

A. SOSS.
WELL HOOK.
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974,533.

Patented Nov. 1, 1910.

Fig. 1.

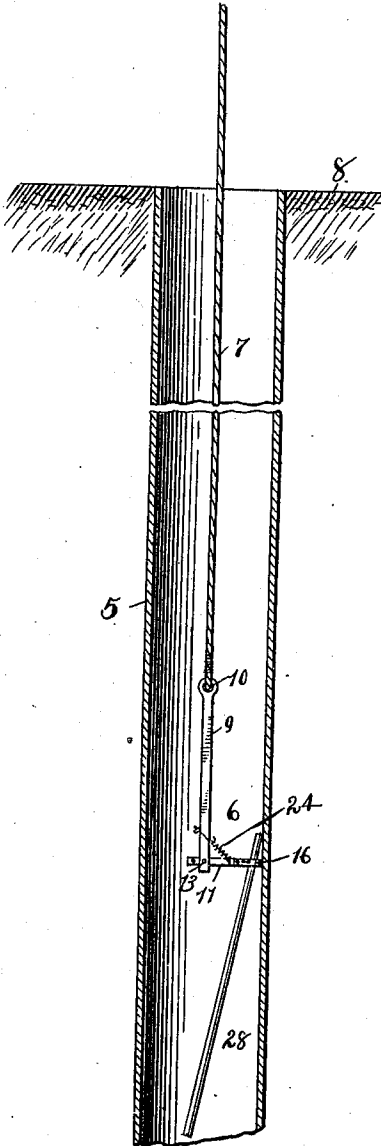


Fig. 2.

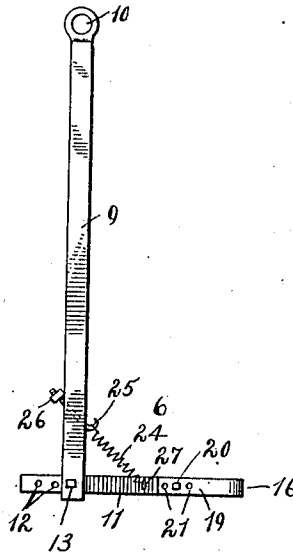
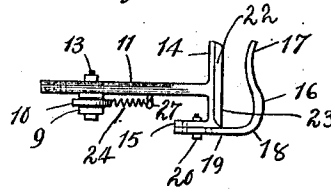


Fig. 3.



Witnesses:

E. F. Bassett.
M. A. Milord,

Inventor

Arthur Soss

By

Frederick R. Soss
Att'y.

UNITED STATES PATENT OFFICE.

ARTHUR SOSS, OF BEE, NEBRASKA.

WELL-HOOK.

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To all whom it may concern:

Be it known that I, ARTHUR SOSS, citizen of the United States, residing at Bee, in the county of Seward and State of Nebraska, have invented certain new and useful Improvements in Well-Hooks, of which the following is a specification.

My invention relates to grappling devices and refers more especially to appliances adapted to be used in wells for the purpose of extracting pipes, augers and other tools of a similar character that have become broken or disconnected from their operative attachments.

The chief objects of the improvements which form the subject matter of this application for patent are:—to provide a simple and efficient clamp or hook for the purpose stated; to furnish a device of this character that can be adjusted to operate effectively in well casings or tubes of different diameters, and to arrange the jaws of the grapple so that they may be relatively adjusted to correspond with the size of the article to be seized.

I accomplish the desired results by means of the appliance illustrated in the accompanying drawing, which forms a part of this application, the details of construction being disclosed in the following views:—

Figure 1 is a sectional view of a well tube or casing, within which is shown my improved well hook in position for gripping a tool rod, or pipe; Fig. 2 is an enlarged elevation of the hook detached from the rope, and Fig. 3 is a top plan view of the mechanism shown in Fig. 2.

Referring to the details of the drawing, the numeral 5 designates a well tube or casing, within which my improved grappling device 6 is suspended by a rope or cable 7, which extends above the ground surface represented at 8. The said device comprises a vertical bar 9, having its upper end formed with an eye 10 to facilitate the attachment of the operating cable 7. This lift bar 9 may be of any convenient length, and either round or square, in cross section, the latter being the preferred form and the one shown in the drawing. Attached to the lower end of the said lift bar is an arm 11, furnished with a number of bolt holes 12 at one end, and secured by a shouldered bolt 13 which passes through one of the said holes 12 and a hole in the lower end of the bar 9. The purpose of using a bolt with a shoulder at

this point is to permit the said arm to swing vertically thereon so as to assume various angles with the said bar 9. The outer end of the arm 11 is provided with a jaw 14 extending transversely, and having one end turned at a right angle to form a bearing flange 15.

Arranged opposite to the straight jaw 14 is a cooperating jaw 16 curved at the end to form a hook 17, and bent at approximately a right angle at 18 to form a shank or stem 19, which is clamped against the face of the flange 15 by a bolt 20, the stem and flange both being supplied with several bolt holes 21 to permit relative adjustment of the jaw and hook. The corners of the straight jaw 14 are chamfered as indicated at 22 to form a sharp angle or edge 23, which is preferably made of hardened steel.

When in operative position the arm 11 and attached jaws should extend at approximately a right angle with the shank 9, and to yieldingly maintain said arm in this relative position a coiled spring 24 is attached at one end to a hook 25, which passes diagonally through the body of the bar 9 and has a threaded end for the application of a nut 26, which will permit of adjustment of the hook to vary the spring tension when required, and the other end of said spring is attached to a lug or hook 27, projecting laterally from the said arm 11. When properly arranged this arm will normally extend at substantially a right angle from the bar 9.

To use the device thus described as a grappling means the appliance is lowered into the well by means of the rope, until the jaws of the tool are opposite some portion of the article to be grasped. When the latter is a pipe, bar or auger, it will usually be lodged at some angle with the vertical as shown at 28 in Fig. 1, and when the grapple has been lowered to the desired position the supporting cable or rope is twisted in the proper direction so that the jaws 14 and 16 will sweep in a circle with the mouth forward as the shank or bar 9 turns on its vertical axis, and by slightly raising and lowering the apparatus the required position will be found to properly engage the pipe or rod 28. As soon as the article to be lifted is fairly in the bight of the hook, the grapple is lifted by means of the rope 7, and the spring 24 will yield to the weight of the grasped object so that the arm 11 will be inclined downward at an angle and this

will compel the jaws to bind on the pipe, and cause the sharp edge 23 of the jaw 14 to bite into the metal and thus secure a firm grip to prevent end slip of the grasped article. It will be seen that by this arrangement the heavier the article the more securely it will be held, so that it may be lifted to the surface without danger of becoming dislodged by the contact of any portion of the device or the grasped tool with the casing of the well, under ordinary circumstances.

Having thus described my invention, what I claim as new, is:—

- 15 1. In a grappling device, the combination with a lift bar, of a gripping member pivoted on said bar, and means adapted to yieldingly support the gripping member at an angle with the said bar.
- 20 2. In a grappling device, the combination

with a lift bar, of an arm pivoted thereto and provided with a fixed jaw, a hooked jaw adjustably attached to said fixed jaw, and a spring adapted to support the said arm at an angle with the lift bar.

25 3. In a grappling device, the combination with a lift bar, of an arm adjustably pivoted to the bar, a fixed jaw on said arm, said jaw having an angular gripping face, a hooked jaw adjustably attached to said fixed jaw and cooperating therewith, and adjustable means for yieldingly supporting the said arm relatively to the lift bar.

In testimony whereof I affix my signature in the presence of two witnesses.

ARTHUR SOSS.

Witnesses:

HENRY PETERSEN,
FRANK CUDAS.