

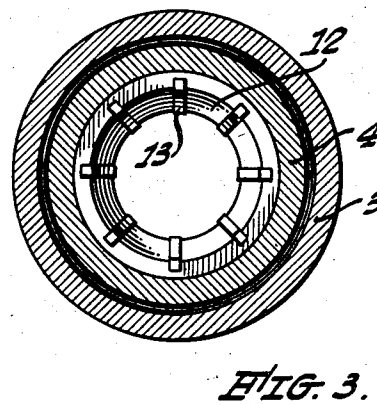
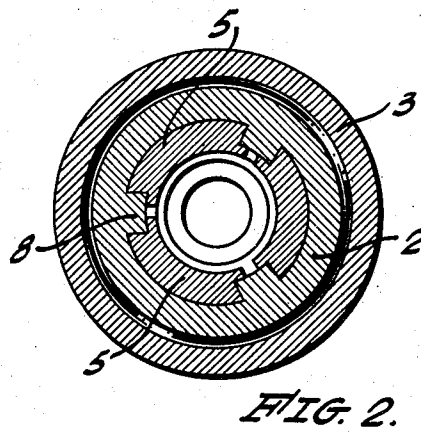
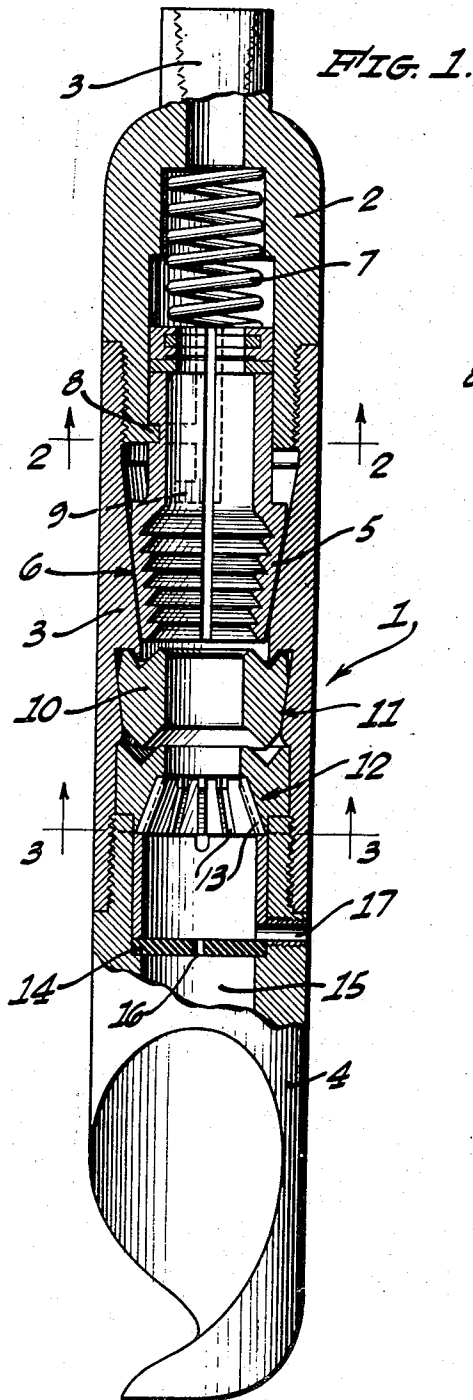
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OVERSHOT GRAB FISHING TOOL FOR OIL WELLS

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## UNITED STATES PATENT OFFICE

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OVERSHOT GRAB FISHING TOOL FOR OIL  
WELLS

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4 Claims. (Cl. 294—86)

1

This invention relates to a fishing tool used in the drilling of oil wells, and the primary purpose is to recover a lost piece or section of pipe commonly termed a fish, and by fishing tool is the overshot type, that is, the tool passes over the lost pipe section, and means is provided within the tool to securely grip this pipe so that it can be recovered.

An object of my invention is to provide a novel fishing tool of the character stated in which the circulating fluid is jetted outwardly from the tool, thus forcing the tool against one side of the bored hole to enable the bottom finger to engage the lost pipe.

Another object of my invention is to provide a novel means to pack off around the lost pipe after the pipe has entered the tool, thus forcing the circulating fluid downwardly through the lost pipe, tending to loosen this pipe so that it can be more readily recovered.

Another object of my invention is to provide a novel tool of the character stated which includes slips, a pack off ring, a mill, all of which operate automatically when the tool engages the lost section of pipe.

A feature of my invention is to provide a frangible disc in the lower end of the tool, said disc being broken by the lost pipe section as it enters the tool.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

Figure 1 is a side elevation of my fishing tool with parts broken away to show the inner construction thereof.

Figure 2 is a sectional view taken on line 2—2 of Figure 1.

Figure 3 is a sectional view taken on line 3—3 of Figure 1.

Referring more particularly to the drawing, my fishing tool 1, includes a top sub 2, which is provided with a threaded socket 3, to receive the drill pipe (not shown) upon which my tool is lowered into the well. A middle pipe section 3, is threaded onto the lower end of the sub 2, and a finger 4, is threaded onto the lower end of the pipe section 3. The finger 4, is formed in the shape of a helix or screw, substantially as shown, for the purpose of moving the lost pipe towards the center of the tool so that the pipe can enter the bore of the tool and be recovered in a manner to be subsequently described.

A plurality of slips 5, rest on a tapered seat 6

2

6, in the pipe section 3. A heavy coil spring 7, bears against the top of the slips 5, thus urging the slips downwardly against the seat 6. The slips 5, are held in raised and extended position by the lugs 8, which enter the J-slots 9, in the slips. Rotation of the top sub 2 will move the lugs 8 to a position to permit the spring 7, to press the slips downwardly into the seat 6, thus pressing the slips inwardly to grip the lost pipe section. The slips 5 are normally so positioned that they will engage and loosely grip the fish when the fish is pushed upwardly into these slips. This gripping of the slips on the fish is sufficient to enable the slips to be adjusted by rotation of the body of the tool. A rubber or plastic packing collar 10, rests on a tapered seat 11. Also in the pipe section 3, the packing ring is positioned below the slips 5, substantially as shown. When the pipe section passes upwardly through the packing ring 10, this ring will loosely grip the pipe section and a slight relative movement vertically between the tool and the pipe section will cause the packing ring 10, to slide downwardly on the seat 11, thus pressing the rubber packing ring inwardly tightly against the pipe. This seals the outside of the pipe, and thus the circulating fluid is directed downwardly within the fish. A milling ring 12, is mounted below the packing ring 10, and this mill is provided with hardened teeth 13, which will cut any outwardly projecting fragments on the top of the lost pipe. A frangible disc 14, is fixedly mounted in the bottom finger 4, and within the bore 15, of the finger. A hole 16, in the disc permits a certain amount of circulating fluid to pass downwardly through the finger 4, while the tool is being run into the well. A horizontal port 17, extends through the wall of the finger 4, above the disc 14, and the purpose of this port is to jet circulating fluid against the wall of the bored hole thus pressing the tool to one side of the bored hole and enabling the finger 4, to engage and pack off the lost pipe section, as the tool is rotated on the drill pipe.

Once the finger 4, engages the fish, it is drawn to the center of the tool and can pass upwardly through the bore 15, breaking the disc 14, as it passes upwardly. Any rough edges on the top of the fish will be reamed off by the mill 12, after which the pipe passes up through the packing 10, and is engaged by the slips 5, and an upward pull on the tool will then move the lost pipe out of the well.

Having described my invention, I claim:

1. An overshot grab fishing tool for oil wells

3

comprising a tubular body, a seat in said body, slips on said seat, spring means pressing the slips downwardly in the seat, a yieldable tubular packing, and a seat in said body on which said packing rests, a frangible disc mounted in said body, and extending transversely thereof, said disc having a hole extending therethrough and said body having a jet port extending through the wall thereof, said jet port being positioned above said disc.

2. An overshot grab fishing tool for oil wells comprising a tubular body, a seat in said body, slips on said seat, spring means pressing the slips downwardly in the seat, a yieldable tubular packing, and a tapered seat in said body on which said packing rests, a frangible disc mounted in said body, and extending transversely thereof, said disc having a hole extending therethrough, and said body having a jet port extending through the wall thereof, said jet port being positioned above said disc.

3. An overshot grab fishing tool for oil wells comprising a tubular body, a seat in said body, slips on said seat, spring means pressing the slips downwardly in the seat, a yieldable tubular packing, and a seat in said body on which said packing rests, a milling ring mounted in said body below said packing, a frangible disc mounted in said body and extending transversely thereof, said disc having a hole extending therethrough and said body having a jet port extending through

4

the wall thereof, said jet port being positioned above said disc.

4. An overshot grab fishing tool for oil wells comprising a tubular body, a tapered seat in said body, slips mounted on said seat, a coil spring engaging the slips and pressing the same downwardly in the seat, a yieldable tubular packing, a tapered seat in said body on which said packing rests, said packing being movable vertically on its seat, a milling ring fixedly mounted in the body below said packing, and a spiral finger on the lower end of said body a frangible disc mounted in said body, and extending transversely thereof, said disc having a hole extending therethrough and said body having a jet port extending through the wall thereof, said jet port being positioned above said disc.

CLIFFORD M. HOWARD.

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