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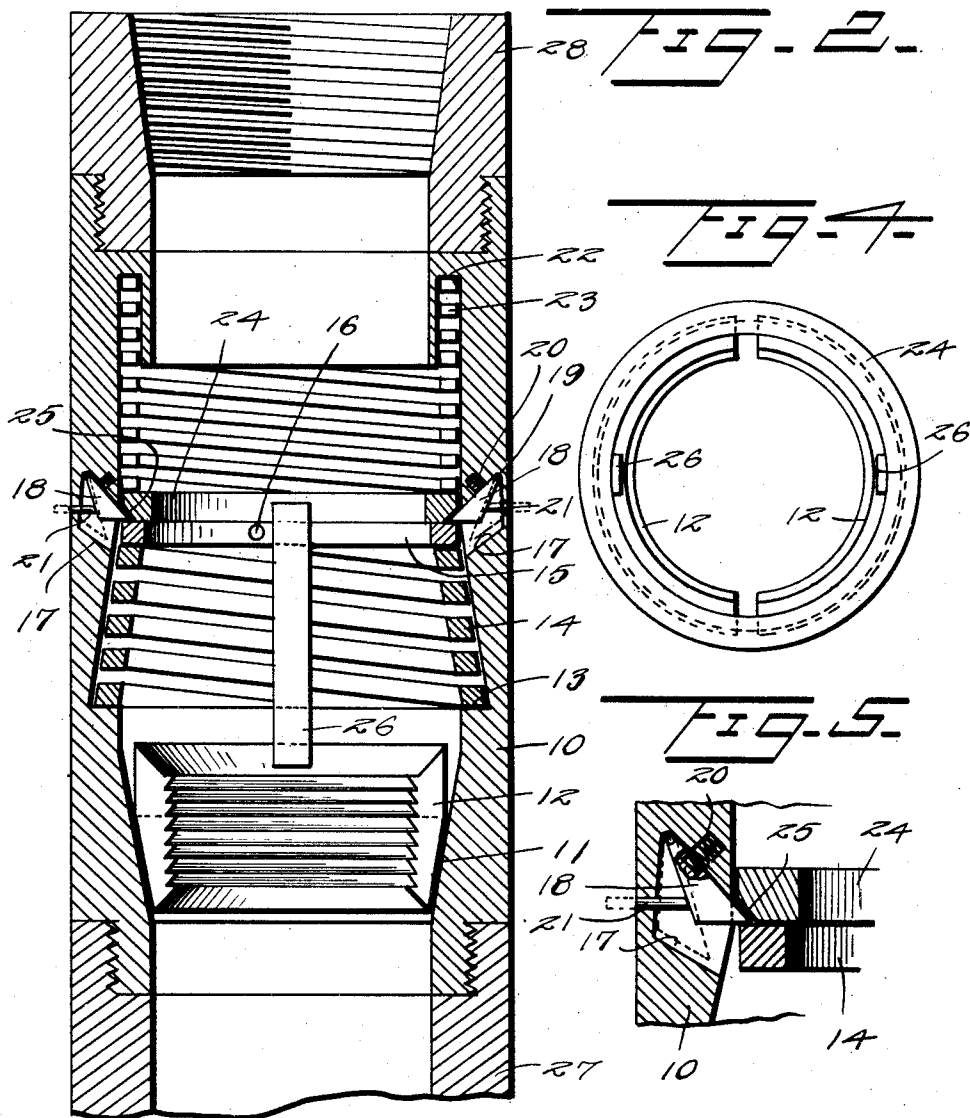
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OVERSHOT

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OVERSHOT.

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This invention relates to overshots and more particularly to a device of this character which is releasable in event a test pull upon the fish reveals the fact that it is so firmly held within the hole that removal thereof as an entirety is impossible.

An important object of the invention is to provide a device of this character which is readily set and which may be comparatively cheaply and at the same time durably constructed.

A further object of the invention is to produce a device of this character having a spring, by means of which the slips of the overshoot are released at any time after a pull has been taken on the fish, this spring being held during insertion of the fishing tool and the arrangement thereof upon the fish in inoperative position by latches which are released by the initial pull exerted upon the fish.

These and other objects I attain by the construction shown in the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a vertical sectional view through a drilling tool constructed in accordance with my invention;

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is a section on the line 3—3 of Figure 1;

Figure 4 is a plan view of the slip assembly and releasing ring;

Figure 5 is an enlarged detail sectional view illustrating the position of the releasing and operating rings when the fishing tool is ready for insertion into the well.

Referring now more particularly to the drawings, the numeral 10 generally designates a shell provided interiorly with a tapered seat 11 for coaction with slips 12 which are intended to grip the pipe. Above the slip seat and the upper ends of these slips, a ledge 13 is formed upon the interior of the shell upon which is seated the lower end of a powerful spring 14. The upper end of this spring abuts a setting ring 15 having openings 16 therein for engagement with a setting tool, whereby the ring may be forced downwardly, for a purpose presently to appear.

Formed in the side walls of the tool are recesses 17 within which are arranged triangular latch elements 18, the lower face

of which is horizontally disposed. These latches are pivoted to pins 19 passing there-through at the apex of the two remaining sides and springs 20 constantly urge these latches to rotate about the pivots thereof to positions where they are concealed within the recesses 17. Slidably directed through the outer wall of each recess is a pin 21, whereby the latches may be moved inwardly against the action of the springs 20, so that their inner apices project into the bore of the shell.

The recesses 17 are spaced above the ledge 13, and above these recesses the shell is formed with a downwardly facing shoulder 22 against which is seated the upper end of a light spring 23, the lower end of which abuts a ring 24. This ring 24 has a downwardly and inwardly inclining outer face 25 which, when the ring is urged downwardly with sufficient force, will engage the inwardly projecting ends of the latches 18, causing the same to swing about their pivots against the resistance of the pressure exerted there-against by the spring-pressed setting ring 15, so that the setting ring is released to move upwardly. The necessary pressure to move the ring 24, which may be termed a releasing ring, downwardly a sufficient distance to release the latches 18 is provided by connecting this ring by links 26 with the upper ends of the slips 12. The lower end of the shell is provided with a suitable guide 27 and the upper end thereof is adapted for engagement with a pipe string, as indicated at 28.

In the use of the device, the setting ring is moved downwardly against the action of the spring 14 and the latches 18 moved inwardly, so that they will prevent return passage of the setting ring, after which the setting ring is released. At this time, the spring 23 may only urge the slips 12 downwardly a sufficient distance to enable them to take a grip on the pipe, the latches 18 limiting downward movement of the ring 24 at a point above the lower limit of the movement of the slips. The fishing tool is now connected with the pipe string and lowered into the well and positioned over the head of the fish which is to be withdrawn. The slips are free to move upwardly to permit the fish to enter therebetween and when the fish has entered between them, will be forced downwardly by the spring 23, so that they take grip thereon. A pull is now exerted

on the fish and in event the fish can be removed, it is hoisted from the well. In event the fish is so firmly held that it cannot be removed, all that is necessary to disengage the fishing tool therefrom is to lower the fishing tool sufficiently to release the grip which has been taken on the fish.

It has been pointed out that when the fish is initially gripped, the slips 12 settling when a pull is exerted thereon will draw with them the ring 24, so that this ring forces the latches 18 to their releasing position. Since the latches are held in their releasing position by springs 20 and may not return, it follows that at any time that the pull exercised by the weight of the fish is released, the slips will be released, since they are forced upwardly by the engagement of the setting ring, acting under the influence of the heavy spring 14 against the releasing ring 24. This structure not only provides a convenient means for releasing the slips from the fish when it is found that it cannot be drawn from the well, but likewise provides a convenient means for disengaging the fishing tool from a fish which has been drawn to the surface, as it is simply necessary to employ the usual casing head clamps (not disclosed) to support the fish and release the strain on the fishing tool.

Since the construction hereinbefore set forth is capable of a certain range of change and modification without materially departing from the spirit of the invention, I do not limit myself to such specific structure except as hereinafter claimed.

I claim:—

1. In an overshot, a shell embodying the usual slip seat, slips coacting therewith, a ring connected with the slips, a spring constantly urging said ring downwardly, a second spring seated at its lower end upon

a shoulder formed in the shell and its upper end having a ring engaging the first named ring, the last named spring being of greater strength than the first named spring whereby said rings normally tend to move upwardly to a position wherein the slips may spread and release a gripped article and latches carried by the shell and engaging the last named ring to hold the spring pressed in the position permitting downward movement of the slips to a point where they are disposed slightly above the lower limit of their movement, the first named ring upon downward movement of the slips shifting said latches to inoperative position to release the last named ring, the first named ring having a beveled outer face camming the latches to inoperative position during downward movement of the first named ring.

2. In an overshot, a shell embodying the usual slip seat, slips coacting therewith, a member connected with the slips, a spring constantly urging said member downwardly, a second spring of greater strength than the first named spring operatively engaging the member whereby said member normally tends to move upwardly to a position wherein the slips may spread and release the gripped article, latches carried by the shell and operatively engaging the upper end of the last named spring to hold the spring compressed in the position permitting downward movement of the slips to a point where they are disposed slightly above the lower limit of their movement, said member having a beveled outer face camming the latches to inoperative position when said slips move downwardly from said point.

In testimony whereof I hereunto affix my signature.

DOUGLAS H. ROWLAND.