No. 687,165. Patented Nov. 19, 1901.

E. R. QUINBY.

GRAPPLE.

(Application filed Feb. 15, 1901.)

(No Model.)

Fig. 1.

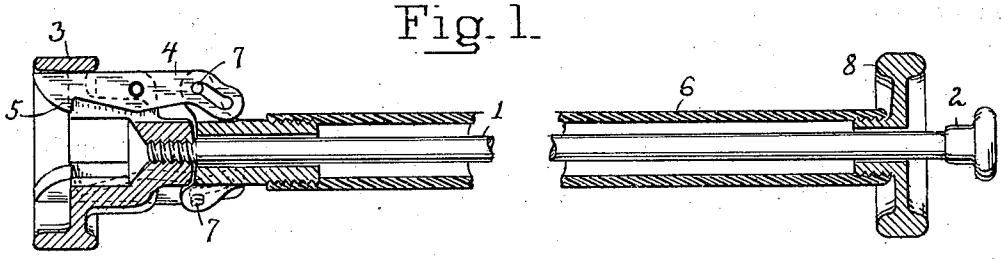


Fig. 2

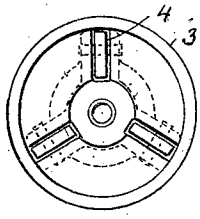
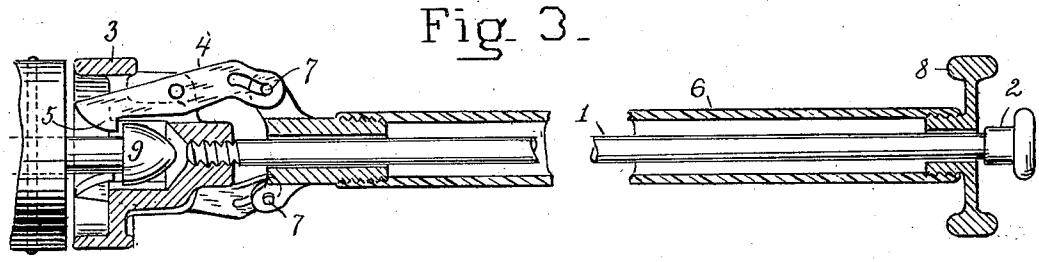


Fig. 3.



Witnesses=
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UNITED STATES PATENT OFFICE.

EDWIN R. QUINBY, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO CHARLES L. CURTIS, OF BOROUGH OF BROOKLYN, NEW YORK, N. Y.

GRAPPLE.

SPECIFICATION forming part of Letters Patent No. 687,165, dated November 19, 1901.

Application filed February 15, 1901. Serial No. 47,408. (No model.)

To all whom it may concern:

Be it known that I, EDWIN R. QUINBY, a citizen of the United States of America, and a resident of the city of New York, borough of Manhattan, county of New York, and State of New York, have invented certain new and useful Improvements in Grapples, of which the following is a specification.

The invention has been made with the special object in view of facilitating the laying of subways for electric cables. It is customary to insert wooden mandrels in the tubes of such subways to insure their alinement while being laid, and these mandrels are drawn into each new section of tubes as they are placed in position. The grapple is employed to draw the mandrels through the tubes. It is not intended, however, to limit the invention to this specific use, since other uses may be found for which the construction claimed will be equally applicable.

In the accompanying sheet of drawings, which forms a part of this specification, Figure 1 is a longitudinal section showing the grapple open. Fig. 2 is an end view of the head of the grapple. Fig. 3 is a longitudinal section showing the grapple closed and in engagement with the end of a mandrel.

In the grapple is a rod 1, having a handle 2 attached to one end and a cup-shaped head 3, with pockets, attached to the opposite end. In the head are three pockets, in each of which a lever 4 is pivoted. Hooks 5 at the ends of the levers point toward the axis of the grapple and are protected by the pockets and cup shape of the head. In the ends of the levers on the other side of the pivots from the hooks are cam-slots. Near each of its ends each slot is in a direction radial to the pivot for a short distance, and between the two end portions the slot is oblique. A sleeve 6 surrounds the rod and carries pins 7 at one end, which engage the slots in the levers, and at the opposite end is a handle 8. The grapple engages a barb 9, which is pinned to the end of the mandrel.

The grapple can ordinarily be operated by the handle 8, since when the grapple is forced in by this handle the friction of the head in the tube retards its entrance, and the levers slip back on the pins and are brought into open position, so that the hooks will readily pass over the barb. On withdrawing the grapple by means of the handle 8 the pins are drawn down to the ends of the slots, thus bringing the levers to the engaging position, and further withdrawal of this handle brings with it the head and the mandrel. The grapple, however, can be released or closed and held in either position during either insertion or withdrawal by operating the two handles in conjunction.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a grapple, the combination with a rod, of a handle for one end of the rod, a head provided with pockets at the other end of the rod, levers pivoted in the pockets of the head and having hooks which point toward the axis of the grapple, a sleeve surrounding the rod, a handle at the end of the sleeve adjoining the handle on the rod, and connections between the other end of the sleeve and the levers whereby the hooked ends of the levers will be brought together by the withdrawal of the sleeve, substantially as described.

2. In a grapple, the combination with a rod, of a handle for one end of the rod, a head provided with pockets at the other end of the rod, levers pivoted in the pockets of the head and having hooks which point toward the axis of the grapple and oblique slots, a sleeve surrounding the rod, a handle at the end of the sleeve adjoining the handle on the rod, and pins carried by the end of the sleeve which engage the oblique slots in the levers to bring the hooked ends of the levers together when the sleeve is withdrawn, substantially as described.

3. In a grapple, the combination with a rod, of a handle for one end of the rod, a cup-shaped head provided with pockets at the other end of the rod, levers pivoted in the pockets of the head and having hooks which point toward the axis of the grapple and are protected by the head, a sleeve surrounding the rod, a handle at the end of the sleeve adjoining the handle on the rod, and connections between the other end of the sleeve and the levers whereby the levers can be operated by sliding the sleeve and rod relatively to each other, substantially as described.

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