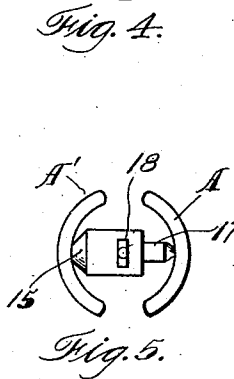
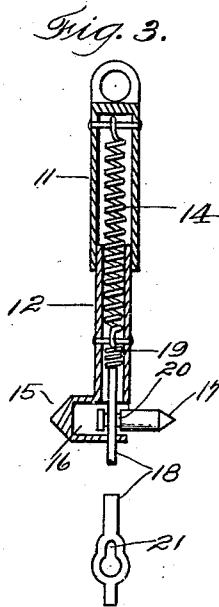
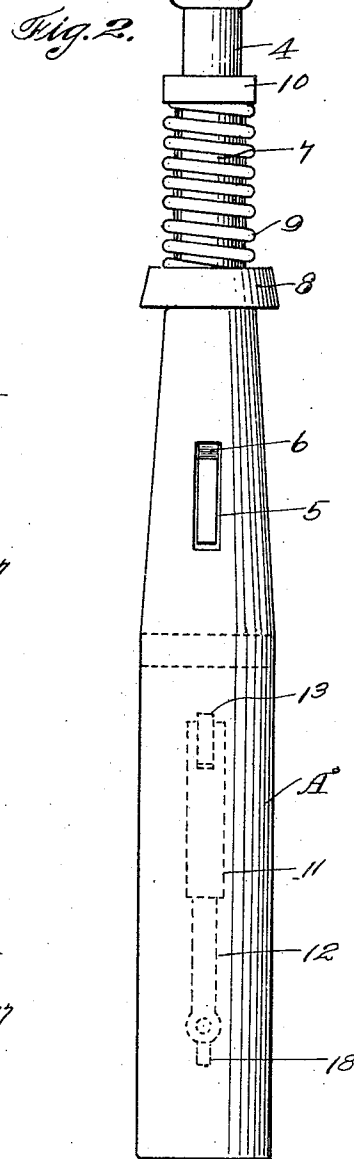
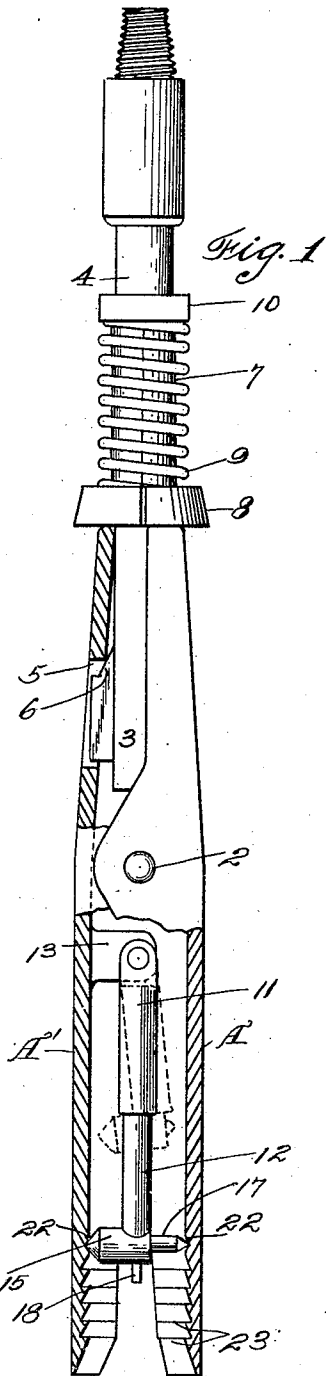


W. S. BOGGS.
FISHING TOOL.

APPLICATION FILED MAY 22, 1909.

944,768.

Patented Dec. 28, 1909.



Witnesses.

F. E. Maynard.
R. S. Burris,

Inventor,
William S. Boggs;
By Geo. H. Strong,
his Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM S. BOGGS, OF BERKELEY, CALIFORNIA, ASSIGNOR TO IMPERIAL OIL COMPANY, OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

FISHING-TOOL.

944,768.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed May 22, 1909. Serial No. 497,737.

To all whom it may concern:

Be it known that I, WILLIAM S. BOGGS, citizen of the United States, residing at Berkeley, in the county of Alameda and State of California, have invented new and useful Improvements in Fishing-Tools, of which the following is a specification.

This invention relates to tools for use in oil and other bored wells, and pertains especially to a device for recovering lost tools or articles in the well.

It frequently happens that in boring an oil-well, tools are lost either through breakage or becoming detached from the operating means on the surface, and it is often difficult, particularly in deep wells, to recover these parts, and sometimes necessitates the abandonment of the well, where the parts cannot be recovered. The difficulty is increased where the part lost is of irregular form, such as under-reamer jaws, etc.

The object of the present invention is to provide a simple, practical fishing tool, especially designed to meet certain conditions incident to the removal of irregularly formed pieces, such as under-reamer jaws, etc., lost in oil or other wells, and to so construct this tool that it may be set and made to remain in a fixed position to be used as a spud in straightening up and loosening the lost piece; the tool being adapted, after the lost piece has entered same a sufficient distance, to disengage a trip, which will allow the tool to grip the article and cause its withdrawal when the tool is pulled up out of the well.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the tool partly in section. Fig. 2 is a rear view. Fig. 3 is a sectional detail of the trip. Fig. 4 is a plan of the trigger plate. Fig. 5 is a plan of the lower end of the tool.

In the embodiment of the invention I employ two jaw members A—A', each of which is segmental in cross-section, the two being pivoted together about centrally, at 2. These jaws are loosely suspended from a cross-head member 3 carried by a mandrel 4 which

is connected to the line by which the tool is operated in the well. The lower end of the mandrel which carries the cross-head 3 passes down into the space between the upper ends of the jaws, and the latter are oppositely slotted, as shown at 5, to accommodate the cross-head, the jaws being supported on and carried by the same. The upper edges of the cross-head are beveled where they join on to the mandrel, as shown at 6, to form wedge members which coact with the upper walls of the slots 5 to close the lower gripping end of the jaws A—A' when the mandrel is lifted relative to the jaws; the length of the slot 5 being sufficient to permit the jaws to open when the cross-head is in contact with the lower walls of the slots 5.

7 is a split sleeve surrounding the mandrel above the upper ends of the jaws, and carrying a split collar 8 or flange cap which overhangs the upper ends of the jaws and prevents the fouling of the tool, by excluding dirt from the inside of the jaws. A spring 9 surrounds the sleeve 7 and bears against the collar 8 at one end and against a fixed clamp collar 10 on the mandrel, so as to tend always to lift the mandrel and normally cause the wedges 6 to close the jaws.

To prevent the jaws closing, and allow the tool to engage the lost article which is to be recovered, suitable means are provided to maintain the jaws open against the action of the spring 9. As here shown, I employ an internal trip mechanism which is only operated by the insertion of some article into the jaws from below. This trip is shown in detail in Fig. 3, and includes a pair of yieldingly connected telescoping tubes 11—12; the upper end of the tube 11 being shaped into an eye and suspended from a boss projection 13 on the inside of the jaw member A'. The member 12 is yieldingly connected within the female member 11 by a spring 14, so that normally the action is for the member 12 to be drawn up inside of the member 11. The lower end of the male member 12 is fashioned to provide a radial projection 15 which incloses a pocket 16 in line with the pin 17 which is adapted to coact with a trigger plate 18 to hold the jaws open. The trigger plate 18 is suspended from with-

in the tube 12 by a spring 19, and its normal tendency is to draw up into the tube 12 and release the shoulder formed by the reduced end 20 on pin 17 from the correspondingly reduced portion of the groove 21 in the trigger plate. The reduced part 20 of pin 17 can only engage in the reduced portion of the slot 21 when the pin is pulled outward and the trigger pulled down so that it has an end projecting below the containing parts of the trip. When thus in set position, and the spring 14 expanded, the outer end of the pin 17 and the boss 15 may engage in suitable notches 22 formed in the opposite sides of the jaws A—A', thereby holding the jaws apart in fixed position.

In operation, the trigger mechanism is set in the manner just described, so as to hold the jaws open, and the tool lowered into the well until the lost piece is straightened up and is made to enter the bottom of the fishing tool a sufficient distance to come in contact with and press against the trigger 18, whereupon the latter causes the trip mechanism to collapse and to be drawn up into the dotted line position shown in Fig. 1. This collapse of the trip mechanism allows the spring 9 to expand, and by reason of the reaction of the collar 8 and wedges 6 the jaws are closed on the article to be recovered. Pulling the tools out of the well still further compresses the jaws on the lost piece.

In order to enhance the grip of the jaws on the article to be recovered, the jaws may be serrated at their lower edges on the inside, as shown at 23.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. A fishing tool comprising a cross-head, a pair of jaw members loosely suspended from said cross-head, means coacting with the cross-head normally to close the jaws, and means releasable by the article to be recovered to maintain the jaws open, said means including a pair of yieldingly connected extendible members suspended from a point between said jaw members.

2. In a fishing tool, the combination of a pair of tubular jaws pivoted between their ends, means for loosely suspending them from their upper ends, and trigger mechanism adjacent to the lower ends for maintaining them open, said mechanism including a pair of yieldingly connected extendible members pivotally suspended between the inner surfaces of the jaws.

3. A fishing tool comprising a pair of tubular jaws pivoted between their ends, with the upper ends slotted, a mandrel having wedge members engaging the slots, and from which mandrel the jaws are suspended, trigger mechanism carried by the opposite ends of the jaws to hold the latter open, said

mechanism including a pair of vertically suspended extendible sliding members located between the jaws and means carried by the mandrel and coacting with said wedges to close the jaws when the trigger mechanism is tripped.

4. A fishing tool comprising a pair of tubular jaws pivoted between their ends, with the upper ends slotted, a mandrel having wedge members engaging the slots, and from which mandrel the jaws are suspended, trigger mechanism carried by the opposite ends of the jaws to hold the latter open, and means carried by the mandrel and coacting with said wedges to close the jaws when the trigger mechanism is tripped, said closing means on the mandrel provided with a protective cap or hood to prevent fouling of the tool.

5. In a fishing tool, the combination of a pair of coacting jaws, means for suspending them, means operative normally to close them, and means for holding them open in opposition to said closing means, said means for holding the jaws open including a pivoted trip mechanism within the jaws, said trip mechanism comprising a pair of yieldingly connected extendible members suspended from a point between the jaws and provided with releasable means acting on the inside of the jaws to expand them.

6. In a fishing tool, the combination of a pair of coacting jaws, means for suspending them, means operative normally to close them, and means for holding them open in opposition to said closing means, said means for holding the jaws open including a pivoted trip mechanism within the jaws, said trip mechanism including a pair of spring connected telescoping members suspended from a point between the jaws, within a downwardly projecting trigger plate, and releasable means coacting with the trigger plate to brace the jaws apart.

7. In a fishing tool, the combination with a pair of gripping jaws, means for suspending them, and means for closing them, of means for holding them open, said last-named means including a trigger mechanism pivoted within the jaws and comprising a pair of yieldingly connected extendible sliding members, the lower member having a trigger, and means engaging the inside of the jaws and coacting with the trigger to hold the latter in set position and maintain the jaws open.

8. In a fishing tool, the combination of a cross-head, a pair of jaws pivoted between their ends, the upper ends slotted and loosely suspended from said cross-head, a mandrel, wedge members on the mandrel, spring means on the mandrel coacting with the wedges to close the jaws, and trip mechanism within the jaws and carried at the

lower end thereof, said trip mechanism including yieldingly connected extendible members carrying a trigger, which latter is housed within the jaws and in the path of the article to be recovered, and operative thereby, and means coacting with said trigger and with the inside of the jaws to maintain the latter normally open.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM S. BOGGS.

Witnesses:

CHARLES A. PENFIELD,
E. G. BLASDEL.