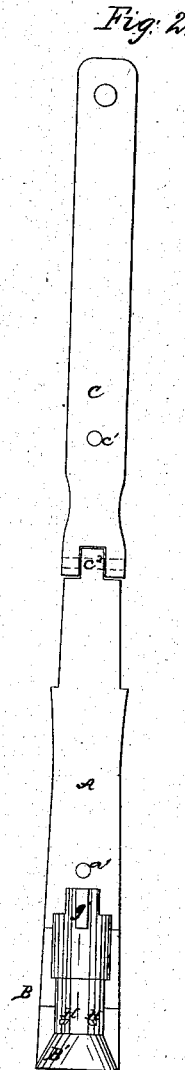
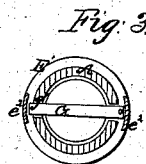
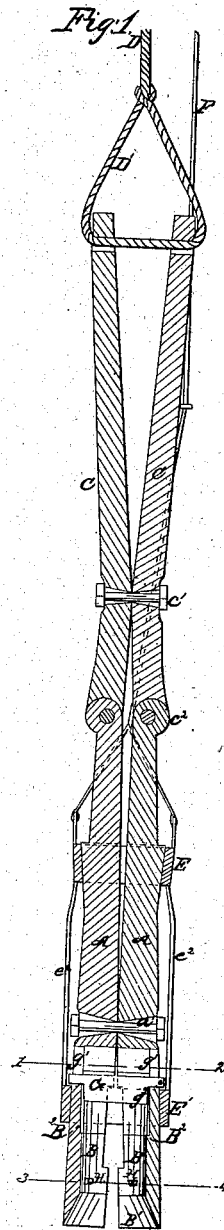


No. 48,615.

PATENTED JULY 4, 1865.

J. BEYER.
MODE OF EXTRACTING DRILLS FROM WELLS.



Witnesses.
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JACOB BEYER, OF BUFFALO, NEW YORK, ASSIGNOR TO HIMSELF AND JOHN E. SMITH, OF SAME PLACE.

IMPROVEMENT IN MODES OF EXTRACTING DRILLS FROM WELLS.

Specification forming part of Letters Patent No. 48,615, dated July 4, 1865.

To all whom it may concern:

Be it known that I, JACOB BEYER, of the city of Buffalo, county of Erie, and State of New York, have invented new and useful Improvements in Devices for Extracting Drills and Broken Tools from Oil-Wells; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure I is a longitudinal section of my improved device. Fig. II is a section of one longitudinal half or portion thereof. Fig. III is a cross-section on line 1 2. Fig. IV is a cross-section on line 3 4.

Letters of like name and kind represent like parts in each of the figures.

The nature of this invention consists in the combination, with a pair of griping-tongs, of secondary or reversing levers, by which said tongs may be made to take hold of and firmly grasp the broken tool or drill and to withdraw the same by a direct upward pull on a rope or chain, by which the instrument is lowered into the well; second, in constructing a pair of griping-tongs with exterior wedge-surfaces above and below the hinge thereof, and the combination therewith of two rings, which may be moved and operated by a cord reaching to the top of the well in a manner to open and shut the jaws of the tongs when required.

The griping-tongs consist of two levers, A A, hinged or joined together at *a'*, the lever ends or jaws thereof being concaved to a semicylindrical form, as shown at B, enlarged or flared out, as shown at B', to guide the instrument and insure the proper taking hold of the drill as it is lowered into the well.

C C represent the secondary or reversing levers, which are hinged or jointed together, as shown at C', and hinged to the griping-levers at C².

D represents the operating rope or chain, by which the instrument is lowered into the well and made to grasp the drill or broken tool, and by which the drill or broken tool so seized is raised and withdrawn from the well. It connects with the upper ends of the lever C C by a loop, D', which causes an upward strain on the rope to draw the upper ends of the levers C C forcibly together, which motion is

communicated to the griping-tongs in a manner (evident by inspection of the drawings) to bring together the jaws of the tongs and firmly grasp anything that may come between them. The tong-levers have their exterior surfaces made convex, so that their cross-section, when taken together, is circular, and are tapered longitudinally above and below the hinge *a'* in reverse directions, and are provided with encircling-rings E E', one above and the other below the hinge *a'*, and connected together by the side bars, *e*². An upward movement of these rings causes the upper one, E, to act upon the taper above the joints in a manner to bring the levers together above and open the jaws below and release their hold on the tool, and a downward movement thereof causes the lower ring, E', to act upon the taper below the joint in a manner to bring the jaws together. The upward movement of the rings is produced by pulling on cord F, connected therewith and reaching to the top of the well, and the downward motion is produced by their own weight.

Before lowering the instrument into the well the jaws are expanded, and in that position fixed by a stop-bar, G, held in guide-slots *g'* in the jaws, and having shoulders, as shown at *g*², which catch against the inside of the jaws. The instrument being lowered into the well until it strikes the drill or broken tool to be removed, the jaws, being expanded, will pass down around the drill until the end thereof strikes the stop-bar G and forces it up in the guide-slots *g'* until it releases its hold upon the jaws and allows them to be brought together by the action of the ring E, as before described, so as to tightly grasp the drill or tool between them, which grasp is tightened by the application of an upward strain upon the rope D in the manner before described, and this grasp increases in strength in proportion as the strain upon the rope D is increased, so that it is scarcely possible for the jaws to slip their hold upon the tool or drill, whatever amount of power may be applied to remove the same from the well.

The jaws are provided with internal spurs or teeth H, of hardened steel, which indent themselves into the tool or drill and give an increased hold thereon.

When the drill or tool to be removed has a

head or collar the spurs H may be removed by unscrewing them from the jaws, they being rendered unnecessary by the jaws having an offset or shoulder, as shown at B², which will catch in under the head or collar of the drill or tool to be removed, and in that manner enable the instrument to obtain a secure hold thereon.

The grasp of the jaws upon a tool or drill may be instantly released by pulling on the cord F and raising the ring E, as before described.

It is believed that this instrument is superior to any previous invention from the perfect control of its movements and operation, which may be had from the top of the well at which it may be required to work.

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

1. Operating the griping-tongs A A by the reversing or secondary levers C C and rope D, in the manner and for the purposes described.
2. The combination of the upper ring, E, and operating-cord F with the tapering griping-tongs, for the purposes and substantially as described.

3. The combination of the lower ring, E', with the tapering griping-tongs and stop-bar G, operating as and for the purposes described.

JACOB BEYER.

Witnesses:

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