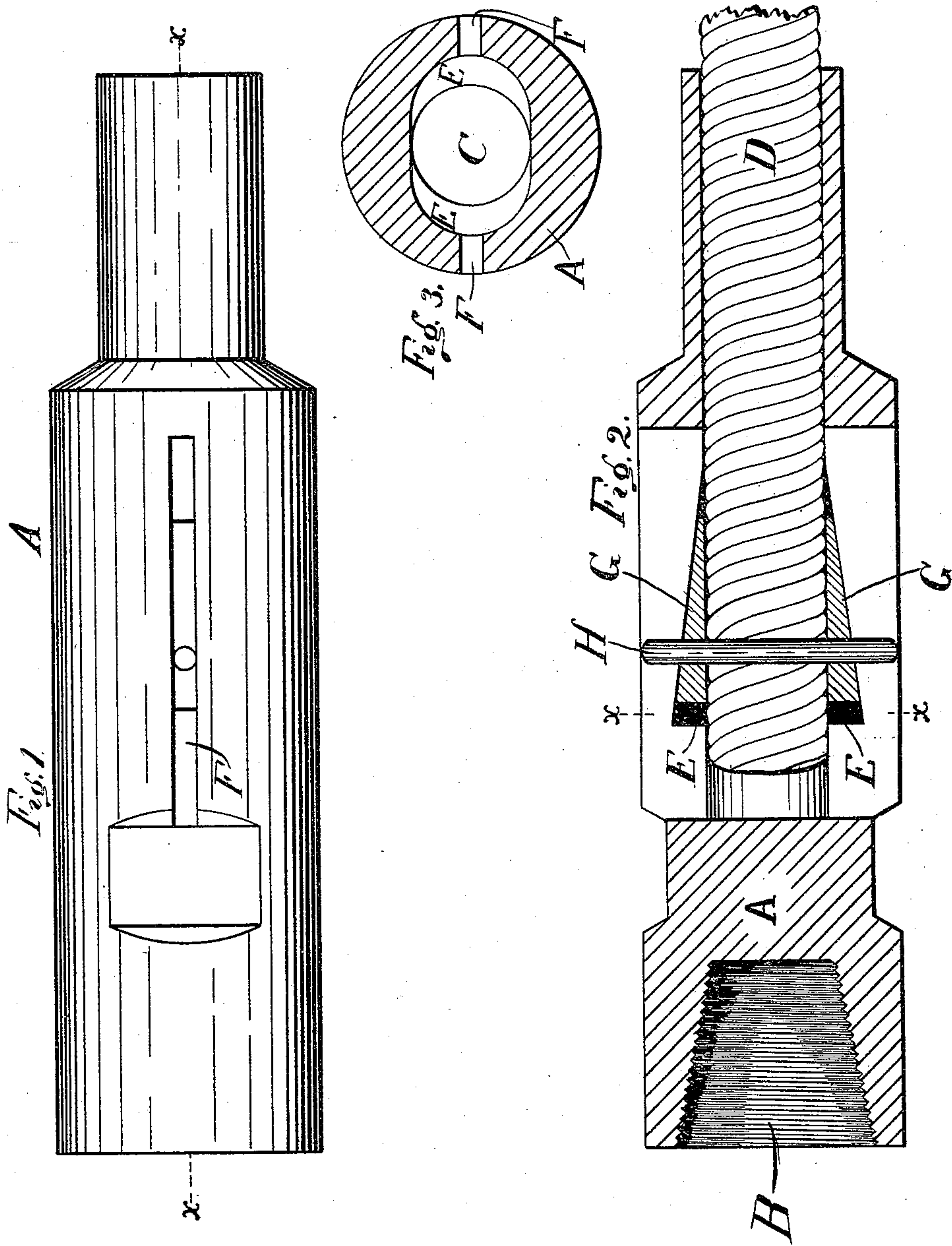


(No Model.)

W. D. CROSS & J. P. REAGAN.
ROPE SOCKET.

No. 430,176.

Patented June 17, 1890.



Witnesses
C. J. Cross
N. S. Sprague

Inventor.
Walter D. Cross }
John P. Reagan }
By *Osborne* Attorney

UNITED STATES PATENT OFFICE.

WALTER D. CROSS AND JOHN P. REAGAN, OF LIMA, OHIO.

ROPE-SOCKET.

SPECIFICATION forming part of Letters Patent No. 430,176, dated June 17, 1890.

Application filed February 24, 1890. Serial No. 341,586. (No model.)

To all whom it may concern:

Be it known that we, WALTER D. CROSS and JOHN P. REAGAN, citizens of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Rope-Sockets, of which the following, with the accompanying drawings, is a specification.

This invention relates to certain new and useful improvements in rope-sockets.

The invention consists in the peculiar formation of the enlarged recess designed to receive the clamping-wedges and whereby greater strength is given to the socket without increasing its diameter, all as more fully hereinafter set forth, and pointed out in the claims.

Figure 1 is a side elevation of our improved socket. Fig. 2 is a central longitudinal section on the line $x x$, Fig. 1. Fig. 3 is a cross-section on line $x x$, Fig. 2.

In the accompanying drawings, which form a part of this specification, A represents a rope-socket, in one end of which is formed an interiorly-threaded socket B, designed to engage with one end of a drill-rod, such as is employed in sinking oil or other wells.

The opposite end of the socket A is formed with an axial bore C, adapted to receive the end of a rope D. The inner portion of this bore C is enlarged at points diametrically opposite each other, the walls of such enlargement being formed upon lines diverging from the axial bore to the base of the enlargement, as seen in Fig. 2, thus forming recesses E, enlarging from the central bore to their bases substantially upon the lines of a gradually-increasing ellipse, as seen in Fig. 3. Slots F communicate through the walls of the socket with these recesses.

G represent wedges that are substantially crescent in cross-section, and they are introduced through the bore C to the recesses E. The end of the rope is preferably "wound," so as to the more easily introduce it into the socket between the wedges G, which are then pushed toward the contracting ends of the

recesses by any suitable tool inserted through the slots F, and they are thus compelled to compress the rope between them. A pin H should then be inserted through the wedges and the rope, Fig. 2, to secure the wedges and the rope in their relative positions. The greater the strain upon the rope the more firmly it is clamped by the wedges as they are drawn up the inclined walls of the recesses E.

We are aware that rope-sockets of this character have been invented and patented; but in all of the sockets of which we have any knowledge the enlarged recess of the socket designed for the reception of the wedges is formed upon the lines of true circles. This has so materially cut away the body of the socket as to leave but a comparatively thin wall at the base of the recess, and has so greatly impaired its strength that it frequently breaks at that point, allowing the drilling-tool and connections to drop into the well, from which it is very difficult to recover them. Our improvement therefore primarily consists in so constructing the enlarged recesses diametrically opposite each other as to obtain the greatest possible strength without increasing the external diameter of the socket-body. A correct idea of our invention can be had upon reference to Fig. 3.

What we claim as our invention is—

1. A rope-socket adapted to be removably secured at one end to a drill-rod and axially bored at its opposite end the greater portion of its length, said axial bore terminating in enlarged recesses diametrically opposite each other and gradually increasing in size toward the bottom elliptical in cross-section, slots communicating through the walls of the socket with said recesses, and crescent-shaped wedges adapted to be received within said recesses, in combination with a pin engaging said wedges and slots, substantially as and for the purposes described.

2. A rope-socket axially bored to receive a rope's end, said axial bore being enlarged upon diametrically-opposite sides and upon the lines of gradually-enlarging ellipses,

slots communicating with said elliptical recesses, and crescent-shaped wedges slidingly engaging with said recesses and adapted to partially embrace the end of the rope, in
5 combination with a pin adapted to secure said wedges and rope together, substantially as described.

In testimony whereof we affix our signa-

tures, in presence of two witnesses, this 5th day of February, 1890.

WALTER D. CROSS.
JOHN P. REAGAN.

Witnesses:

ED SHERIDAN,
J. C. RIDENOUR.