C. C. HOSMER AND C. H. WINES.

ROTARY DRILL PIPE SLIP.

APPLICATION FILED AUG. 3, 1921.

1,414,951. Patented May 2, 1922.

Fig. 1.

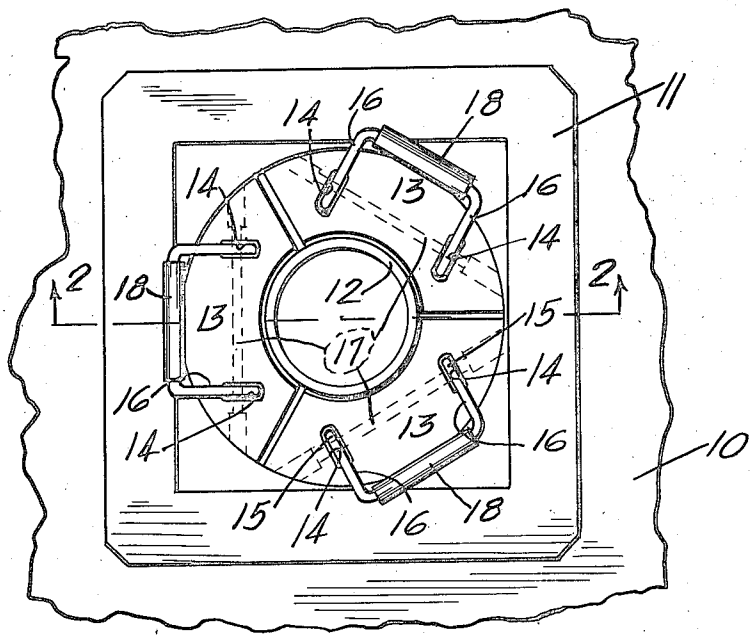


Fig. 2.

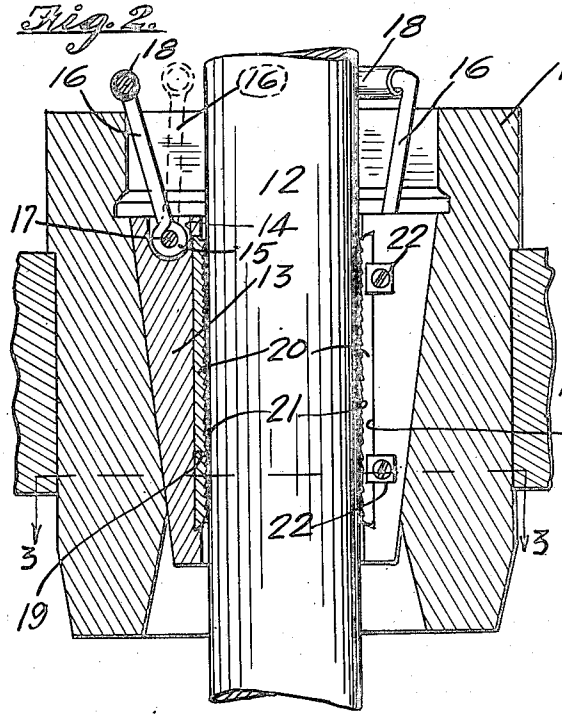
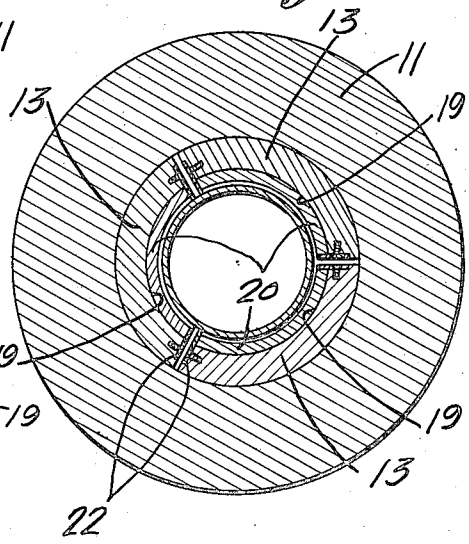


Fig. 3.



INVENTORS

Chester C. Hosmer

Carleton H. Wines.

BY Hazard & Miller

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHESTER C. HOSMER AND CARLETON H. WINES, OF HUNTINGTON BEACH, CALIFORNIA.

ROTARY DRILL-PIPE SLIP.

1,414,951. Specification of Letters Patent. Patented May 2, 1922.

Application filed August 3, 1921. Serial No. 489,477.

To all whom it may concern:

Be it known that we, CHESTER C. HOSMER and CARLETON H. WINES, citizens of the United States, residing at Huntington Beach, in the county of Orange and State of California, have invented new and useful Improvements in Rotary Drill-Pipe Slips, of which the following is a specification.

Our invention relates generally to drilling apparatus, and more particularly to a rotary drill pipe slip; the principal objects of our invention being to generally improve upon and simplify the construction of the existing types of slips, to provide a construction wherein the slips are equipped with removable and interchangeable liners and handles, and further to provide a construction that may be easily and cheaply produced, and which will be very effective in performing its intended functions.

With the foregoing and other objects in view, our invention consists in certain novel features of construction and arrangement of parts that will be hereinafter more fully described and claimed and illustrated in the accompanying drawings, in which:

Figure 1 is a top plan view of a portion of a rotary drill table, and showing slips of our improved construction arranged in the bushing and in engagement with the rotary pipe.

Fig. 2 is an enlarged vertical section taken approximately on the line 2—2 of Fig. 1.

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2.

Referring by numerals to the accompanying drawings which illustrate a practical embodiment of our invention, 10 designates the drill table, 11 the usual master bushing that is carried by said table, and 12 the rotary drill pipe that passes through said bushing and downward into the drill hole. The bushing 11 may be square at the top as shown in Fig. 1 and round at the bottom as shown in Fig. 3.

The slips contemplated by our invention are in the form of segments, each of which comprises a body 13 that is wedge-shaped in vertical or longitudinal section and of arcuate shape in cross section. We prefer to form the segmental slip members so that three of them will co-operate to form a tapered sleeve that may be positioned within the bushing 11 and around the drill pipe, although the number of the segments may be increased if desired.

Formed in the top of each segmental slip body 13 is a pair of recesses 14 that are adapted to be occupied by loops 15 that are formed on the lower ends of the vertical members of inverted U-shaped handles 16, and in order to connect these handles to the slip bodies, pins such as 17 are removably seated in the upper portions of said slips, and which pins pass through the loops 15. The openings for the pins 17 are counterbored from each end so as to shorten the lengths of the pins required and to facilitate the insertion and removal of the pins by driving punches. Thus each slip is provided with a detachable and interchangeable handle, and which latter provides simple and efficient means for manipulating the slip while being positioned in or removed from the bushing 11. The horizontally disposed upper portion of each handle 16 is provided with a sleeve 18 that forms a convenient handhold.

The inner curved face of each slip body is provided with a vertically disposed transversely curved pocket 19, in which is removably positioned a hardened metal liner plate 20, the outer face of which is provided with horizontally disposed ribs or teeth 21, the points of which are upwardly presented. These liner plates which are intended to directly engage the surface of the rotary drill pipe are retained in position on the slips in any suitable manner, preferably by means of small plates or clips 22 that are secured to the side faces of the bodies of the slips and overlie the side edges of said liner plates (see Figs. 2 and 3).

In order to firmly retain the liner plates 20 within the recesses 19, the upper and lower edges of said recesses are undercut or dovetailed, and the upper and lower ends of the liner plates are correspondingly shaped so that said liner plates must be applied to the bodies of the slips 13 from the sides thereof and by a lateral or horizontal movement, and after said liner plates have been properly positioned in said recesses they are locked therein by the plates 22.

Slips of our improved construction may be readily handled when positioned within or removed from the bushing 11 of the drill table, and the teeth on the outer faces of the liner plates 20 are effective in engaging and firmly holding the rotary drill pipe

against downward movement. The liner plates are readily removable and interchangeable thereby permitting the ready removal of a plate that has become broken or unfit for service, and likewise the handles 16 may be readily removed and interchanged.

A device of our improved construction is comparatively simple, capable of being easily and cheaply produced, and provides efficient means for engaging and holding a rotary drill pipe in the bushing of a drill table.

It will be understood that minor changes in size, form and construction of the various parts of our improved rotary drill pipe slip may be made and substituted for those herein shown and described without departing from the spirit of our invention, the scope of which is set forth in the appended claims.

We claim as our invention:

1. A pipe slip comprising a set of segments adapted to approximately fit a pipe and tapered on their outer faces to fit a bushing, there being recesses upon the inner faces of the segments, said recesses being dovetailed at their upper and lower ends and open at their sides, segmental slip members sliding sideways into said recesses, and plates secured to the sides of the segments and engaging the sides of the slip members.

2. A pipe slip comprising a set of segments adapted to approximately fit a pipe and tapered on their outer faces to fit a bushing, there being a pair of recesses extending from the top of each slip and transverse bores through the slips and through the recesses, U-shaped handles having loops at their lower ends inserted into said recesses, and pins inserted through said bores and through the loops, said pins being removable to remove the handles.

In testimony whereof we have signed our names to this specification.

CHESTER C. HOSMER.
CARLETON H. WINES.