Feb. 24, 1925. 1,527,412

F. J. HINDERLITER

KICK-OFF TOOL

Filed April ?, 1923

Fig. 1

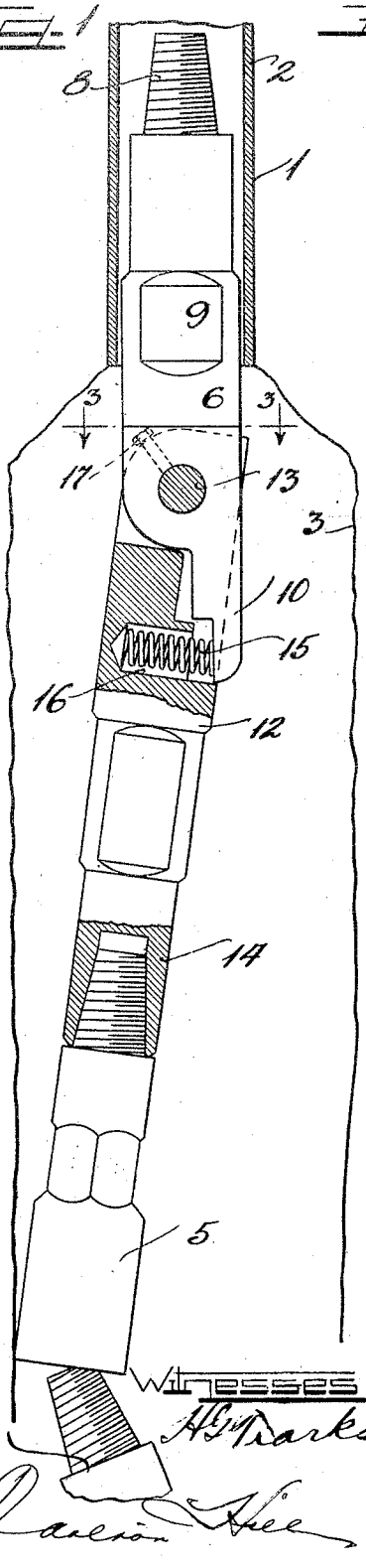


Fig. 2

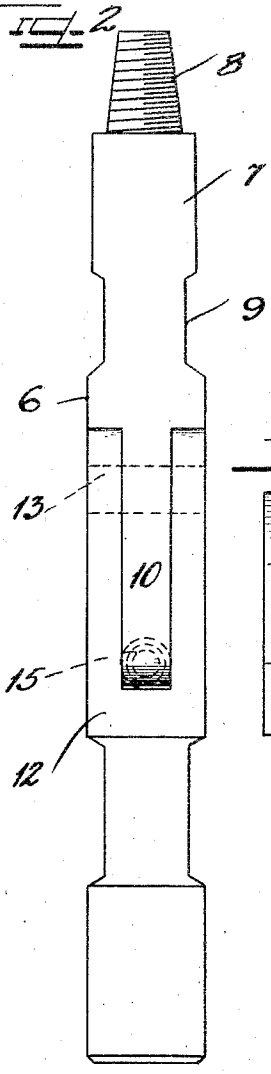
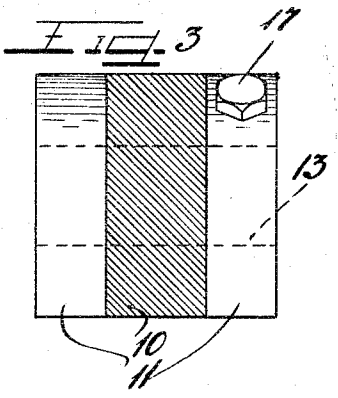


Fig. 3



Witnesses

Inventor

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by

Atty.

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UNITED STATES PATENT OFFICE.

FRANK J. HINDERLITER, OF TULSA, OKLAHOMA.

KICK-OFF TOOL.

Application filed April 2, 1923. Serial No. 629,326.

To all whom it may concern:

Be it known that I, FRANK J. HINDERLITER, a citizen of the United States, and a resident of the city of Tulsa, in the county of Tulsa and State of Oklahoma, have invented certain new and useful Improvements in a Kick-Off Tool; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates to recovery tools for oil well and similar deep drilling operations, wherein a string of drilling tools is frequently lost at the bottom of a hole. It particularly relates to tools adapted to work in a caved-in or enlarged portion of a hole below the casing when a lost tool lies over to one side of the enlarged hole outside of the bore of the casing, so that an ordinary recovery tool lowered through the casing cannot contact the head of the lost tools.

It is an object of this invention to provide a kick-off tool to be screwed onto the end of a string of jars or the like, and to have an ordinary recovering tool, such as one of the many well known and specialized forms of sockets, inserted in the kick-off tool to perform the actual work of gripping the top of the lost tools.

It is a further object of this invention to provide means for carrying a recovery tool outwardly from the limits of the casing bore to any predetermined extent in order to reach lost tools lying against the wall of a cave-in to one side of the bottom of the casing.

Other and further important objects of this invention will be apparent from the disclosures in the specification and accompanying drawings.

The invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

On the drawings: Fig. 1 is a sectional view of a drill hole with a kick-off tool partly in section and a friction socket therein in extended position.

Fig. 2 is a view of the kick-off tool alone taken at right angles to Fig. 1.

Fig. 3 is an enlarged section on the line 3—3 of Fig. 1.

As shown on the drawings: The numeral 1 refers to a representation of a drill hole, lined with casing 2 and having a cave-in or enlargement 3 below the bottom of the casing, in which the head of a lost tool 4 has tipped over outside the line of the casing bore, so that an ordinary recovering tool such as, for example, a friction socket 5, shown on the end of the device of this invention in Fig. 1, would be unable to engage with the lost tool if mounted in the usual manner on the end of a string of fishing jars.

The kick-off tool proper comprises a cylindrical body member 6 having suitable attaching means on its upper end for engagement with the string of fishing jars, the means as shown being the well known type of collar 7 and pin 8 as used in taper joints. Wrench flats 9 are provided on the body member, and below this flat the body is continued as a tongue 10 for engagement between yokes 11 on a lower member 12 pivoted thereto by a substantial pin 13 through the upper ends of the yokes.

The lower member has a taper box 14 corresponding with the collar and pin of the body member for the attachment of one of the many forms of specialized sockets according to the known condition of the top of the string of tools, bit, stem, tubing, or the like, which may have been lost in the hole.

A coil spring 15 is inserted in a recess 16 therefor in the lower member and presses against the tongue 10 to kick the lower member out of line with the casing bore when lowered free of the casing. A set screw 17 is inserted in one of the yokes 11 to limit the outward swing of the lower member by engaging against the body member. This screw is adjustable to limit the outward swing of the lower member carrying the recovery tool to any desired degree of angularity required by the extent of the enlargement of the hole below the casing.

The operation of this tool will be apparent from the foregoing, and requires only a brief résumé. Fig. 1 best shows the use of this tool in recovering a bit or the like which has been lost because the taper joint securing it to the string of jars has become unfastened. In such a case a pin socket or a friction socket is commonly used to engage the pin on the bit, and if the bit were in line with the casing bore the socket would be mounted directly on the end of a string of long stroke fishing jars and driven down onto the pin of the bit. When the bit lies over to one side of the casing bore in a cave-

in, the kick-off tool of this invention is inserted between the jars and the socket so that when the socket is lowered below the bottom of the casing the spring in the tool will kick out the lower member, allowing the socket to come over the head of the lost tool or the like and be driven down onto the head by the fishing jars in the usual manner.

It will be evident that two kick-off tools may be used, set up to kick in opposite directions, if it is desired to keep the socket substantially vertical while driving onto the head of the lost tools.

I am aware that numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. In a tool of the class described a body portion having suitable means for attachment to a string of jars, a downwardly extending tongue thereon adapted to form a positive alignment stop, a second member having suitable means for attachment to a recovering tool, yoke-like extensions on the upper end thereof adapted to engage either side of said tongue, a pin through said yoke and tongue whereby the second member is free to swing at an angle to said body member.

2. In a tool of the class described a body portion having suitable means for attachment to a string of jars, a downwardly extending tongue thereon adapted to form a positive alignment stop, a second member having suitable means for attachment to a recovering tool, yoke-like extensions on the upper end thereof adapted to engage either side of said tongue, a pin through said yoke and tongue whereby the second member is free to swing at an angle to said body member, and means for projecting said second member at an angle when lowered into an enlargement of the drill hole.

3. In a tool of the class described a body portion having suitable means for attachment to a string of jars, downwardly extending tongue thereon, a second member having suitable means for attachment to a recovering tool, yoke-like extensions on the upper end thereof adapted to engage either side of said tongue, a pin through said yoke and tongue whereby the second member is free to swing at an angle to said body member, and adjustable means limiting the swing of said second member relative to the body member.

4. In a tool of the class described a body portion having suitable means for attachment to a string of jars, downwardly extending tongue thereon, a second member having suitable means for attachment to a recovering tool, yoke-like extensions on the upper end thereof adapted to engage with either side of said tongue, a pin through said yoke and tongue whereby the second member is free to swing at an angle to said body member, and means for projecting said second member at an angle when lowered into an enlargement of the drill hole; in a tool of the class described a body portion having suitable means for attachment to a string of jars, downwardly extending tongue thereon, a second member having suitable means for attachment to a recovering tool, yoke-like extensions on the upper end thereof adapted to engage either side of said tongue, a pin through said yoke and tongue whereby the second member is free to swing at an angle to said body member, and adjustable means limiting the swing of said second member relative to the body member.

5. In a recovery tool for use in well drilling, a member adapted to be lowered into the hole, a second member hinged to said first mentioned member and means for swinging said second member outwardly in an enlargement of the hole, and adjustable means limiting the amount of swing of said second member.

6. In a recovery tool for use in well drilling, a member adapted to be lowered into the hole, a second member hinged to said first mentioned member and resilient projecting means for swinging said second member outwardly in an enlargement of the hole, and adjustable means limiting the amount of swing of said second member.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

FRANK J. HINDERLITER.

Witnesses:

HERMAN B. HENDERSHOT,

A. G. LOTT.