

No. 656,555.

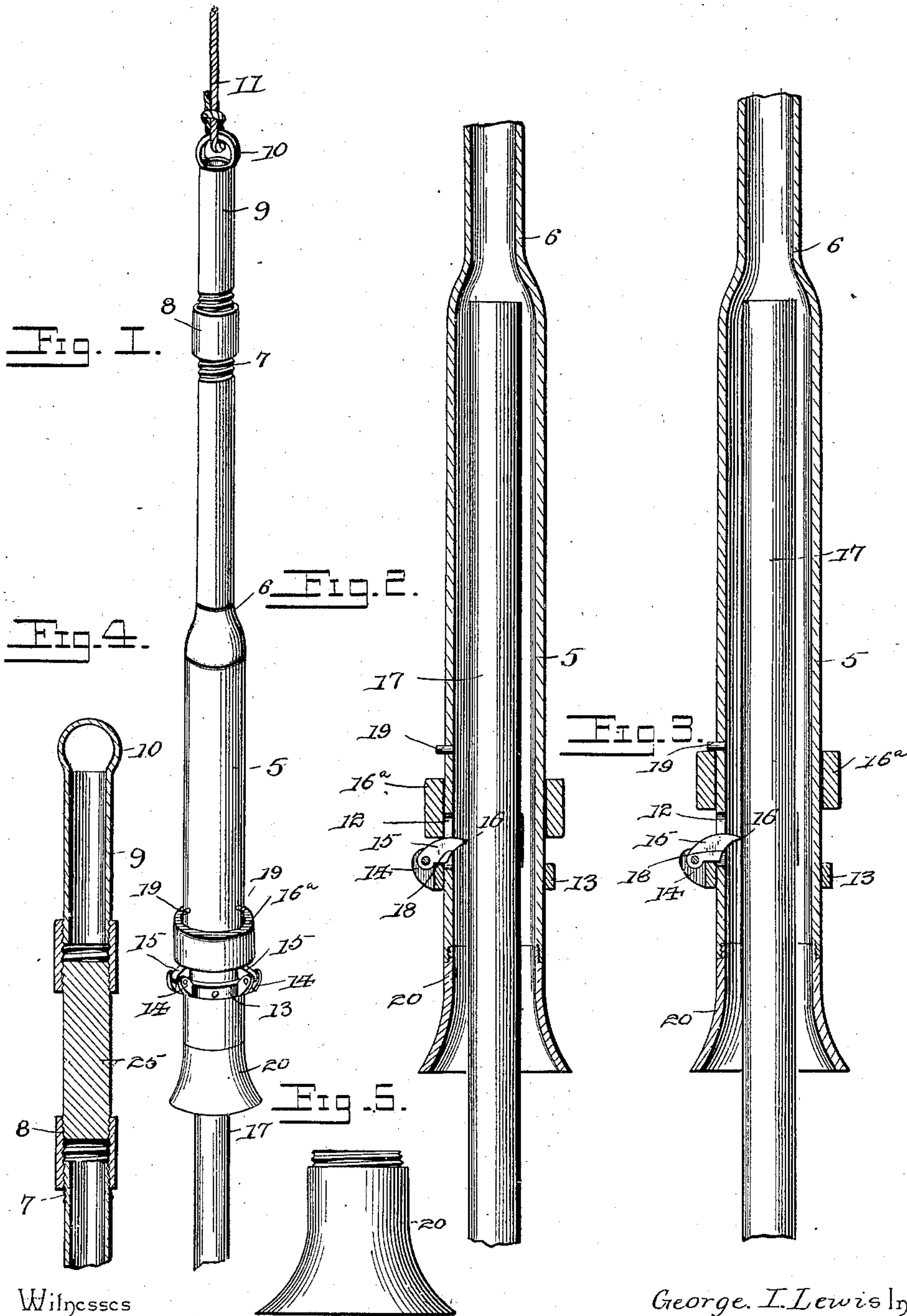
Patented Aug. 21, 1900.

G. I. LEWIS.

DRILL GRAB.

(Application filed Nov. 22, 1899.)

(No Model.)



Witnesses  
F. E. Alden.

Geo. H. Chandler.

By His Attorneys.

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# UNITED STATES PATENT OFFICE.

GEORGE I. LEWIS, OF LAWLER, IOWA, ASSIGNOR OF TWO-THIRDS TO  
WINFIELD W. SANBORN AND JUDSON S. STIMSON, OF SAME PLACE.

## DRILL-GRAB.

SPECIFICATION forming part of Letters Patent No. 656,555, dated August 21, 1900.

Application filed November 22, 1899. Serial No. 737,921. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE I. LEWIS, a citizen of the United States, residing at Lawler, in the county of Chickasaw and State of Iowa, have invented a new and useful Drill-Grab, of which the following is a specification.

This invention relates to grabs, and more particularly to that class known as "drill-grabs;" and one object of the invention is to provide a construction which will insure engagement with the drill to be raised and which may, moreover, be adjusted to different weights and to snugly fit casings of different sizes for operation under different conditions.

A further object of the invention is to provide a construction which will be simple and easy of operation and which will readily and positively engage the drill.

In the drawings forming a portion of this specification, and in which similar numerals of reference designate like and corresponding parts in the several views, Figure 1 is a side elevation showing the complete grab engaging a drill. Fig. 2 is a view, partially in section and partially in elevation, showing the engagement of the grab with a drill. Fig. 3 is a view similar to Fig. 2 and showing the holding-weight raised from the dogs to permit disengagement of the latter from the drill. Fig. 4 is a sectional view showing the upper end of the body portion of the grab with a weight applied between it and the stem. Fig. 5 is a side elevation showing a bell end for the body portion.

Referring now to the drawings, the grab of the present invention comprises a tubular body portion 5, the upper portion of which is reduced in diameter, as shown at 6, and is provided with exterior threads 7, adapted for engagement by a coupling 8, through the medium of which the stem 9, having the eye 10, is connected with the body portion. This eye 10 has a cable 11 engaged therewith, through the medium of which the grab is lowered into a well and drawn therefrom. The body portion 5 is provided with longitudinal slots 12, adjacent its lower end, and below these slots and upon the exterior of the body portion is fixed a ring 13. This ring 13 has a plurality of ears 14, disposed in pairs, one pair of ears being opposite each of the slots 12. Between

the elements of each pair of ears is disposed a dog 15, which lies in the adjacent slot 12 and is adapted to project with its gripping end 16 inwardly of the body portion 5. The dogs in the present instance are three in number, and above them is a weighted ring 16, which is slidably disposed upon the body portion 5 and is adapted to rest upon the dogs to insure their engagement with the stem 17 of the drill to be raised.

The upper faces of the dogs 15 are arc-shaped, as shown, in order that they may be moved readily outwardly and raise the ring 16, and in order to facilitate this outward movement of the dogs when engaged by the drill-stem 17 the inner lower edges or faces of the dog are concaved, as shown at 18, so that when the upper end of the stem of the drill strikes them it will have a wedging action to force them outwardly. The upward movement of the ring 16 is limited by pins 19 inserted in the body portion 5.

In practice the drill-grab is let down through the top of the well-casing, so that the stem of the drill will extend upwardly and into the body portion 5, and to insure this reception of the stem of the drill the lower end of the body portion is threaded, as shown, for the engagement of the threads of a bell 20, the lower end of which is flared to an extent sufficient to fit the casing. Thus when the grab is operated in a casing of large diameter the bell 20 may be substituted by a bell of larger diameter. After the drill-stem has passed into the tubular body portion 5 sufficiently far to engage the dog 16 the cable 11 may be drawn upwardly, when the dogs 15, assisted by the weight-ring 16, will engage the stem of the drill, and the drill may be then drawn from the casing.

When it is found necessary to increase the weight of the grab to insure the passage of the body portion 5 over the stem of the drill, the portion 9 of the grab may be removed from the coupling 8, and in substitution thereof there may be engaged a weight 25, to which the stem 9 may be attached by means of a second coupling.

It will of course be understood that the device may be made of any size and of any suitable material, and that the specific structure



and arrangement shown may be varied without departing from the spirit of the invention. Furthermore, while the present invention is above described in connection with a drill-rod, it may of course be employed for raising well-tubing, valve-rods, &c., and may be employed in any connection to which it is adapted.

What is claimed is—

- 10 1. A drill-grab comprising a tubular body portion having slots, a collar mounted upon the body portion and provided with ears, dogs pivoted to the ears and lying in the slots, a weight slidably mounted upon the body portion and adapted to rest upon the dogs to hold them in the slots, and means for raising and lowering the grab, the lower end of said body portion being adapted for interchange-

ably receiving terminal portions of various diameters.

- 20 2. A drill-grab comprising a tubular body portion having slots, a collar mounted upon the body portion and provided with ears, dogs pivoted to the ears and lying in the slots, a weight slidably mounted upon the body portion and adapted to rest upon the dogs to hold them in the slots, and means for raising and lowering the grab.

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

GEORGE I. LEWIS.

Witnesses:

C. H. LEONARD,  
F. E. KELLEY.