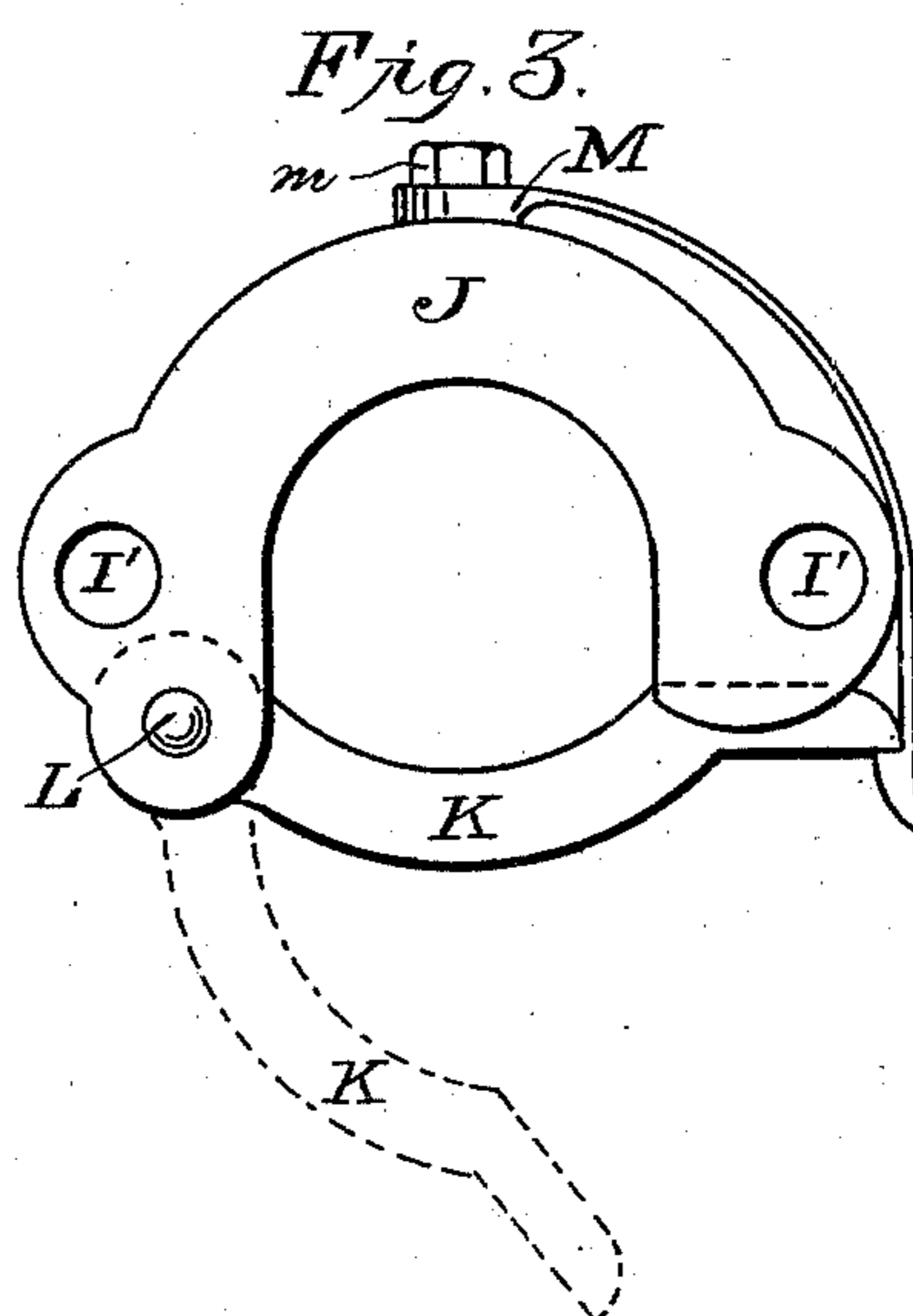
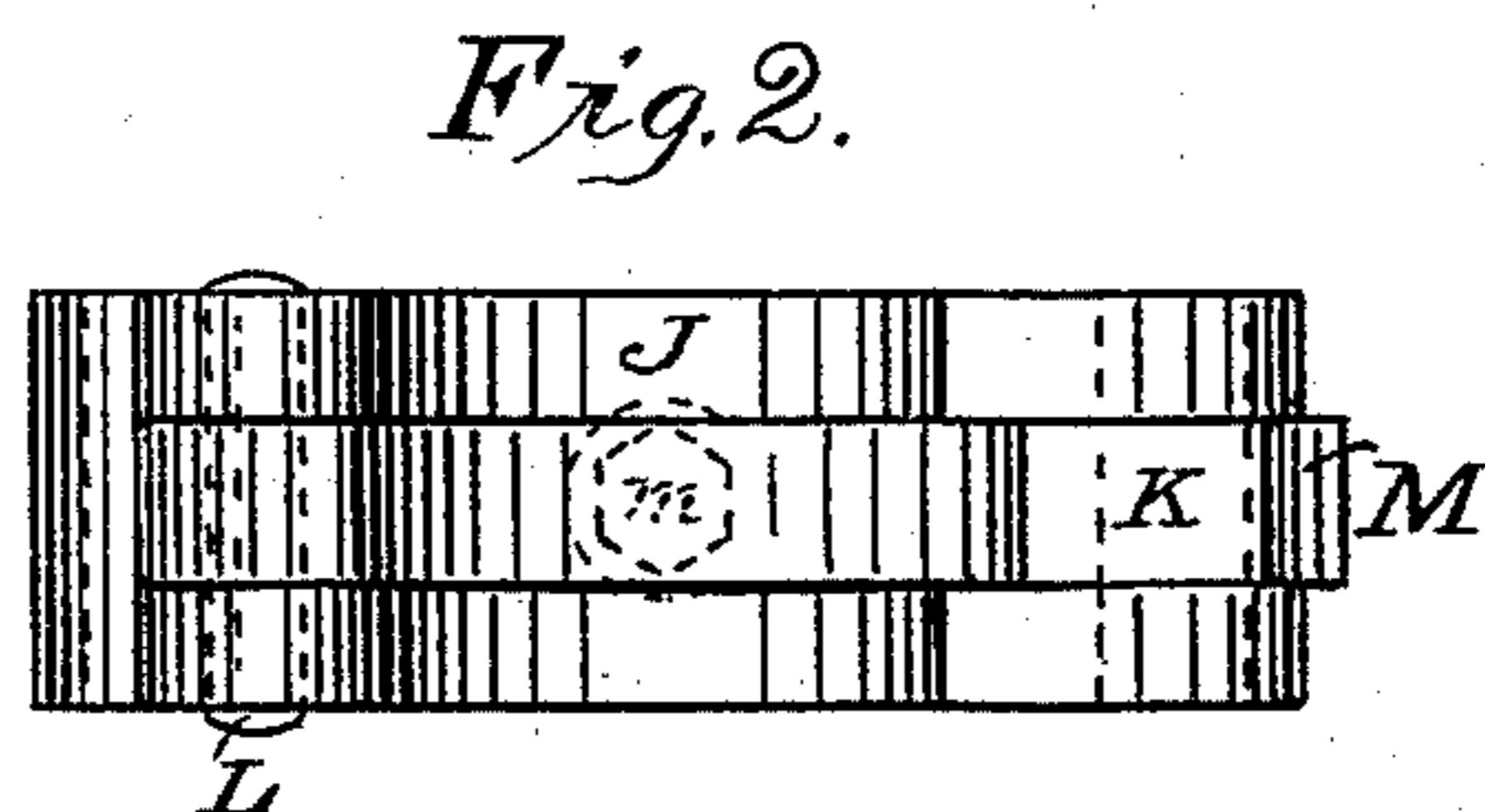
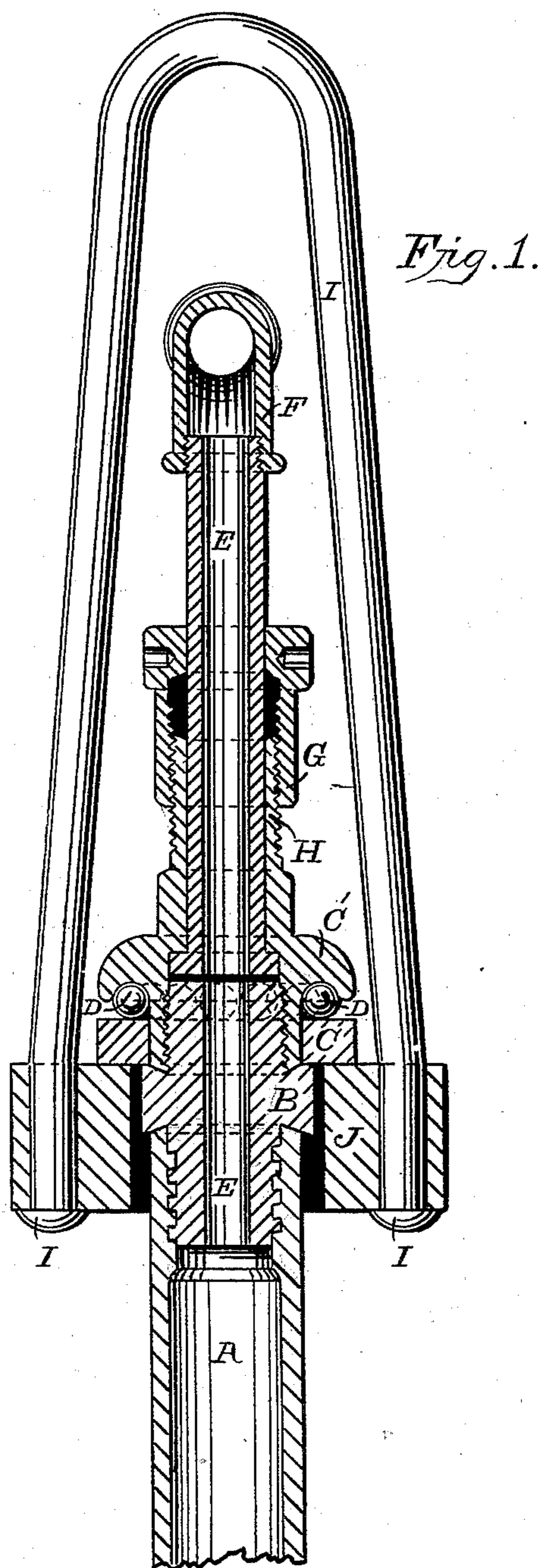


(No Model.)

A. BALL.  
TOOL FOR RAISING DRILL RODS.

No. 426,613.

Patented Apr. 29, 1890.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

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## TOOL FOR RAISING DRILL-RODS.

SPECIFICATION forming part of Letters Patent No. 426,613, dated April 29, 1890.

Application filed May 2, 1889. Serial No. 309,322. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT BALL, a citizen of the United States, residing at Claremont, in the county of Sullivan and State of New Hampshire, have invented certain new and useful Improvements in Tools for Raising Drill-Tubes; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved tool for raising and lowering drill-tubes, more particularly in connection with diamond rock-boring drills; and my object is to obtain a convenient device whereby to pull up or lower the drill-tubes without ceasing to revolve them and without stopping the pumping of water through the tubes, and whereby the lifting parts can be easily removed when not in use.

For a more thorough understanding of my invention in detail attention is invited to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of the lifting-clevis and swivel and of the upper end of the drill-tube to which they are attached. Fig. 2 is a front view of the grasping part of the clevis, and Fig. 3 is a top view of the same.

In the different drawings like letters refer to corresponding parts.

A represents the upper end of the drill-tube.

B represents the coupling which connects the water-swivel to the drill-tube.

C C' are anti-friction plates, between which are a number of anti-friction balls D.

E E is the water-passage through the swivel attachment, and F the elbow for the reception of the water-pipe from the pump.

G is a packing-nut, which screws upon the threaded end H of the anti-friction plate C'.

I is the lifting-bail of the clevis, which passes through the holes I', Fig. 3, of the clevis J.

K, Fig. 3, is the clevis-latch, which hinges upon the pin L, and M, Figs. 2 and 3, is the

latch-spring, which is held by the screw-nut m. By means of this latch the clevis can be instantaneously removed when not wanted for raising or lowering the tubes and replaced when wanted. When the clevis is in place, there is free space between it and the drill tube or coupling, and the bearing is against the friction-balls D.

It is oftentimes very important to continue the operation of the pump while pulling up the drill-tubes, so as by keeping a stream of water forced down through the tubes to keep the tubes from becoming clogged and bound. Sometimes if this cannot be done and the drill-tube kept at the same time revolving, it may become impossible to pull it out, and tube separates and the great damage follows.

It is obvious that in the place of the spring to hold the clevis-latch a pin or button could be used, or other equivalent device, or the body J of the clevis could be of different shape.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is as follows:

1. In combination with drill-tube A and suitable coupling B to the plate C' and with the plate C, having a lifting-bearing against a series of anti-friction balls between it and the plate C', and with water-passage E to said drill-tube through said plates, and connected with an elbow F and having a suitable packing G, the hinged two-part lifting-clevis J with bail I, and having a lifting-bearing against said anti-friction balls through the plates C C', substantially as and for the purposes described.

2. A tool for raising drill-tubes, comprising the main tube A, a coupling B above the same, and engaging therewith, a plate C', having a grooved shoulder and engaging with the coupling B, a collar-plate C around the lower end of the plate C', friction-rollers D D, working in said groove and against the plate C, tube E within the plate C'', and with its flange bearing against a corresponding shoulder in the same, the elbow F engaging with the upper end of the tube E, a pack-

ing and packing-nut G at the upper end of the plate C' and surrounding the tube E, a divided clevis J, having a spring-catch, and engaging with the plate C', and a hole extending up from said clevis above the elbow E, all combined and arranged substantially as herein set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT BALL.

Witnesses:

FRANK A. BALL,  
GEO. O. BALL.