Oct. 30, 1923. 1,472,524

W. HOSKIN

STEEL PULLER

Filed Jan. 8, 1918

Fig. 1.

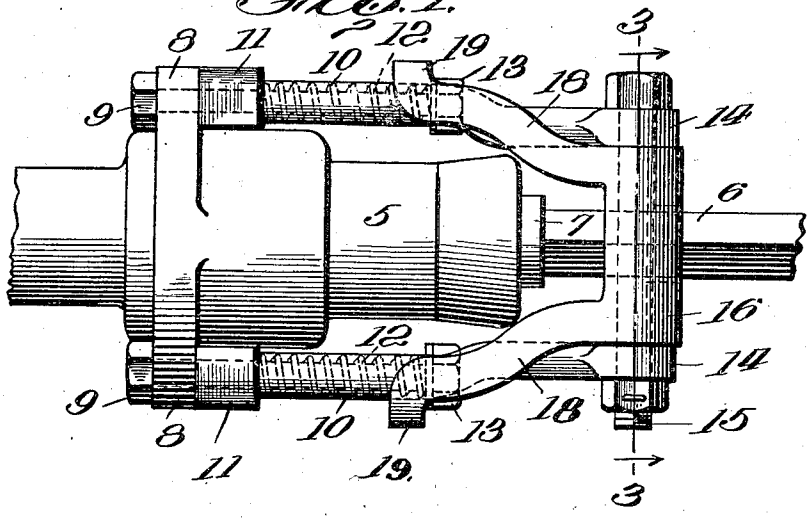


Fig. 2.

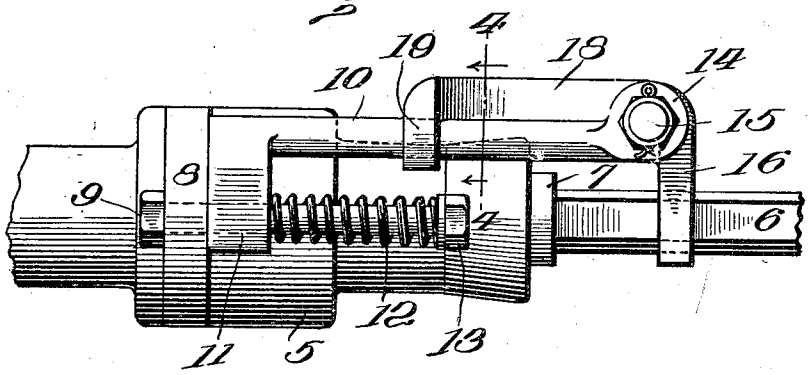


Fig. 3.

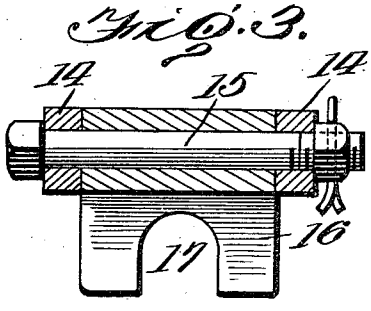
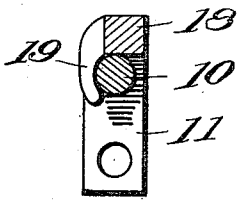


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM HOSKIN, OF DENVER, COLORADO, ASSIGNOR TO THE DENVER ROCK DRILL MANUFACTURING COMPANY, OF DENVER, COLORADO, A CORPORATION OF DELAWARE.

STEEL PULLER.

Application filed January 8, 1918. Serial No. 210,913.

To all whom it may concern:

Be it known that I, WILLIAM HOSKIN, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Steel Pullers, of which the following is a specification.

The present invention relates more particularly to that type of tool retainer for temporarily holding a drill steel or similar device against disengagement from the socket of the holder, so that the drill steel can be extracted from the drill hole.

In the accompanying drawings,

Figure 1 is a plan view of one embodiment of the invention,

Figure 2 is a side elevation of the same,

Figure 3 is a sectional view on the line 3—3 of Figure 1,

Figure 4 is a detail sectional view on the line 4—4 of Figure 2.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the embodiment disclosed, the tool holder is designated 5, and may be of any suitable structure, having the usual socket for detachably receiving the rear end of a drill steel or other tool, a portion of which is shown at 6, this tool having a collar 7 thereon. The tool holder 5 is provided with oppositely outstanding ears 8 through which are passed longitudinal bolts 9 that project beyond the ears and are disposed on opposite sides of the tool holder 5 in spaced relation thereto.

Supporting means are employed in the form of side arms 10 arranged parallel to the bolts 9, and having offset rear ends or ears 11 slidably mounted on said bolts. The forward sliding movement of the ears 11 is resisted by coiled springs 12 on the bolts 9 which are interposed between the ears 11 and the front heads 13 of the bolts. The front ends of the supporting arms 10 terminate in eyes 14 through which is passed a transverse pivot bolt 15, and on this pivot bolt is journaled a retaining element in the form of a yoke 16 having a notch or opening 17 of sufficient size to permit the passage of the shank of the tool 6, and to prevent the passage of its collar 7. This tool retaining element or yoke 16 is provided with divergent rearwardly extending offset yielding fingers 18 terminating at their rear ends in inset hooks 19 that are adapted to detachably embrace the arms 10, as will be clear by reference to Figure 4.

It will be obvious that with this structure if the yoke 16 is placed in the position shown by the drawings, it will be operative to prevent the disengagement of the tool 6 from the tool holder, as it will be in the path of movement of the collar 7 and any strain upon it due to the striking of said collar against the yoke will not effect the outward swinging movement of said yoke, inasmuch as the rear ends of the fingers 18 bear upon the arms 10, while inward swinging movement of said yoke is also prohibited by the interlocking action of the hooks 19 with said arms. This interlocking action can, however, be easily broken by the operator as the spring fingers 18 will permit sufficient yielding movement to allow the hooks 19 to pass over the arms 10, and the yoke thus be swung out of the path of the collar, so that the tool 6 can be disengaged from the holder 5.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. The combination with tool holding means, of a retainer comprising a forwardly yielding support, a tool engaging element mounted on the support and movable thereon to and from an operative position to be engaged by a tool placed in the tool holding means, and locking means offset from the tool engaging element and extending longitudinally of the support for holding the same in its said operative position.

2. The combination with a tool holder, of supporting means including an arm having a yielding movement with respect to the tool holder, a tool retaining element movably mounted on the arm, and a device offset from the element and detachably interlock-

ing with the arm in rear of the mounting of the element thereon to secure the element against pivotal movement on the arm.

3. The combination with a tool holder, of supporting means including a forwardly extending yielding arm, a tool retaining element pivoted on the arm in advance of the tool holder, and a finger offset from the element and extending longitudinally of the arm, said finger having a portion detachably interlocking with the arm to secure the element against material pivotal movement.

4. The combination with a tool holder, of yielding supporting means mounted thereon and including a forwardly extending arm, a transversely disposed tool retaining element pivoted on the arm, and a rearwardly extending locking finger carried by the element and having an offset hook portion that detachably interlocks with the arm to hold the retaining element in its operative position to be engaged by a tool.

5. The combination with tool holding means having a tool receiving socket and forwardly extending bolts, of forwardly extending arms having offset rear ends slidable on the bolts, springs for resisting the sliding movements of the arms, a transversely disposed tool retaining yoke pivotally mounted on the front ends of the arms, and rearwardly extending spring fingers carried by the yoke and having terminal hook portions that detachably interlock with the arms.

6. The combination with a tool holder, of supporting means mounted thereon and including a forwardly yielding arm, a tool retaining element movably mounted on the arm, and a device offset from the element and extending longitudinally of the arm, said device detachably bearing against the arm to stop the element in a position to be engaged by the tool.

7. The combination with a tool holder, of supporting means mounted thereon and including a forwardly extending and forwardly yielding arm, a tool retaining element pivoted on the arm, and a rearwardly extending finger carried by the element and arranged to bear against the arm to stop the element in a position to be engaged by the tool.

8. The combination with a tool holder, of forwardly extending bolts engaged therewith, forwardly extending arms forwardly slidable on the bolts, springs resisting the forward movements of the arms, a tool retaining yoke pivoted on the arms, and rearwardly extending fingers carried by the yoke and arranged to bear against the arms to limit the swinging movement of the yoke.

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

WILLIAM HOSKIN.

Witnesses:
SULLIVAN V. JOHNSON,
EDWD. L. OLDHAM.