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W. S. JONES ET AL
OVERSHOT FISHING TOOL

2,232,949

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Fig. 1.

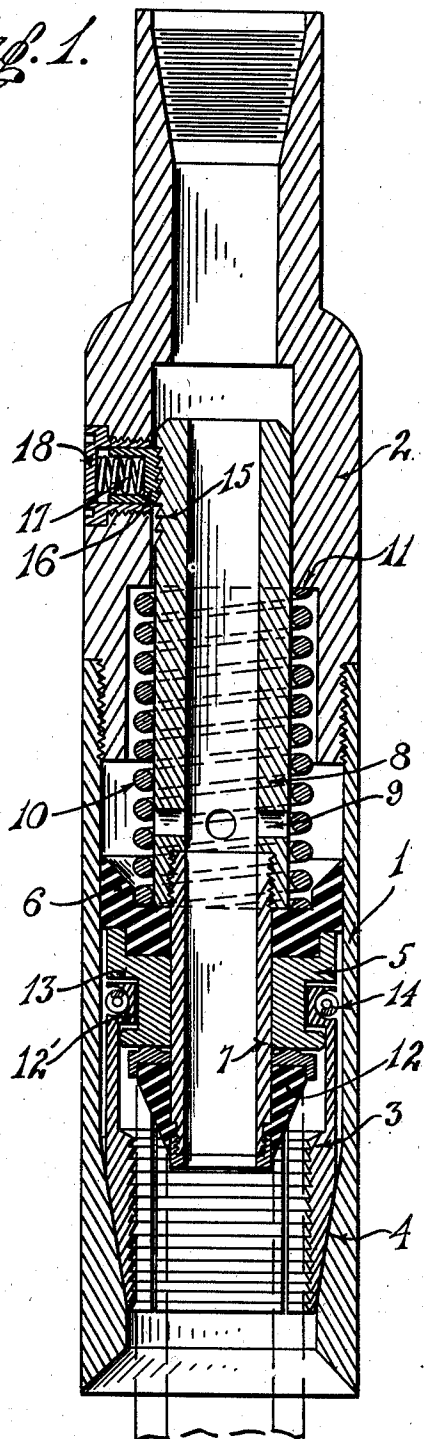


Fig. 2.

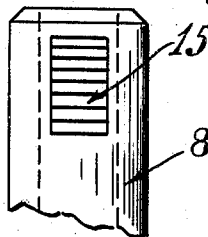
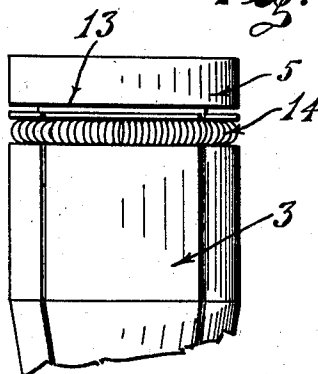


Fig. 3.



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OVERSHOT FISHING TOOL

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Application August 29, 1938, Serial No. 227,335

1 Claim. (Cl. 294—102)

This invention relates to an improved overshot fishing tool, by means of which a broken fragment of pipe, tubing or the like, can be removed from a well, and is an improvement on Patent No. 2,110,602, issued March 8, 1938.

An object of our invention is to provide a novel overshot fishing tool, including a novel means of controlling the pipe or tubing engaging slips.

Another object is to provide a novel overshot fishing tool of the character stated, in which the slip controlling means can be engaged or released by the operator at the surface of the well.

Still another object of our invention is to provide a novel overshot fishing tool of the character stated, including a novel means of supporting the engaging slips in the tool.

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

In the drawing:

Figure 1 is a longitudinal sectional view of our novel overshot fishing tool.

Figure 2 is a fragmentary side elevation of the control sleeve.

Figure 3 is a fragmentary side elevation of the slips and the collar on which they are mounted.

Referring more particularly to the drawing, the numeral 1 indicates a tubular housing, which encloses the grappling means to be subsequently described. A head 2 is attached to the upper end of the housing, preferably by threading the head into or onto the housing. The drill pipe (not shown) screws into or onto the head, and the tool is operated and lowered into the well on the drill pipe, which procedure is usual and well known. A plurality of slips 3 are mounted in the housing 1, and these slips engage a tapered seat 4 in the lower end of the housing, whereby these slips are forced inwardly to engage the lost or broken pipe, tubing or the like. While the lost pipe or tubing is being recovered, it is necessary to continue the circulation of drilling mud in the well, and, for this purpose, we provide packing to engage the housing 1 in the upper edge of the pipe or tubing, so that the drilling mud is forced into the pipe or tubing. A collar 5 is mounted in the housing 1, and this collar supports an annular packing ring 6. The periphery of this packing ring engages the wall of the housing 1, as shown in the Figure 1. The packing is forced outwardly against the wall of the housing by the pressure of the drilling mud in the housing, as will be subsequently described.

A tube 7 extends through the packing 6, and

the collar 5. A control sleeve 8 screws onto the tube 7, and bears against the packing 6, thus holding the packing in position on the collar, and also holding the tube 7 against downward displacement. The sleeve 8 is provided with a plurality of holes, 9, through which circulating mud passes to exert pressure on the top of the packing 6 to force this packing against the wall of the housing, as previously described.

A coil spring 10 bears against the top of the packing 6 and against a shoulder 11 in the head 2, and this spring tends to force the packing 6 and the tube 7 downwardly, and also forces the slips 3 downwardly onto the seat 4. A second packing ring 12 is mounted on the lower end of the tube 7, and bears against the bottom of the collar 5. The packing 12 rests against the upper edge of the lost pipe or tubing, thereby packing off this pipe, so that the drilling mud is forced downwardly through the tube 7 and directly into the pipe or tubing fragment.

Each of the slips 3 is provided with an inwardly extending lug 12' at the upper end thereof. These lugs fit into an annular groove 13 in the collar 5. A coil spring 14, or similar compressible retainer, encircles all of the slips 3, as shown in Figure 3, thereby holding these slips in the groove 13. With this means of mounting the slips, a certain amount of transverse movement is permitted, so that the slips can swing inwardly and outwardly so as to engage the seat 4, for the purpose of engaging or disengaging the lost pipe or tubing.

On the upper end of the sleeve 8, we provide a toothed serrated section 15, which is engaged by a spring pressed dog 16. The dog 16 is constantly urged inwardly against the sleeve by means of the spring 17. The spring and dog are assembled in a hollow cup 18, which screws into the side of the head 2, substantially as shown in Figure 1. When the dog 16 engages the teeth 15, the slip and packing assembly is held in either raised or lowered position. By rotating the head 2 relative to the sleeve 8, the dog 16 is moved onto a smooth portion of the sleeve, thus releasing the sleeve slips and packer assembly for longitudinal movement in the tool.

When going into the hole, dog 16 engages the teeth 15 to hold the sleeve 8 and the slips 3, in raised position to permit these slips to move over the lost pipe or tubing. When the tool is in grappling position with the packing 12 raising against the top of the lost pipe or tubing, the head 2 is rotated until the dog 16 moves off of the teeth 15. The spring 10 will then press the slips down-

wardly to engage the seat 4, thus driving these slips inwardly against the pipe and tightly gripping the same. By again rotating the head 2 until the dog 16 again engages the teeth 15, the slips will be held in lowered position, gripping the pipe while the tool and its burden of pipe is raised to the surface.

Having described our invention, we claim:

10 a tapered seat in the housing, a plurality of slips adapted to engage the seat, a collar, a tube extending through the collar, a packing bearing against the upper face of the collar and surround-

ing the tube, a second packing mounted on the lower end of the tube and surrounding the same, and a sleeve threaded onto the tube and rising above said tube, said sleeve bearing against the first-named packing, whereby said packing is held in position, said housing having a vertical bore extending therethrough, said sleeve fitting into the bore and being slidable therein, said sleeve having ports therein adjacent the first-named packing, and a coil spring surrounding said sleeve and bearing against the first-named packing.

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