the wedge block and the body of the device as shown, pressure of the block on the bolt will be increased when the device is operated to remove the bolt and it will likewise be seen that by providing the teeth as shown, the bolt will be securely grasped and held in engagement with the wedge and parts of the body.

What I claim is:

1. A drift bolt puller comprising a hollow body, one wall of which is inclined, a shank extending upwardly from the wall opposed to said inclined wall, shoulders arranged in pairs on opposite edges of said shank, a wedge block having tongues thereon, the end walls of said body having grooves to receive said tongues, whereby the block will be caused to move in a path co-incident to the angle of the inclined wall and means to hold said block within the body and limit the movement thereof.

2. A device of the character described, comprising a hollow body member having one wall thereof inclined from its upper to its lower end with a slot therein, the opposite wall having teeth and a shank extending therefrom, said shank having shoulders thereon, a wedge block having tongues extending therefrom, the interior faces of the side walls of said body member having grooves therein to receive said tongues and means coöperating with said slot to limit the movement of said block.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN A. KING.

Witnesses:
A. A. DARKNELL,
W. F. SARGENT.