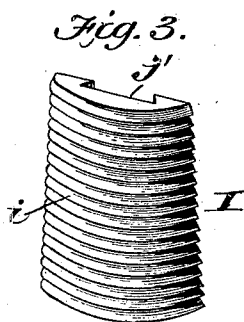
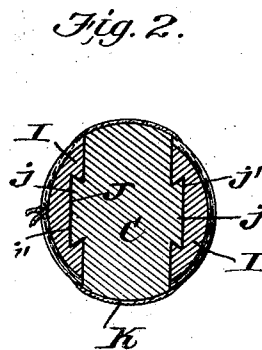
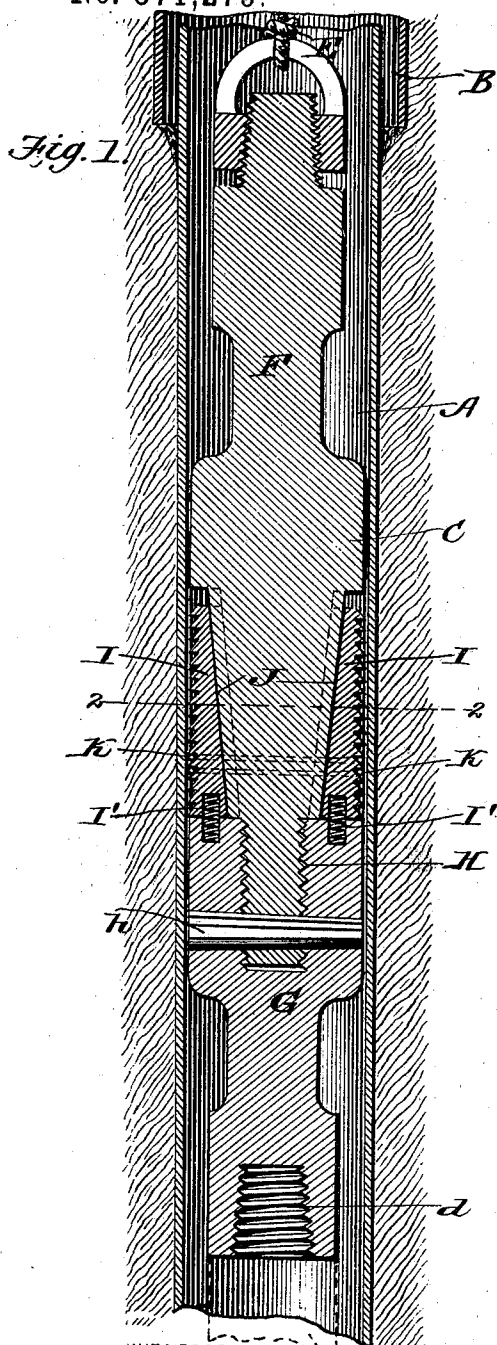


(No Model.)

G. L. McKAIN.
TOOL FISHING APPARATUS.

No. 571,279.

Patented Nov. 10, 1896.



WITNESSES:
M. D. Blondell.
P. B. Surpin

INVENTOR
G. L. McKain.
BY *Mumford & Co.*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE L. MCKAIN, OF WASHINGTON, PENNSYLVANIA

TOOL-FISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 571,279, dated November 10, 1896.

Application filed June 27, 1896. Serial No. 597,187. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. MCKAIN, of Washington, in the county of Washington and State of Pennsylvania, have invented a new and useful Improvement in Tool-Fishing Apparatus, of which the following is a specification.

My invention is an improvement in tool-fishing apparatus for oil and similar wells; and it consists in a tool-carrier provided with slips adapted to grip within the removable casing.

The invention consists, further, in the special construction of such carrier and in the novel constructions and combinations of parts, as will be hereinafter more fully described, and pointed out in the claims.

In the drawings, Figure 1 is a vertical longitudinal section of my improvement as in use. Fig. 2 is a cross-section of the device on dotted line 2 2 of Fig. 1, and Fig. 3 is a detail view of one of the slips.

The purpose of the apparatus is to remove well-tools that have been stuck or lost in oil wells.

In explaining the invention it may be well to state that in drilling some wells a thirteen-inch hole is started and drilled to a depth of, say, three hundred and fifty feet, and ten-inch casing inserted to such depth. The well is then drilled deeper—sometimes to a farther depth of six hundred feet—before another casing is put in. In some of the fields there is occasionally found a cave at a point from eight hundred to nine hundred feet from the surface. If this cave is bad and the tools are once stuck, there is no hope with the ordinary appliances of ever getting them out.

In carrying out my invention I put a string of eight-inch casing A into the well inside the three hundred feet of ten-inch casing B and lower the casing A down past the cave and to a point near the top of the tools that are stuck in the well. The carrier C is supplied with a fishing-tool D, which may be of any desired fashion and may be integral with the carrier C or separate therefrom and threaded thereto at *d*, as shown.

When hold is secured upon the tools in the well, the carrier is pulled up into the inner removable eight-inch casing A and is clamped thereto by the slips presently described. The

rope E may then be cut and the eight-inch casing drawn, bringing the carrier and tools with it. The purpose of this construction is to avoid the damaging effect of the cave by using the casing to pull the tools with.

In specifically describing the improved device, which for convenience of reference I term a "carrier," it may be said to comprise upper and lower sections F and G, jointed at H by a tenon and socket and held at such joint from turning by a key *h*, such sectional and jointed construction being preferred for convenience in applying and removing the slips I; but manifestly I do not desire to be limited in the broad features of my invention thereto.

The slips I, preferably two in number, are fitted on the carrier and are adapted to bind in certain adjustments within the casing A, being to such end serrated at *i* upon their outer faces, as shown.

In the construction shown the carrier is provided with longitudinal tapering seats J, diverging toward their upper ends and provided with dovetail ribs *j*, fitting in dovetail grooves *j'* in the slips I, the slips being movable longitudinally upon the seats J, so they may move upward to expand and grip within the casing A or down to play freely within said casing, as will be readily understood.

Springs I' bear beneath the slips I and tend to force them upward. When the carrier is being lowered into the casing, the slips are pressed downward and a string is tied around them to hold them down. When the tools are caught, the carrier is drawn upward into the casing A, when by a little jarring, aided by the springs I', the string will be broken and the slips allowed to ascend, expanding and binding within the eight-inch casing, as will be readily understood. The rope is then cut and the casing pulled, bringing the tools with it.

It should be understood that the purpose of my carrier is to hold the tools up in the casing while the latter is being pulled out of the well.

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

1. A tool-carrier for wells provided at its lower end with means for the connection of a

drill-rod grab or socket and provided with the tapering seats spreading toward their upper ends, and the slips held to and sliding along said seats substantially as shown and described.

2. A tool-carrier for wells provided with tapering seats and with slips sliding longitudinally along the same, springs bearing beneath the slips and a breakable cord or band encircling said carrier and adapted to hold the slips retracted, substantially as shown and described.

3. The combination in a tool substantially as described of the body having tapering seats, the slips movable longitudinally along said seats, registering sockets being provided in the ends of the slip and in the body and springs fitting in said sockets and arranged to actuate the slips longitudinally, substantially as shown and described.

4. The combination of the casing, the tool fitting therein and having at its lower end means for connecting the tool grab or socket

and having between its ends tapering seats, and slips movable longitudinally thereon and adapted to bind in the casing, whereby the latter may be lifted to withdraw the said tool and the parts attached thereto, substantially as shown and described.

5. The improved tool herein described, consisting of the carrier having upper and lower sections jointed together and held at such joint from turning, the lower section being provided at its lower end with means for connecting with a drill-rod grab or socket, and the upper section being provided with longitudinally-tapering seats, the slips held to and movable along said seats, the springs by which to actuate said slips and the breakable cord or band encircling said slips and adapted to hold the same in retracted position, substantially as shown and described.

GEORGE L. MCKAIN.

Witnesses:

GEO. C. HARDGROVE,
JNO. C. BANE.