

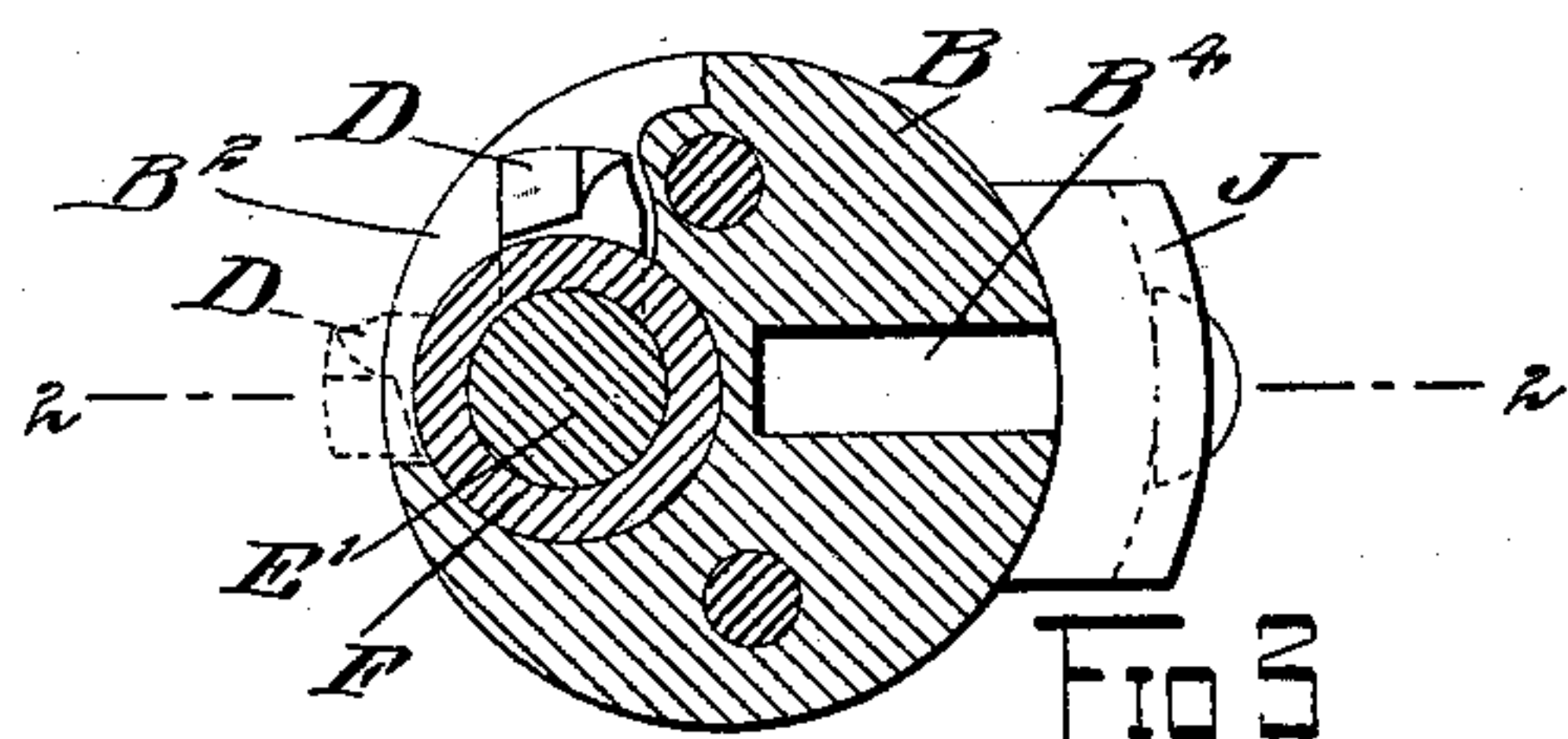
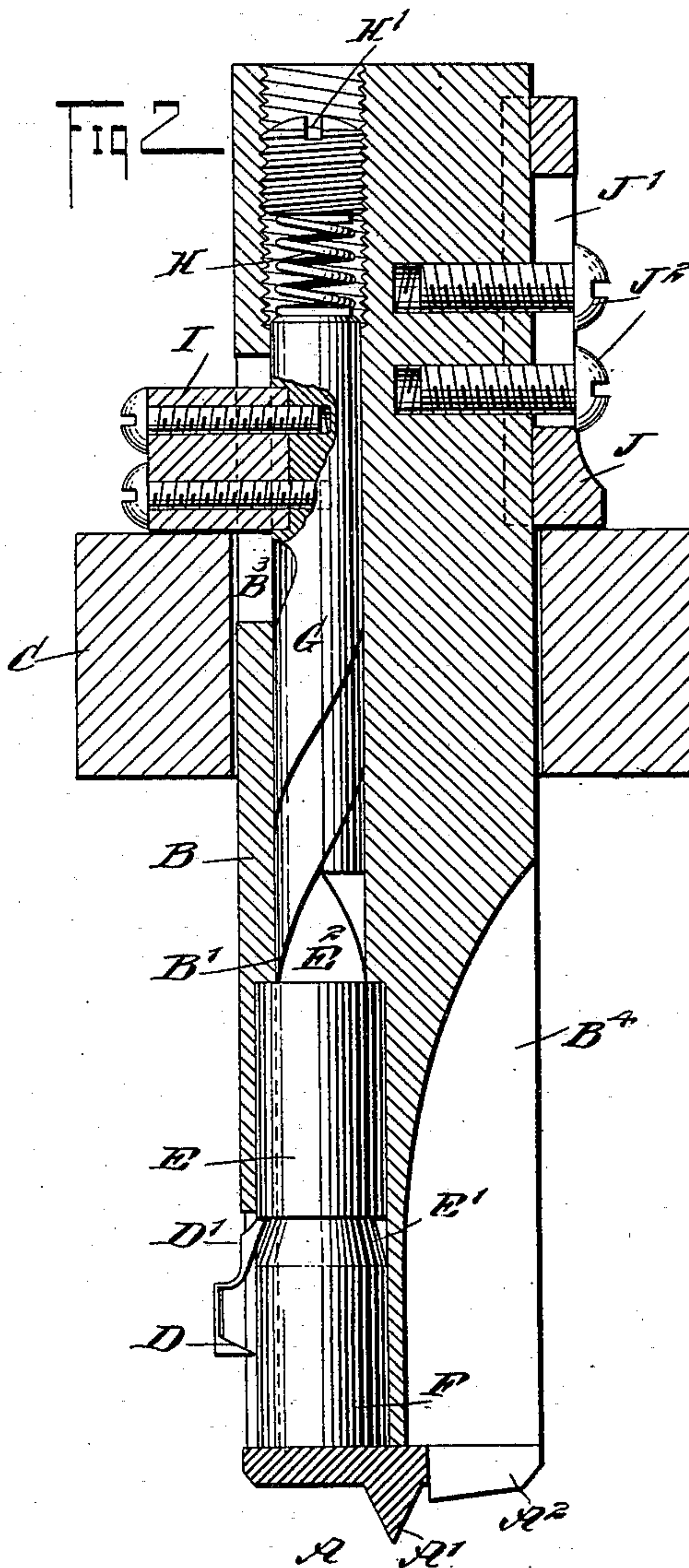
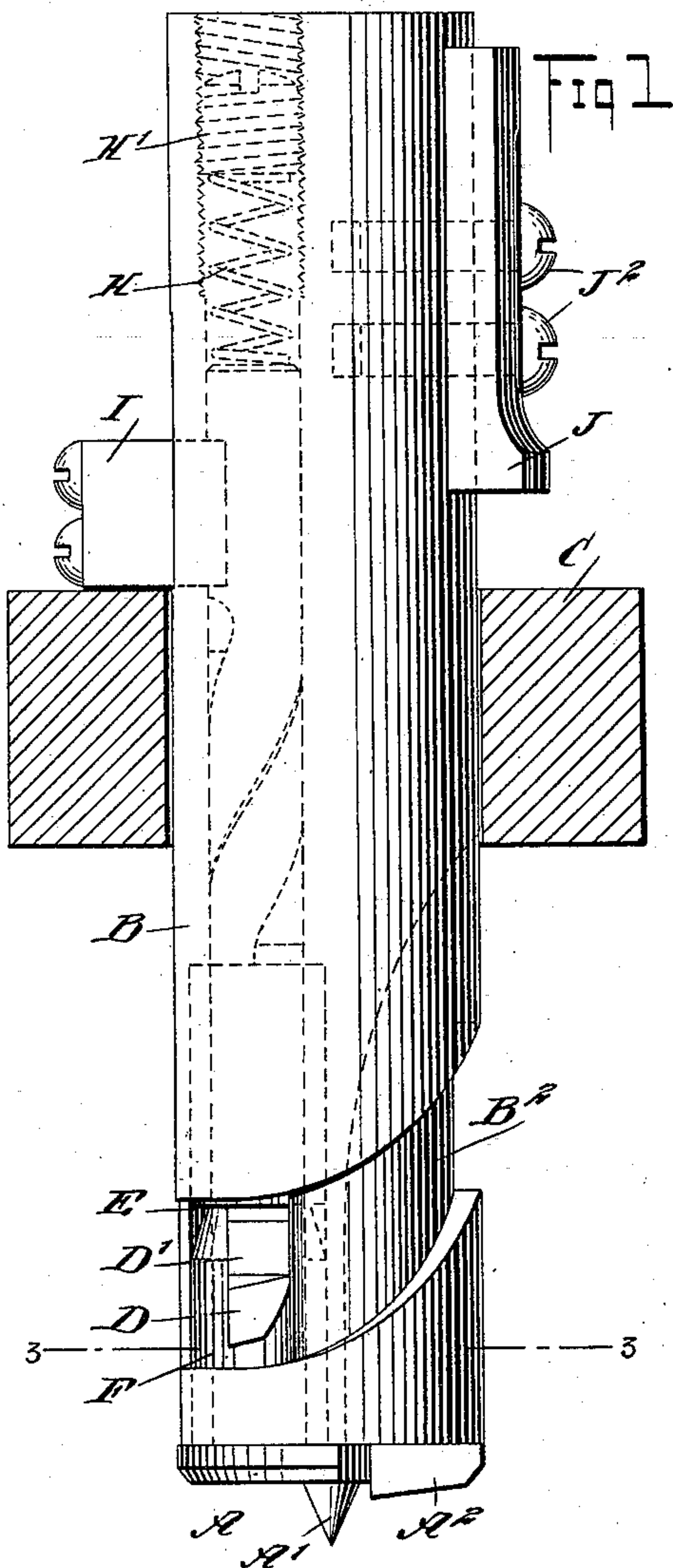
No. 637,640.

Patented Nov. 21, 1899.

L. MITCHELL.
BORING TOOL.

(Application filed Jan. 20, 1899.)

(No Model.)



WITNESSES:
John C. ...
Henry ...

INVENTOR
Loren Mitchell.
BY *Munn*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

LORON MITCHELL, OF AUGUSTA, GEORGIA.

BORING-TOOL.

SPECIFICATION forming part of Letters Patent No. 637,640, dated November 21, 1899.

Application filed January 20, 1899. Serial No. 702,786. (No model.)

To all whom it may concern:

Be it known that I, LORON MITCHELL, of Augusta, in the county of Richmond and State of Georgia, have invented a new and Improved Boring-Tool, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved boring-tool, more especially designed for boring apertures and forming recesses in the walls of the apertures.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of my invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement with the bracket in section. Fig. 2 is a sectional side elevation of the same with parts in a different position, the section being taken on the line 2 2 in Fig. 3; and Fig. 3 is an inverted plan view of the same on the line 3 3 in Fig. 1.

The improved boring-tool is provided with a bit A, having a central point A' and a cutter A², both being formed in a disk secured to the lower end of a shank B, mounted to turn and to slide in a bracket C, said shank being connected with suitable means for turning it, so as to bore an aperture.

In the shank B and somewhat at one side thereof is arranged a longitudinally-extending bore B', which leads near its lower end to a spiral groove B², in which extends an auxiliary cutter D, normally lying within the peripheral plane or surface of the shank B and the disk for the bit A, so that said cutter remains inactive until it is desired to move the auxiliary cutter gradually out of the said plane to extend beyond the peripheral surface of the shank and cut an internal annular recess in the wall of the aperture.

The auxiliary cutter D has its cutting edge shaped according to the form intended to be given to the recess or groove, and the cutter is provided with a shank D', secured to a shaft E, mounted to turn in an enlarged portion of the longitudinal bore B', the shaft having a reduced end E' journaled in a bearing F, se-

cured in the shaft B at the lower end thereof. From the shaft E extends upwardly a twisted portion E², adapted to be engaged by a twisted rod G, so that when the latter is moved up or down it imparts a rotary motion to the twisted end E² to turn the shaft E and with it the auxiliary cutter D to move the same from its normal permanent position into an active position for cutting the recess, as above described. The twisted rod G is pressed on at its upper end by a spring H, the tension of which is regulated by a set-screw H', screwing in the upper threaded end of the bore B', and on said twisted rod G is secured a lug I, extending through an elongated slot B³, leading from the bore B' to the outside of the shank B, the outer end of said lug I being adapted to engage the top of the bracket C, so that upon a further downward movement of the shank B the lug I imparts a sliding motion to the rod G, so as to rotate the shaft E and move the cutter D into an outermost position. When this takes place, a stop J, secured on the upper end of the shank B, comes in contact with the bracket C to limit the outward-swinging motion of the cutter D and hold the latter stationary until the recess is finally cut in the wall of the aperture bored by the bit A. The stop J is adjustably held on the shank B, and for this purpose the said stop J is provided with an elongated slot J', through which pass the fastening-screws J² for holding the stop in position. When the screws J² are loosened, the stop may be moved up or down until the desired position is reached, when the screws are screwed up to fasten the stop in place.

When the tool is used and the shank B is rotated to bore an aperture in the cross-arm of a telegraph-pole by the bit A and the lug I finally comes in contact with the fixed bracket C and causes the auxiliary cutter D to swing outward, then said cutter upon a further rotation of the shank B cuts an annular recess or groove in the wall of the aperture already made by the bit A, the shavings passing through the spiral groove B² into a longitudinal slot B⁴, into which also pass the shavings from the cutting edge A² of the bit A. When the recess has been finished and the shank B is drawn upward, then the spring H moves the twisted rod G to its former position to rotate

the shaft E in the inverse direction, so that the cutter D swings back into the groove B²—that is, within the peripheral surface of the shank—to permit of drawing the latter out of the aperture bored in the cross-arm.

From the foregoing it will be seen that the device is very simple and durable in construction and enables the operator to bore the aperture, as well as the annular groove, in the wall of the aperture at one and the same time.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A boring-tool comprising a bit, a shank for the bit, an eccentrically-mounted twisted shaft in said shank and carrying an auxiliary cutter and a twisted rod fitted to slide in said shank and connected with the twisted shaft whereby the auxiliary cutter will be turned in and out of operative position when the said rod is slid, as set forth.

2. A boring-tool comprising a shank carrying a bit and formed with an eccentric longitudinal bore, a twisted shaft mounted to rotate in said bore, an auxiliary cutter connected with said shaft, a twisted rod fitted to move up and down in said bore and engaging the said shaft whereby the longitudinal movement of said rod will rotate said shaft, and a spring normally pressing said rod downwardly, as set forth.

3. A boring-tool comprising a shank carrying a bit, a shaft mounted to turn in a longitudinal bore in the shank and having a twisted end, an auxiliary cutter carried by said shaft, a twisted rod in said bore and engaging the

twisted end of said shaft, the said rod being formed with a lug, a bracket on said shank and arranged to engage said lug to move the rod, a spring in the bore and pressing on the upper end of said rod, and a nut screwing in said bore above the spring and arranged to regulate the tension of the latter, as set forth.

4. A boring-tool comprising a shank carrying a bit, a shaft mounted to turn in said shank and extending in a longitudinal bore in the shank, an auxiliary cutter carried by said shaft, means, substantially as described, for imparting a turning motion to said shaft, to move the cutter into and out of an active position, said means comprising a twisted end on the shaft, a twisted rod engaging said twisted end, a lug carried by the twisted rod, and a bracket engaged by said lug, as set forth.

5. A boring-tool comprising a shank carrying a bit, a shaft mounted to turn in said shank and extending in a longitudinal bore in the shank, an auxiliary cutter carried by said shaft, means, substantially as described, for imparting a turning motion to said shaft, to move the cutter into and out of an active position, said means comprising a twisted end on the shaft, a twisted rod engaging said twisted end, a lug carried by the twisted rod, a bracket engaged by said lug, and a stop on said shank, for limiting the longitudinal movement of the shank, as set forth.

LORON MITCHELL.

Witnesses:

C. V. WALKER,
C. E. DUNBAR.