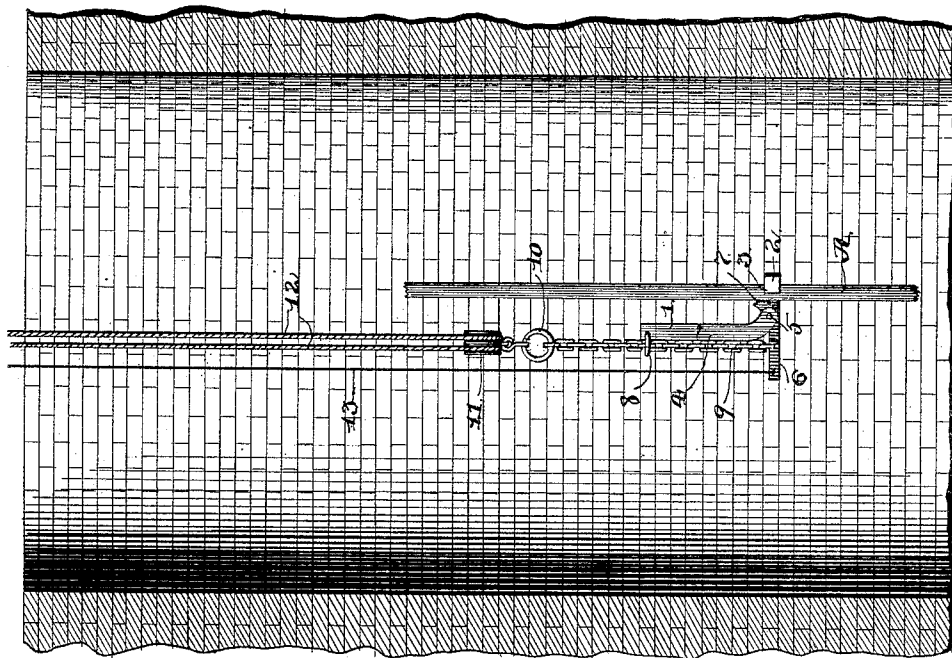
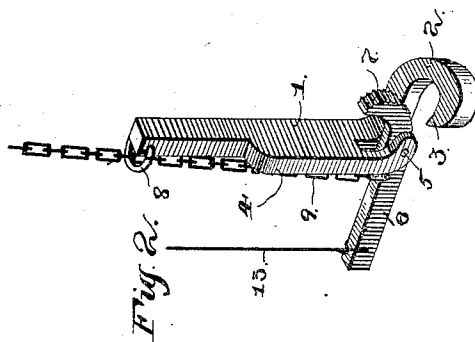


(No Model.)

H. B. HESS.
WELL GRAPPLE.

No. 437,200.

Patented Sept. 30, 1890.



Witnesses

—Horace A. Smith—

W. J. Lowell

Fig. 1.

By his Attorneys,

C. A. Snow & Co.

Inventor

—Harry B. Hess, Jr.—

UNITED STATES PATENT OFFICE.

HARRY B. HESS, OF ST. LOUIS, MISSOURI.

WELL-GRAPPLE.

SPECIFICATION forming part of Letters Patent No. 437,200, dated September 30, 1890.

Application filed June 28, 1890. Serial No. 357,105. (No model.)

To all whom it may concern:

Be it known that I, HARRY B. HESS, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Well-Grapple, of which the following is a specification.

This invention has relation to a grappling device for connecting with well-tubes, rods, and other similar articles for the purpose of raising and lowering the same.

The objects of the invention are to provide such a device the construction of which is simple and economical and adapted to be securely locked upon the rod or pipe by reason of the weight of the latter, and which may be readily disconnected therefrom at the will of the operator.

With the above objects in view the invention consists in certain features of construction, hereinafter specified, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a sectional view of a well, a grapple constructed in accordance with my invention being located therein and in the act of lowering a tube. Fig. 2 is an enlarged detail in perspective of the grapple.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the grapple stock or bar, which near its lower end is bent to form an arm 2, disposed at a right angle to the stock and having its extremity bent around to form a hook 3. A depending ear 4 is formed upon the side of the stock at which is located the hook, said ear extending down into line with the hook, as shown. A bearing-pin 5 passes through the ear near its lower end and through the stock near the angle formed by the provision of the arm.

Upon the bearing-pin above mentioned is pivoted a lever 6, the inner end of which takes into the space formed by the hook and is curved or cam-shaped, the cam being eccentric with relation to the pin and provided with a series of ratchet-teeth 7. A ring 8 is loosely mounted in the upper end of the stock, and a chain 9 is passed through the ring and loosely connected at its lower end to the cam-lever immediately in rear of the pin. The upper end of the chain is provided with a ring 10, which engages the hook of an ordinary pulley

11, suspended by the cables or ropes 12 from a suitable support above. From the extremity of the lever there extends an operating rope or cord 13, the function of which will be hereinafter apparent.

To lower the tube A the lower hook-shaped arm of the stock takes around the same and the pulley drawn up by the ropes, causing the cam-face of the lever to bind upon the tube and grip the same between itself and the inner edge of the hook. The pulley is then lowered by the ropes or cables, the weight of the tube and grapple being supported by the chain, which weight serves to tighten the grip of the cam-lever upon the tube. It will be apparent that the heavier the tube or rod the greater the gripping force of the lever, so that said tube or rod may be lowered with perfect safety to the bottom of the well or raised therefrom, as is desirable. When it is desired to disengage the grapple from the hook, the lever-operating rope secured to the end of the locking-lever is pulled, so as to disengage the cam-face of said lever from its binding position upon the tube. This is readily accomplished when said tube has reached the bottom of the well, and its weight does not exert any influence upon the lever. The lever is pivoted at a point near its inner end or directly in rear of its cam-face, so that the weight at the outer end of the same is sufficient to cause such a disengagement and especially when aided by the operating-cord, through the medium of which the entire device may be laterally moved so as to cause the hook-shaped arm to disengage from around the tube.

Having described my invention, what I claim is—

1. In a grapple of the class described, the combination, with a stock bent near its lower end at a right angle to form an arm and having a laterally-disposed hook-shaped extremity and provided above said bent portion with a depending bearing-ear, of a cam-lever pivoted between the ear and the stock, a chain connected with the grapple, and means for operating the lever to grip a tube between the lever and hook, substantially as specified.

2. In a grapple of the class described, the combination, with a stock the lower portion of which is bent at a right angle to form an arm, which latter is laterally bent to form a

hook, said stock being provided with a bearing-ear located at one side of and depending opposite the hook and with a ring at its upper end, of a cam-lever pivoted between the
5 ear and stock and in line with the hook, said lever having a ratchet-face, a draft-chain loosely connected with the lever in rear of its pivot and passing through the ring, and a lever-operating cord connected with the free

rigid end of the lever, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HARRY B. HESS.

Witnesses:

BRUNO H. KUNATH,
WM. M. McCAWLEY.