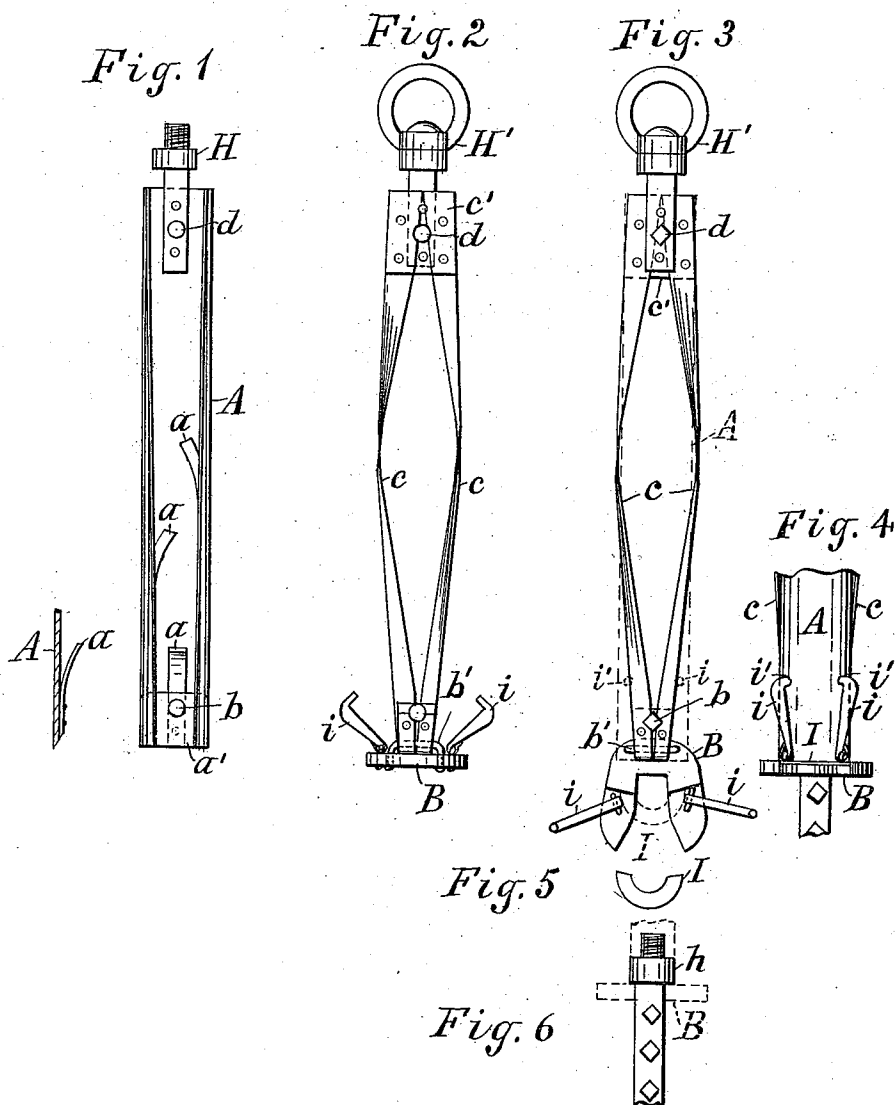


(No Model.)

L. R. HITCHCOCK.
SUCKER ROD SOCKET AND ELEVATOR.

No. 511,525.

Patented Dec. 26, 1893.



WITNESSES:
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UNITED STATES PATENT OFFICE.

LUKE R. HITCHCOCK, OF FOUR MILE, NEW YORK.

SUCKER-ROD SOCKET AND ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 511,525, dated December 26, 1893.

Application filed June 5, 1893. Serial No. 476,583. (No model.)

To all whom it may concern:

Be it known that I, LUKE R. HITCHCOCK, a citizen of the United States, and a resident of Four Mile, in the county of Cattaraugus, in the State of New York, have invented new and useful Improvements in Sucker-Rod Sockets and Elevators, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to a device for removing broken sucker-rods from oil or other wells and a device for elevating the rod after a joint is reached, and the object of my invention is to combine the two devices together into one device so that not only the sucker-rod or pipe can be grasped firmly and removed, but also a joint of the rod when it is raised sufficiently.

To this end my invention consists in the combination of a sucker-rod socket formed of a slitted tube with springs secured to the inner surface with their free ends projecting toward the axis of the tube, and straps extending from one end of the tube to the other on the outside thereof and removably secured to the tube, a swivel attached to the upper end of the tube, a pivoted clamping device at the lower end of the tube pivoted to the said straps, and hooks pivoted to the clamping device and adapted to enter apertures in the pipe when the joint or end of the rod is clamped or grasped; or my invention consists broadly in the combination of a sucker-rod socket provided with springs on the inside to grasp the rod and a pivoted clamping device at the lower end of the tube and having hooks pivoted to the clamp and entering apertures in the tube.

In the drawings accompanying this specification and forming a part thereof, Figure 1 is a side elevation of the slitted side of the tube. Fig. 2 is a side elevation of the attachment by which the tube shown in Fig. 1 becomes a rod elevator. Fig. 3 shows a side elevation of the opposite side of the attachment. Fig. 4 shows the lower part of the combined device. Fig. 5 is a thin steel plate that may lie upon the clamp to provide a better bearing for a joint and Fig. 6 is a joint for a sucker rod.

Referring specifically to the drawings, A is the tube provided with a longitudinal slit

throughout its length. The lower end of the tube is reamed out on the inside so that its edge is quite sharp to more readily receive the end of a broken sucker-rod, which, after it passes into the tube sufficiently is grasped and held by the springs, *a, a*, on the inside of the pipe. These springs may be of any suitable form and may be secured by rivets or screws to any part or parts of the interior of the tube desired.

The construction of the sucker rod socket is similar to that shown and described in my United States Patent No. 471,975, dated March 29, 1892.

The springs form catches for the sucker rod and preferably project inward and upward within the tube, A. When secured by screws to the tube the heads of the screws are on the outside so that they may be readily removed when necessary. This feature is shown clearly in my patent above referred to.

The lower edges of the tube, A, are tied together by a plate, *a'*, screwed thereto to prevent spreading and to provide means for securing the clamping attachment, B, to the tube. A bolt, *b*, passes through the center of this plate and the lower end of the straps, *c, c*, of the clamping attachment just above where the clamp, B, is pivoted to the said straps.

H— is a removable bracket on the upper end of the tube, A, and is preferably secured upon the inside of the tube. When the said attachment is applied to the tube this bracket is removed, the swivel, H', on the upper end of the attachment or rod elevator taking its place. The said bracket or swivel is the means by which the socket, A, and the rod elevator is raised and lowered. The bracket and swivel are preferably secured to the tube, A, by a threaded bolt and nut, *d*, and a pin above and below the said bolt extending from the shanks of the bracket and swivel into holes in the tube. This bolt and said pins on the swivel shank also pass through the plate, *c'*, securing the upper ends of the metal straps, *c, c*, together. Said plate and ends of straps lie between the shank of the swivel and the tube, A.

The upper end of the bracket, H, is screw-threaded to receive the end of the operating rod not shown in the drawings.

In using my device the operator first screws

the operating rod onto the bracket, H, and lowers the tube into the well containing the broken sucker-rod, and when the tube reaches the broken end its flaring mouth passes over it, and as the end passes up into the tube it slides past the upwardly and inwardly projecting ends of the springs, *a, a*, and wedges itself in between the walls of the tube and the ends of the springs. When thus secured the tube is withdrawn from the well carrying with it the sucker rod. When the end of the sucker-rod has been drawn above the casing-head the socket can be readily removed by unscrewing the short screws which hold the spring-catches, thereby releasing their hold upon the rod. When a joint of the sucker rod is reached the clamp, B, is placed beneath the expanded part, *h*, of the joint around the square part as shown in dotted lines in Fig. 6 and forms a wrench to hold the rod while the length above is unscrewed therefrom. Then the clamping attachment is secured to the tube by means of the two bolts, *b, b*, and, *d*, one at the top and the other at the lower end of the tube, A, and the rope passing over the pulley at the top of the derrick secured to the swivel, H', and the elevator is raised with the sucker-rod out of the well. When the lower end of the rod is raised above the casing-head it is lowered upon the derrick floor which releases the pressure upon the clamp, B, allowing the hooks, *i, i*, pivoted thereto and having their free ends in the apertures *i', i'*, in the opposite sides of the tube, to drop or fall out and release the clamp, B, so that it will lie in the position shown in Fig. 3 and thereby releasing the sucker-rod.

The metal straps, *c, c*, pivoted to the clamp or wrench, B, as it is sometimes called, extend from the pivot, *b'*, on one side of and from the lower end of the tube, in opposite directions around the exterior of said tube, to the upper end and opposite side thereof a small plate at each end of the said straps secures their ends together by rivets. The semi-circular thin piece, I, in Fig. 5 is designed particularly to support a sucker-rod formed of a pipe.

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

1. The combination of a sucker-rod socket provided with springs on the inside to grasp

the rod, a pivoted clamping device at the lower end of the tube and having hooks pivoted to the clamp, and apertures in the tube to receive the ends of the hooks, substantially as described.

2. The combination of a sucker-rod socket formed of a slitted tube with springs secured to the inner surface of the tube and with their free ends projecting toward the axis of said tube, and metal straps extending from one end of the tube to the other on the outside thereof, and removably secured to the tube, a swivel attached to the upper end of the tube and straps, a pivoted clamping device at the lower end of the tube and pivoted to the straps, hooks pivoted to the clamp, and apertures in the sides of the pipe to receive the free ends of the hooks, substantially as described.

3. The combination of a sucker-rod socket formed of a slitted tube with springs secured to the inner surface of the tube and with their free ends projecting toward the axis of said tube, and metal straps extending from one end of the tube to the other on the outside thereof and around the tube and removably secured to the tube, a swivel attached to the upper end of the tube and straps, a pivoted clamping device at the lower end of the tube and pivoted to the straps, hooks pivoted to the clamp, and apertures in the sides of the pipe to receive the free ends of the hooks, substantially as described.

4. The combination of a sucker-rod socket formed of a slitted tube with springs secured to the inner surface of the tube and with their free ends projecting toward the axis of said tube, a metal piece extending from one end of the tube to the other on the outside thereof, and removably secured to the tube, a swivel attached to the upper end of the tube and metal piece, a pivoted clamping device at the lower end of the tube and pivoted to the piece, hooks pivoted to the clamp, and apertures in the sides of the pipe to receive the free ends of the hooks, substantially as described.

In testimony whereof I have hereunto signed my name.

LUKE R. HITCHCOCK. [I. s.]

Witnesses:

MARK W. DEWEY,
H. M. SEAMANS.