UNITED STATES PATENT OFFICE.

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FISHING-TOOL FOR WELLS.

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To all whom it may concern:

Be it known that we, WARD J. SHELDON and ROLLAND J. HALSTEAD, citizens of the United States, residing at Electra in the county of Wichita, State of Texas, have invented certain new and useful Improvements in Fishing-Tools for Wells; and we 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.

This invention relates to improvements in well drilling appliances and more particularly to an article commonly known as a "fishing tool" or "drill rod grab", whereby broken drill ends or other foreign objects may be conveniently removed from the bottom of a well.

An object of the invention resides in the provision of a tool of this character, in which novel means are employed to insure positive action of the gripping portions of the device, said means being capable of gravity upon contact of said portions with the obstruction to be removed, and limited in movement with respect to such portions so as to be at all times in readiness to effectually operate and accomplish its purpose.

With the above and other objects of similar nature in view, the invention resides in the novel combination, construction, formation and arrangement of parts set forth in and falling within the appended claims.

In the drawings: Figure 1 is a fragmentary sectional view of a tool and well casing showing the invention in elevation as being lowered therein. Fig. 2 is a longitudinal sectional view through the device. Fig. 3 is a view similar to Fig. 2 with the parts in their operative position, and Fig. 4 is a transverse sectional view taken on the line A-B of Fig. 3.

Referring now more particularly to the drawings, the device comprises a shank 10 of steel or other desired material that is provided at one end with a tool joint 11 whereby it may be conveniently connected with the usual raising and lowering cable at present employed in well drilling apparatus. The other end of the shank 10 is recessed as indicated at 12 and has engaged in these recesses corresponding ends of a plurality of resilient grappling fingers 13. The fingers 13, which are secured to the shank by screws 14 or other suitable means, are bowed outwardly from their point of attachment and terminate each in a barbed head, said heads being formed with outwardly inclined faces 15 and inwardly disposed gripping edges 16.

Sidably engaged upon the shank 10 is a heavy cylindrical sleeve 17 and arranged within this sleeve are a plurality of spaced inwardly projecting stop lugs 18, stop collars 19 fixed to the shank, being engageable by said lugs to limit longitudinal movement of the sleeve with respect to the shank. Thus in employing the tool for the purpose of removing a broken drill or the like, the end 11 thereof is engaged with the cable end in the ordinary manner and the device then lowered in the casing to the well bottom. The winding drum for the cable is then rapidly reversed to alternately raise and lower the tool until the fingers have come into contact with the broken drill, at which time the weight of the tool and its rapidity of descent will cause said fingers to spread and grip the obstruction between the edges 16 thereof. It is obvious that as the tool moves downward in the casing, the sleeve 17 will be retained in its raised position, due to frictional engagement with the wall thereof, but will by force of gravity, drop suddenly to force and retain the fingers 13 in gripping position when the latter have engaged and grasped the object to be removed. The tool may then be readily withdrawn from the casing by rewinding the cable upon the drum and the drill quickly released by disengaging the sleeve 17 from the fingers in any preferred manner.

It will be noted that by providing the stop lugs 18 and collars 19, the sleeve 17 will be held in such position with respect to the shank as to be at all times in readiness to quickly operate and effect a positive gripping action of the fingers 13. It may further be added that the stop lugs 18 project a sufficient distance inwardly of the sleeve 17 to loosely engage the shank 10 and thereby serve to retain the upper end of said sleeve centered upon the shank.

What is claimed is:

1. A tool of the class described comprising a shank, resilient gripping members at the end of the shank adapted at one end for connection of operating means, a sleeve slidably engaged on the shank and operable by gravity to force and retain said fingers in gripping position, said sleeve being outwardly flared at its lower end to fric-
tionally engage the wall of a well casing and be held thereby out of operative position, and means to limit sliding movement of the sleeve with respect to the shank.

2. A tool of the class described, comprising a shank, resilient gripping members at one end of the shank, a sleeve slidably engaged on said shank and operable by gravity to force and retain said resilient members in gripping position, spaced collars fixed to said shank, and inwardly directed lugs arranged circumferentially of the upper end of the sleeve and loosely engaging the shank between the collars to limit longitudinal movement of the sleeve, the lower end of the sleeve being arranged to swing on said lugs laterally of the shank to frictionally engage the wall of a well casing and be held thereby out of operative position.

In testimony whereof, we affix our signatures in the presence of two witnesses.

WARD J. SHELDON.
ROLLAND J. HALSTEAD.

 Witnesses:
S. O. CHAPMAN,
LESLEY N. GILLIS.