No. 702,334. Patented June 10, 1902.

L. N. & S. H. SCHULTE.

PUMP PIPE GRAPPLE.

(Application filed Jan. 31, 1902.)

(No Model.)

Fig. 1.

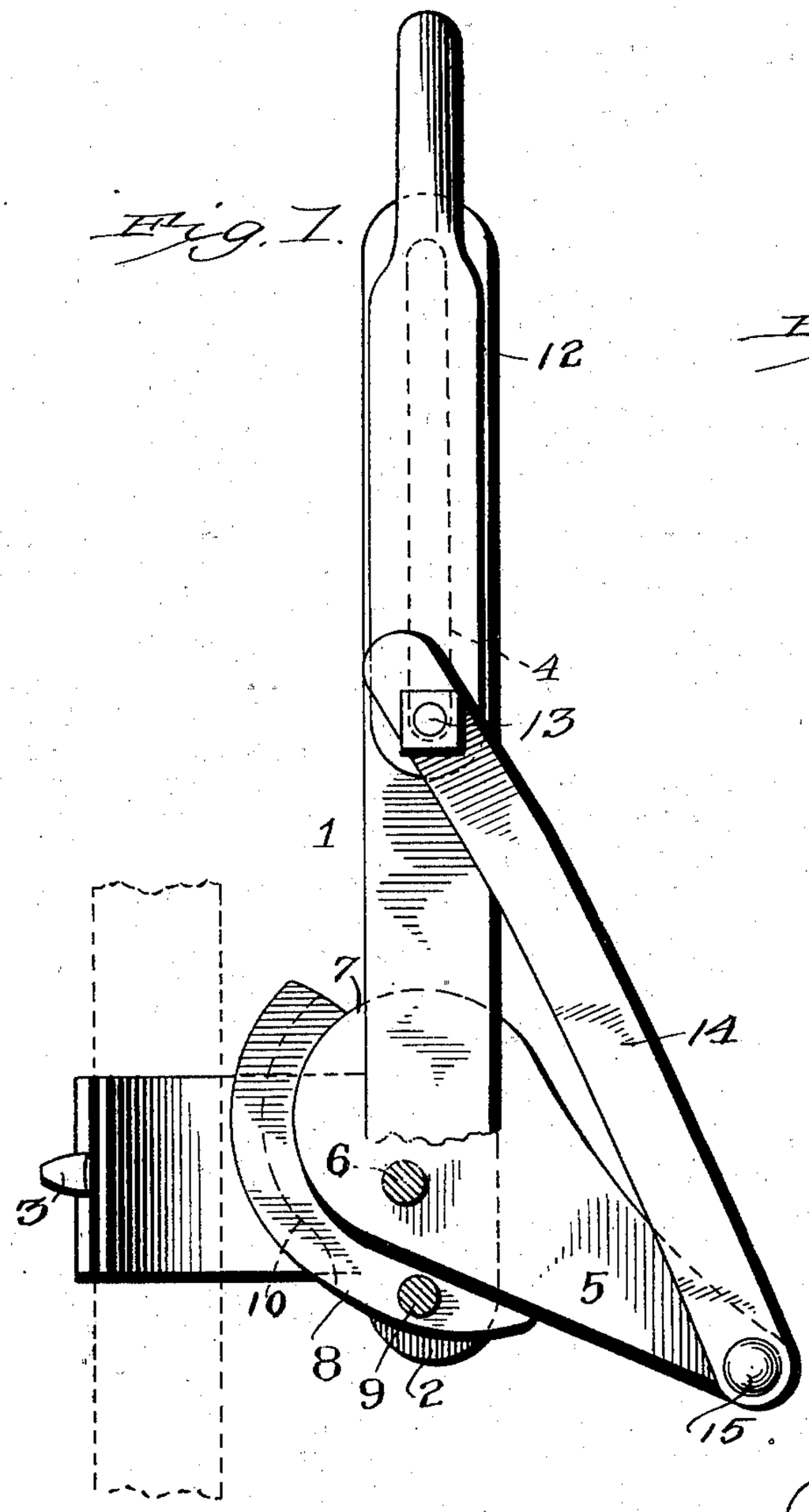
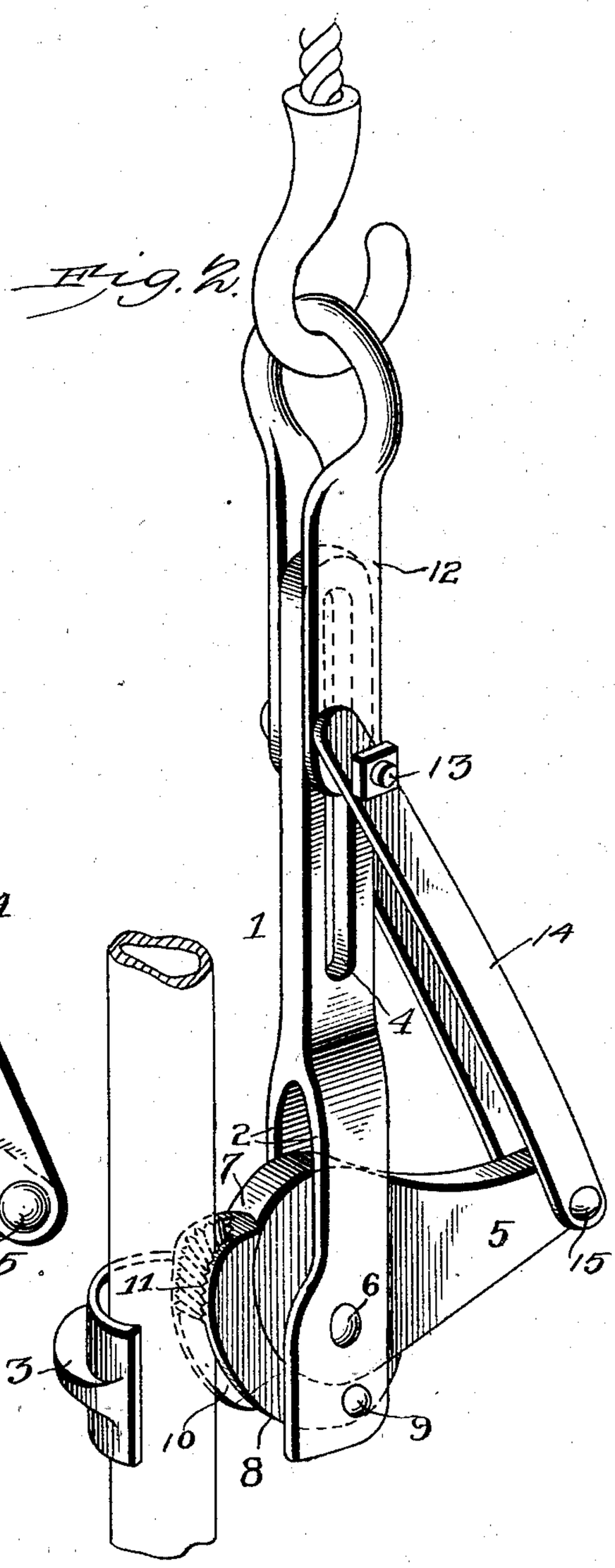


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

LEVI N. SCHULTE AND SAMUEL H. SCHULTE, OF OREGON, MISSOURI.

PUMP-PIPE GRAPPLE.

SPECIFICATION forming part of Letters Patent No. 702,334, dated June 10, 1902.

Application filed January 31, 1902. Serial No. 92,042. (No model.)

To all whom it may concern:

Be it known that we, LEVI N. SCHULTE and SAMUEL H. SCHULTE, citizens of the United States, residing at Oregon, in the county of Holt and State of Missouri, have invented a new and useful Pump-Pipe Grapple, of which the following is a specification.

Our invention is an improved pump-pipe grapple adapted for use in raising and lowering pump-pipes from and into wells and for analogous uses; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of a pump-pipe grapple constructed in accordance with our invention, showing the cam-lever, shoe-jaw, and bail in the positions assumed thereby when disengaging a pipe. Fig. 2 is a perspective view of the same, showing the grapple engaged with a pump-pipe.

In the embodiment of our invention here shown we provide the stock or body 1, which is in the form of a bar, has its lower end bifurcated to form a pair of depending ears 2, and has a rigid jaw extending from one side of one of the ears, and the said rigid jaw is curved laterally in substantially semicircular form, as at 3. The upper portion of the stock 1 is provided with a guide-slot 4 of suitable length. A lever 5 is disposed between the ears 2 and pivoted upon a bolt or pin 6. The outer portion of the said lever projects outwardly from the stock opposite to the rigid jaw 3 and is formed with an eccentric cam 7 at its inner end. A shoe-jaw 8 of arcuate form has its lower end pivoted between the lower ends of the ears 2 and under the inner portion of the cam-lever by a pin or bolt 9. The said shoe-jaw is adapted to engage the periphery of the cam 7 and has its outer side grooved, as at 10, and provided with serrations 11 to form a friction-surface.

A bail 12, of inverted-U shape, is connected to the stock 1, so that it can slide longitudinally thereon, by a bolt or pin 13, which operates in guide-slot 4. Links 14 have their upper ends pivotally connected to the bail by the pin or bolt 13 and their lower ends pivotally connected to the outer end of the cam-lever by a bolt or pin 15.

The operation of our improved pump-pipe grapple is as follows: The bail is engaged by the hoisting rope or tackle, and the pipe to be raised or lowered is engaged on opposite sides by the rigid jaw 3 and the pivoted shoe-jaw. The semicircular form of the rigid jaw forms an opening between one side of said rigid jaw and the shoe-jaw, which enables the pipe at any point thereof to be engaged by the grapple. The bail being raised by the hoisting rope or tackle, the outer end of the cam-lever is raised by the links 14, which are drawn upwardly with the bail, thereby causing the eccentric cam to make a partial revolution, and the same being engaged by the shoe-jaw 8 the latter is pressed firmly against the pipe, which is hence securely gripped or clutched between the rigid jaw and the shoe-jaw. The serrated and grooved engaging face of the shoe-jaw keeps the latter in engagement with the pipe and prevents the same from slipping either longitudinally of the pipe or laterally with relation thereto. It will be understood that the greater the length and weight of the pipe the more effectually it will be gripped and clamped by the grapple, and hence the same is efficient for raising and lowering pump-pipes out of and into wells and for other analogous uses. When the grapple is lowered with reference to the pipe, the downward movement of the bail on the stock causes the outer end of the cam-lever to be correspondingly depressed, and the action of the cam with relation to the shoe-jaw is such that the shoe-jaw is disengaged from the pipe, as will be understood.

Having thus described our invention, we claim—

1. In a grapple of the class described, the combination of a stock having a rigid jaw on one side, a cam-lever and a shoe-jaw pivoted to the stock, said shoe-jaw being disposed opposite the rigid jaw and adapted to bear against the cam, a bail connected to and longitudinally movable on the stock and a connection between the bail and the cam-lever, whereby the latter is operated by the bail, substantially as described.

2. In a grapple of the class described, the combination of a stock having a rigid jaw on one side and a longitudinal guide-slot, a cam-lever, and a shoe-jaw pivoted to the stock, said shoe-jaw being disposed opposite the

rigid jaw and adapted to bear against the cam, a bail, a connecting element pivotally connecting the bail to the stock, said connecting element operating in the guide-slot, and a link pivotally connected to the bail and the cam-lever, substantially as described.

3. In a grapple of the class described, the combination of a stock having a rigid jaw on one side thereof, the said rigid jaw having a lateral extension disposed opposite one side of the stock, a cam-lever and a shoe-jaw pivoted to the stock, said shoe-jaw being disposed opposite the lateral extension of the rigid jaw and adapted to bear against the cam, a bail connected to and longitudinally movable on the stock, and a connection between the bail and the cam-lever, whereby the latter may be operated to operate the shoe-jaw, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

LEVI N. SCHULTE.
SAMUEL H. SCHULTE.

Witnesses:
HERB MCDONALD,
ED NOELLSCH.