

(No Model.)

2 Sheets—Sheet 1.

J. CHANTRELL.
BRACE CHUCK.

No. 328,648.

Patented Oct. 20, 1885.

Fig. 1.

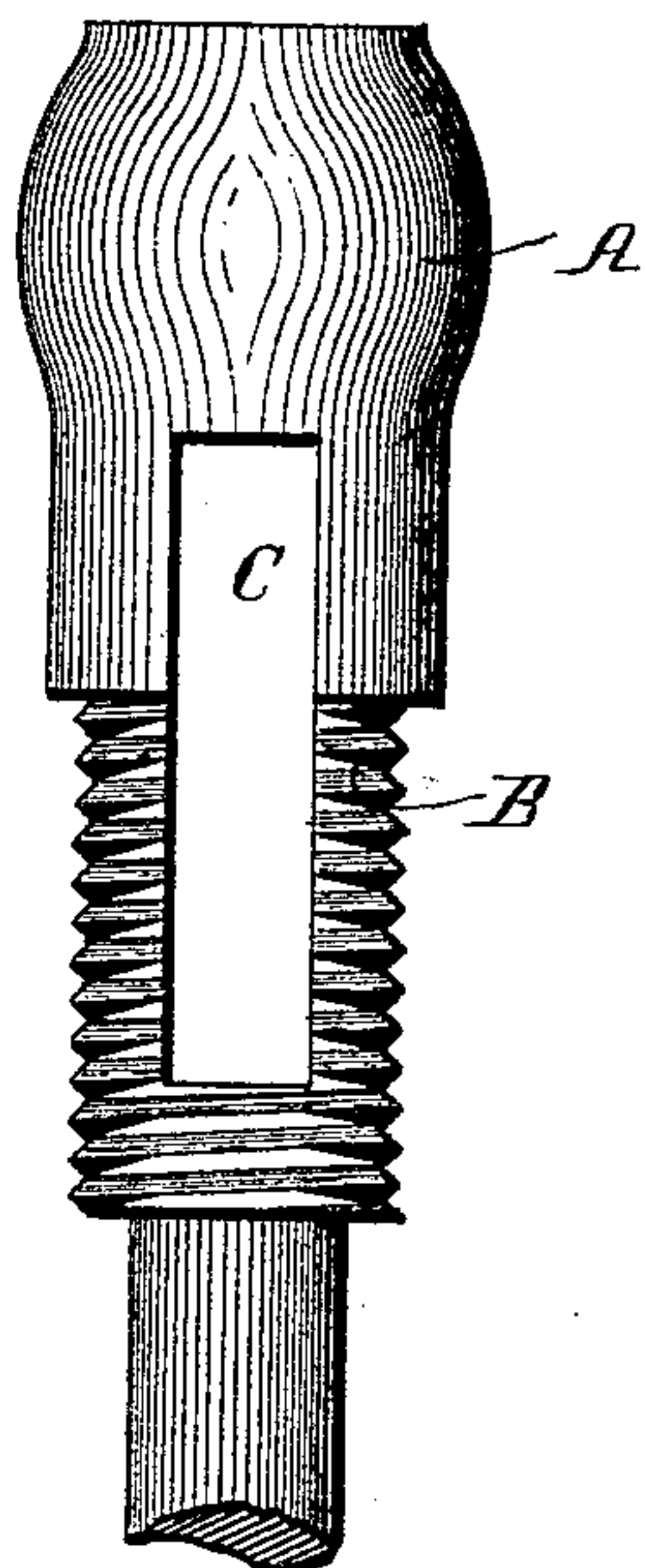
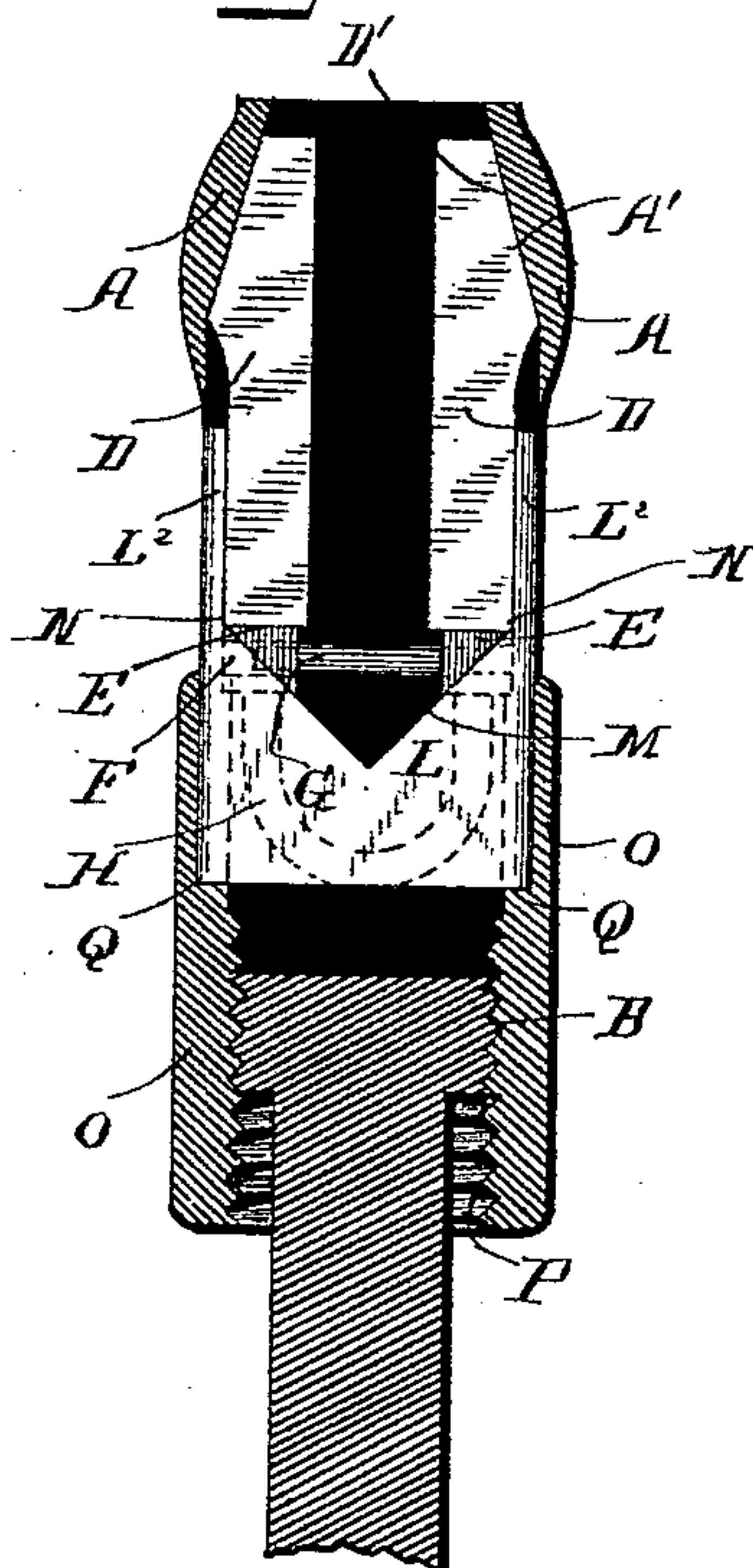


Fig. 2.



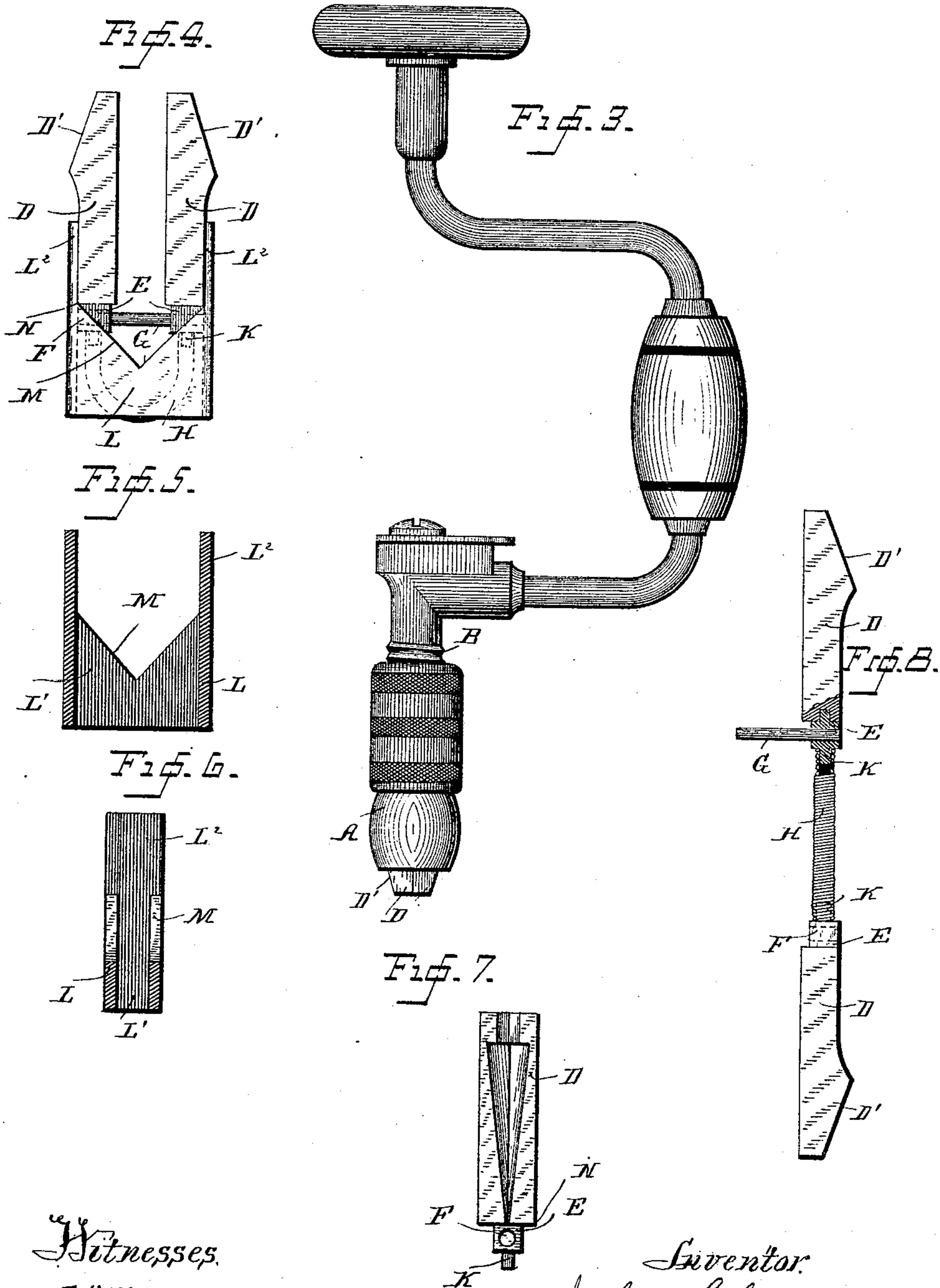
Witnesses
Wm. A. Jones.
J. S. Wooster

Inventor,
John Chantrell
By
A. M. Wooster
Atty.

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UNITED STATES PATENT OFFICE.

JOHN CHANTRELL, OF BRIDGEPORT, CONNECTICUT.

BRACE-CHUCK.

SPECIFICATION forming part of Letters Patent No. 328,648, dated October 20, 1885.

Application filed March 9, 1885. Serial No. 153,144. (No model.)

To all whom it may concern:

Be it known that I, JOHN CHANTRELL, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Brace-Chucks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to brace-chucks of the class illustrated in my former patent, No. 284,275, granted September 4, 1883, and has for its object to simplify and improve their construction—to produce, in brief, a chuck which shall be simple in construction, economical in cost, and which will hold a bit or drill so firmly as to render its becoming loosened in use a practical impossibility.

The special feature of my present invention is that I provide for holding the bases of the jaws apart when in their opened position and hold the faces of the jaws parallel, so that when open there is no difficulty in inserting the shank of the bit or drill to the base of the jaws, and when tightened up the entire face of each jaw acts to grip it. With this end in view I have devised the simple and novel construction which I will now describe, referring by letters to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of the chuck with the jaws, follower, and sleeve removed; Fig. 2, a central section of the chuck and sleeve with the jaws and follower in elevation; Fig. 3, an elevation of the brace and chuck complete; Fig. 4, a view, full size, of the jaws and follower in operative position, the spring being shown in dotted lines. Figs. 5 and 6 are respectively central longitudinal and central transverse sections of the follower; Fig. 7, a face view of one of the jaws, and Fig. 8 an elevation of the jaws detached.

Similar letters indicate like parts in all the figures of the drawings.

A represents the head, which is provided with inclines A', an external screw-thread, B, upon its shank, and a central opening, C.

D D are the jaws, of ordinary construction, preferably having inclines D' on their backs. At the bases of the jaws are reduced portions E, one of which is provided with a hole, F,

extending through it from front to back, and the other jaw with a pin, G, which is tapped into it and extends across when in operative position and engages hole F in the opposite jaw, said hole being large enough to permit it to slide freely therein.

The bases of the two jaws are connected by a bow-spring, H. I preferably use for this purpose a coil-spring, as shown in Fig. 8, and as a simple means of attachment provide a lug, K, at the base of each jaw, upon which the opposite ends of the coil-spring are turned, thus connecting the parts together without additional devices, the lugs being made sufficiently large so that the coils of the spring grasp them firmly.

I usually make the entire jaw in one piece, either cast or drop-pressed, although it may be made in two parts, as shown in Fig. 8, if preferred. In this form the reduced portion E is provided with a lug upon each side, one of which is tapped into the base of the jaw proper.

L is the follower, having an opening, L', through the center, as shown in Figs. 5 and 6. The ends of the follower extend above the sides and form supports L² for the backs of the jaws. The top of each side consists of two inclines, M, which extend in opposite directions from the center upward and outward to where they join the ends. In use, the reduced portions and the spring drop down into the open space in the follower, as shown in Fig. 4, leaving angular shoulders N upon the jaws on opposite sides of the reduced portions which ride upon the inclines.

O is the sleeve, which is provided with an internal screw-thread, P, corresponding with thread B upon the shank. Above the screw-thread the internal diameter of the sleeve is increased, leaving a shoulder, Q, upon which the follower rests.

The parts are assembled as follows: The follower, with the jaws in place, as in Fig. 4, is placed in the opening C in the head and the sleeve turned up until the screw-threads engage. The brace is then ready for use.

The action of spring H is clearly illustrated in Figs. 4 and 8. Its tendency being to straighten out, it of course separates the bases of the jaws and holds them in their normal opened position—i. e., perfectly parallel, as shown in

Figs. 2 and 4. I am thus enabled to insert the shank of the bit or drill clear down to the base of the jaws without having to pry the jaws open. As stated above, pin G, which is
5 tapped into one of the jaws, slides freely in hole F in the other jaw and acts to prevent either jaw from becoming displaced vertically. The particular shape of the groove in the face of the jaws forms no part of my present invention. Fig. 7 shows the ordinary half-socket
10 for holding a bit-shank. Turning now to Fig. 2, if a bit or drill having a straight shank is inserted, rotation of the sleeve lifts the follower, causing inclines D' upon the jaws to ride up inclines A' on the head, and shoulders N
15 to ride down inclines M upon the follower, thus closing the entire length of the jaws firmly upon the shank of the bit or drill. A quick turn of the sleeve will now hold the bit or drill so tightly that it cannot be drawn out in use.
20 I have found in practice that with this construction I can firmly hold a twist-drill. Should the shank of the bit or drill taper from the upper end downward and inward after the inclines upon the head have caused the upper
25 end of the jaws to grasp it, the shoulders at the bases of the jaws will continue to ride down the inclines upon the follower until the entire length of both jaws bears firmly upon the shank, the spring yielding as much as may be
30 required. Should the largest portion of the shank of the bit or drill come below the center of the jaws after their lower ends have closed upon it, the inclines upon the head will force the upper ends of the jaws against it, so
35 that whatever may be the shape of the shank of the bit or drill the jaws are sure to grasp it firmly.

40 It will of course be understood that the details of construction may be varied within reasonable limits without departing from the spirit of my invention.

I claim—

1. The jaws having shoulders at their lower ends and connected by a bowed coil-spring, 45 which acts to hold their bases apart, in combination with a follower having inclines upon which the shoulders ride, the head having inclines engaged by the outer ends of the jaws, and a sleeve adapted to lift the follower, said
50 inclines and jaws being so arranged relatively to each other that the jaws are held parallel with each other as they are opened and closed.

2. The head having inclines A', the follower having inclines M, and a rotating sleeve 55 adapted to lift the follower, in combination with the jaws whose opposite ends engage the said inclines, and a coiled spring whose ends are connected to the jaws, respectively, whereby the bases of said jaws are held apart as
60 they move up or down the inclines.

3. The follower having an opening, L', through its center, supports L² for the jaws in their opened position, and inclines M and the head having inclines A', in combination with 65 the jaws having inclines D', reduced portions E, and angular shoulders N, a bowed coil-spring lying in said opening and connecting the bases of said jaws, and a sleeve having an internal shoulder upon which the follower
70 rests.

4. In a brace-chuck, the jaws, one of which is provided at its base with a pin, G, the other having a hole to receive said pin, whereby the jaws are held against vertical displacement, 75 and a lug, K, upon each jaw, in combination with a bowed coil-spring whose ends respectively are held by being turned upon said lugs.

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

JOHN CHANTRELL.

Witnesses:

A. M. WOOSTER,
WM. H. JONES.