

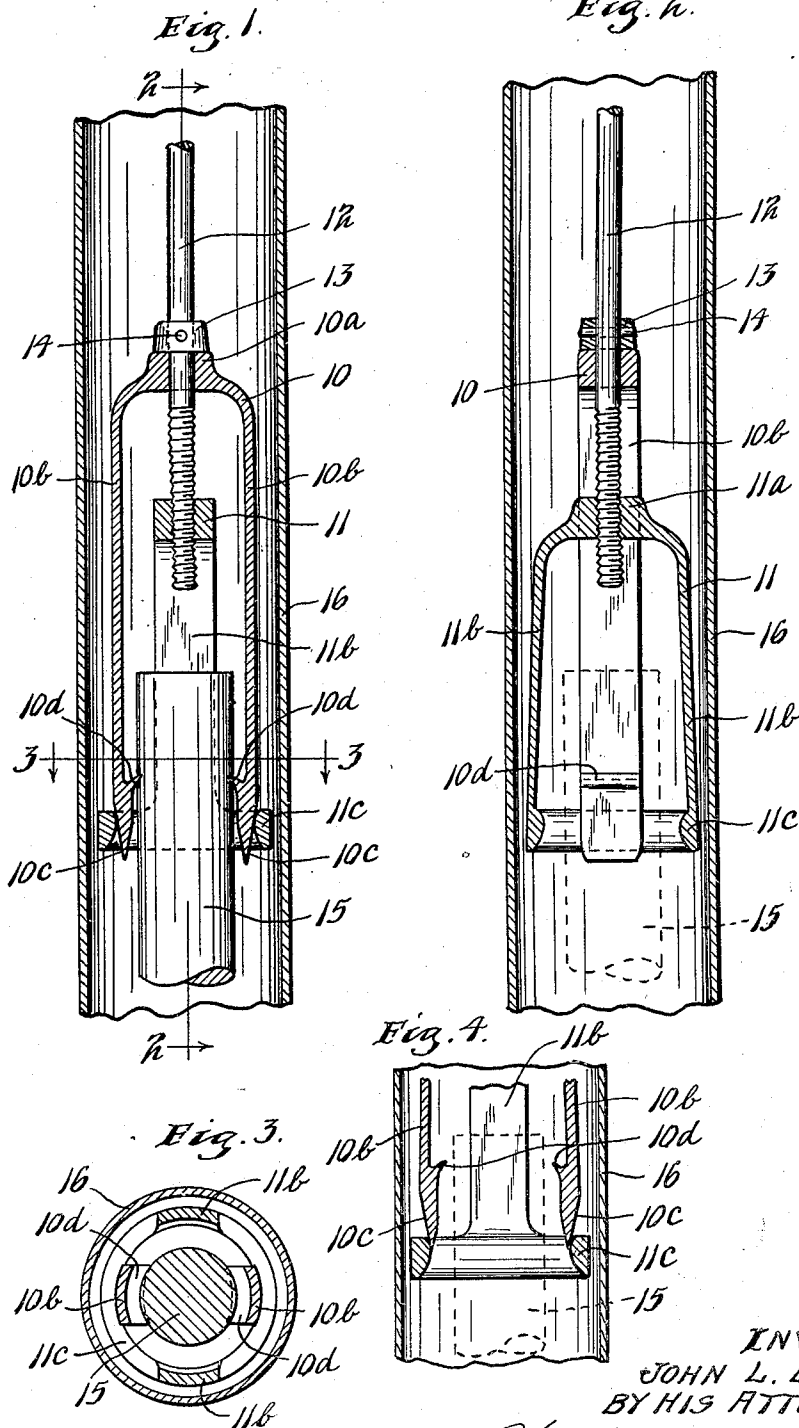
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WELL ROD GRIPPER

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WELL ROD GRIPPER

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This invention relates to a gripping device adapted to grip a well rod or other rod which may be located some distance down in a casing or pipe. Such a device is sometimes called a fishing tool or drill rod grab and is often used where wells are being drilled, to recover broken rods and drills.

It is an object of this invention to provide a simple and efficient device by means of which the well rod or other article can be easily and quickly engaged and securely gripped so as to be removed.

It is a further object of the invention to provide a simple and efficient device for gripping a rod or similar article having gripping jaws with simple and easily operated means for causing the same to grip the rod or other article.

It is more specifically an object of the invention to provide a gripping device comprising a member having a pair of spaced gripping jaws resiliently movable away from each other, together with a sleeve adapted to be moved relatively to said jaws to compress the same and move them together to grip an article, relative movement between the jaws and said last mentioned member being caused by a threaded rod.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings, in which like reference characters refer to similar parts throughout the several views, and in which:—

Fig. 1 is a central vertical section through the device and a casing in which it may be used;

Fig. 2 is a vertical section taken on line 2—2 of Fig. 1 as indicated by the arrows;

Fig. 3 is a horizontal section taken on line 3—3 of Fig. 1 as indicated by the arrows, and

Fig. 4 is a partial view similar to Fig. 1 showing the jaws of the device in separated position.

Referring to the drawings, a device is shown comprising a member 10 of general inverted U-shape having a hub 10a at its upper portion from which arms 10b diverge and extend downwardly in substantially parallel

relation, said arms curving toward each other and merging into said hub at their upper ends. Arms 10b at their lower ends have convexly curved outer surfaces 10c and also have convexly curved inner surfaces so that the ends are formed substantially into an edge. Said arms have projecting inwardly from their inner sides jaws 10d which are sharply edged. As shown in Fig. 3, the arms 10b at their lower jaw-carrying portions have their outer and inner surfaces extending substantially in concentric relation about the center of hub 10a. The inner sides of jaws 10d are also substantially concentric with the center of hub 10a and are thus of concave form. Another member 11 is provided, the same also being of inverted U-shape and having a top hub 11a from which diverge and extend downwardly a pair of arms 11b, said arms being secured at their lower ends to a ring 11c. The inner side of ring 11c is convexly curved as shown in Figs. 1 and 2. Hub 11a is threaded to receive the threaded end of a rod 12 which also extends through a bore in hub 10a, said rod having secured thereto a collar 13, said collar being secured by a pin 14 passing therethrough and through rod 12. Collar 13 abuts the upper end of hub 10a.

In operation, if a well rod, drill or other article, such as illustrated as 15 is to be gripped, rod 12 will be turned to lower member 11 and ring 11c relatively to the member 10 and the arms 10b. When ring 11c is thus lowered, arms 10b will spring apart due to the convex surfaces 10c. The tool carried on rod 12 can then be lowered into the casing such as shown as 16 in Figs. 1 and 2 or into the hole where the rod to be gripped is located. The ends of arms 10b having the sharp lower edges are placed over the end of the rod 15 to be gripped. The jaws 10d at this time pass at either side of said rod. When the device has been thus positioned about the end of the rod 15, the operator will turn rod 12 elevating member 11 relatively to member 10. As the ring 11c moves up along the outer sides of arms 10b and along the surfaces 10c, it will act as a cam against surfaces 10c and move arms 10b toward each other thus causing the jaws 10d to firmly grip the rod 15. The jaws

will be held in this gripping position by ring 11c and the rod 15 can be lifted by raising rod 12. When the rod 15 has been raised out of the casing 16 the jaws can be released by turning rod 12 in the opposite direction. As stated, when ring 11c is moved downwardly or relatively to member 12 the jaws will release due to the resiliency of arms 10b.

From the above description it is seen that applicant has provided a very simple and efficient gripping device particularly adapted for gripping well rods, drills or other members which are some distance down in a casing or hole. The device comprises very few parts and can be inexpensively made. At the same time the parts are quite rugged and can thus be made quite durable. The device is easily and quickly operated and is positive in action. The same has been amply demonstrated in actual practice and found to be very successful and efficient.

It will, of course, be understood that various changes may be made in the form, details, proportions and arrangement of the parts without departing from the scope of applicant's invention, which, generally stated, consists in a device capable of carrying out the objects above set forth, in the novel parts and combinations of parts disclosed and defined in the appended claims.

What is claimed is:—

1. A gripping tool having in combination, a substantially inverted U-shaped member having depending arms with inwardly directed jaws adjacent their lower ends, the outer surfaces of said arms adjacent their lower ends being convex, a second inverted substantially U-shaped member extending transversely of said first mentioned inverted U-shaped member and carrying a ring at its lower end, said ring having inner surfaces adapted to engage said convex surfaces on said arms and move the same together and means extending through the top of said first mentioned member and threaded into the top of said second mentioned member for causing relative movement of said members to move said ring longitudinally of said arms.

2. A gripping tool having in combination a member provided with a pair of spaced depending arms, said arms having inwardly directed jaws adjacent their lower ends, the outer surfaces of said arms adjacent said lower ends being convex, a second depending member straddling first said mentioned member and carrying a ring at its lower end, said ring surrounding said arms and being adapted to engage said convex surfaces to move said arms together and means extending through said first mentioned member and threaded into the top of said second mentioned member for causing relative longitudinal movement of said members.

In testimony whereof I affix my signature.

JOHN L. BARDEN.