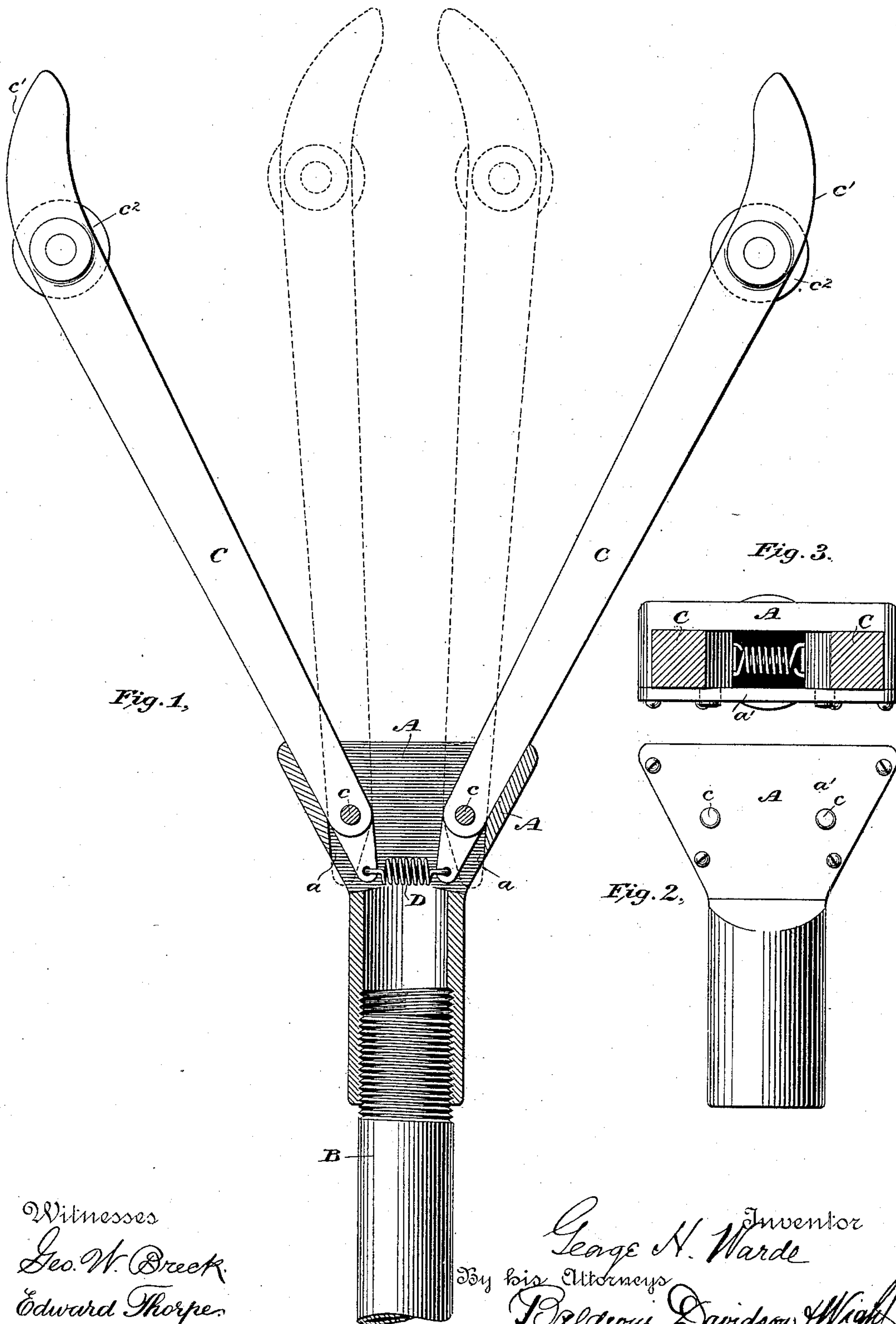


(No Model.)

G. H. WARDE.
PILOT OR HEAD FOR SECTIONAL RODS FOR THREADING UNDERGROUND
CONDUITS.

No. 405,515.

Patented June 18, 1889.



Witnesses
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UNITED STATES PATENT OFFICE.

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PILOT OR HEAD FOR SECTIONAL RODS FOR THREADING UNDERGROUND CONDUITS.

SPECIFICATION forming part of Letters Patent No. 405,515, dated June 18, 1889.

Application filed April 19, 1889. Serial No. 307,832. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. WARDE, a citizen of the United States, residing in New York, county of New York, State of New York, have invented a new and useful Pilot or Head for Sectional Rods for Threading Underground Conduits, of which the following is a specification.

In the United States Letters Patent No. 273,289, granted November 15, 1887, to W. H. Hart, a system is shown by means of which wires or ropes may be threaded or drawn into subway conduits. In that patent short sections of rod are employed. At one man-hole the ends of successive rods are screwed into the rear ends of rods already pushed into the conduit, and so on until the next man-hole or other desired point is reached by the pilot or head of the leading rod. In operating such an apparatus, however, in some forms of underground conduits—such, for instance, as that shown in the patent of Hart and Goodfellow, No. 380,757—it has been found that if the wall between two conduits has become ruptured or broken down from any cause the pilot or head of the advancing rods is liable to pass from the conduit along which it is advanced through the opening into the adjoining conduit, and thus emerge at the next man-hole from a conduit other than that which it originally entered.

My invention is designed to prevent such an occurrence and locate the faults or breaks in the conduits.

In the accompanying drawings, Figure 1 is a plan view, partly in section; Fig. 2, a plan view of the socket or holder with the spring-jaws omitted, and Fig. 3 a front end view with the spring-jaws in sections.

The device consists of a socket or holder A, that may be cast metal, and has a tubular internally-screw-threaded shank, into which the first rod-section B may be screwed. Its front end is preferably widened and flattened, as shown, and is formed with a depression or socket, in which two spring-actuated jaws C are pivoted upon posts or pivots *c*. The outer ends of the jaws are preferably curved or bent inwardly, as at *c'*, and at that point anti-friction rollers *c²* are journaled in slots cut in the jaws. At their rear ends the jaws are prolonged beyond the pivots, and are connected by a spiral spring D,

which tends to throw them apart at their outer ends. The socket A is cut away at *a* to allow the jaws to be pressed toward each other at their outer ends, as indicated by dotted lines. The depression or socket in the holder may be closed by a cover *a'*. The shape of the head will tend to keep it in the horizontal position in which it is illustrated in the drawings, and the axes of the anti-friction rollers are therefore normally vertical, so that the rollers will bear against the sides of the ducts. In entering the head or pilot into a duct the jaws are closed to the position indicated by dotted lines, and the pilot is forced forward by the rods B as they are successively screwed into place and pushed forward, as described in the patent of Hart, above mentioned.

Should the wall of the conduit be broken, as would be the case were one of the partitions shown in the patent of Hart and Goodfellow displaced, one of the jaws will enter the aperture, being pressed into it by its spring, and as the pilot is advanced the edge of the partition or wall will be caught between the jaws, and the progress of the pilot will be checked. The exact location of the fault will therefore be known.

I claim as my invention—

1. In an apparatus for threading conduits, a pilot or head having spring-actuated jaws normally tending to open, substantially as and for the purpose set forth.

2. In an apparatus for threading conduits, the pilot or head having spring-actuated jaws tending to open and curved or bent inwardly at their forward ends.

3. In an apparatus for threading conduits, the pilot or head having spring-actuated jaws tending to open, curved inwardly upon their exterior faces near their forward ends, and provided with anti-friction rollers.

4. In an apparatus for threading conduits, the combination of the head A, the pivoted jaws mounted therein, and the screw-threaded shank of the head for connection with the leading-rod section, substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

GEORGE H. WARDE.

Witnesses:

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