

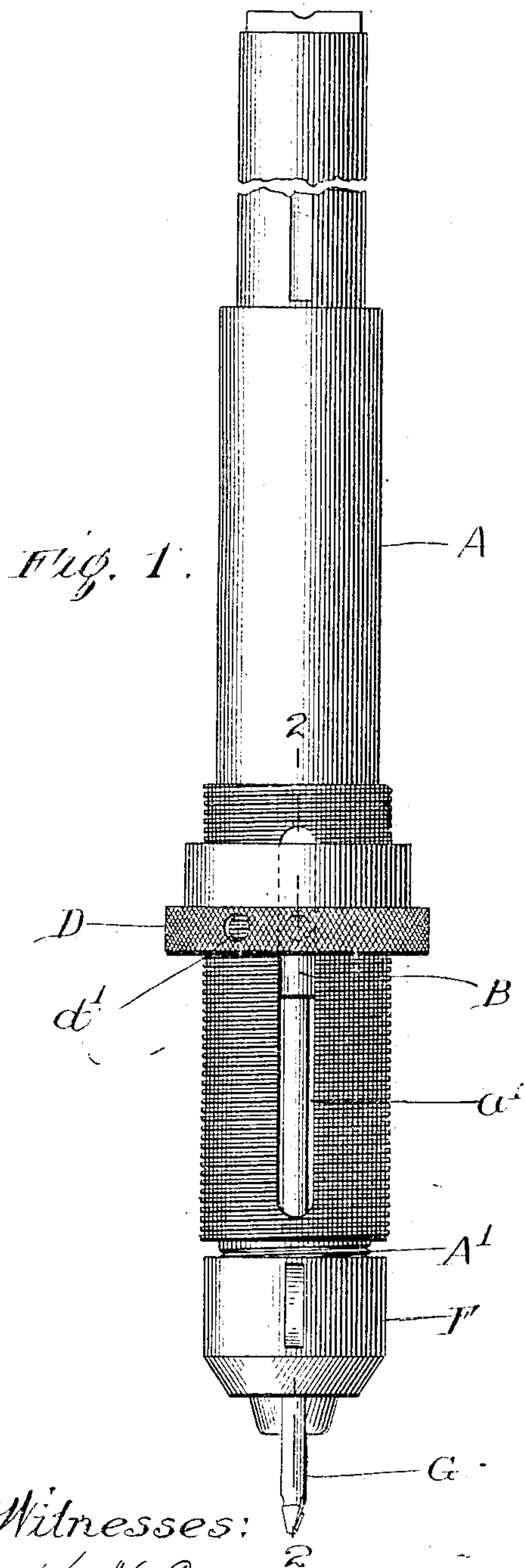
No. 819,025.

PATENTED APR. 24, 1906.

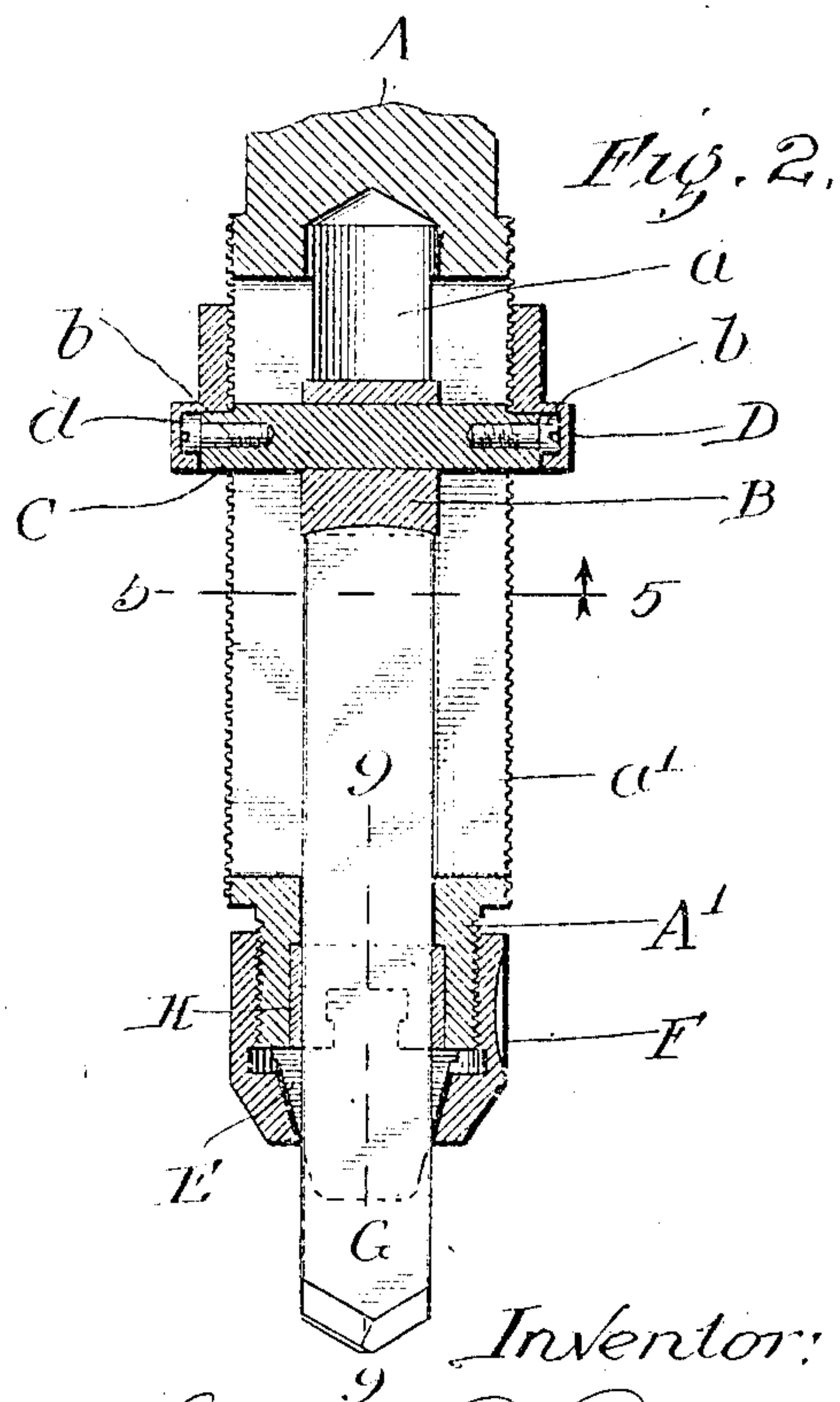
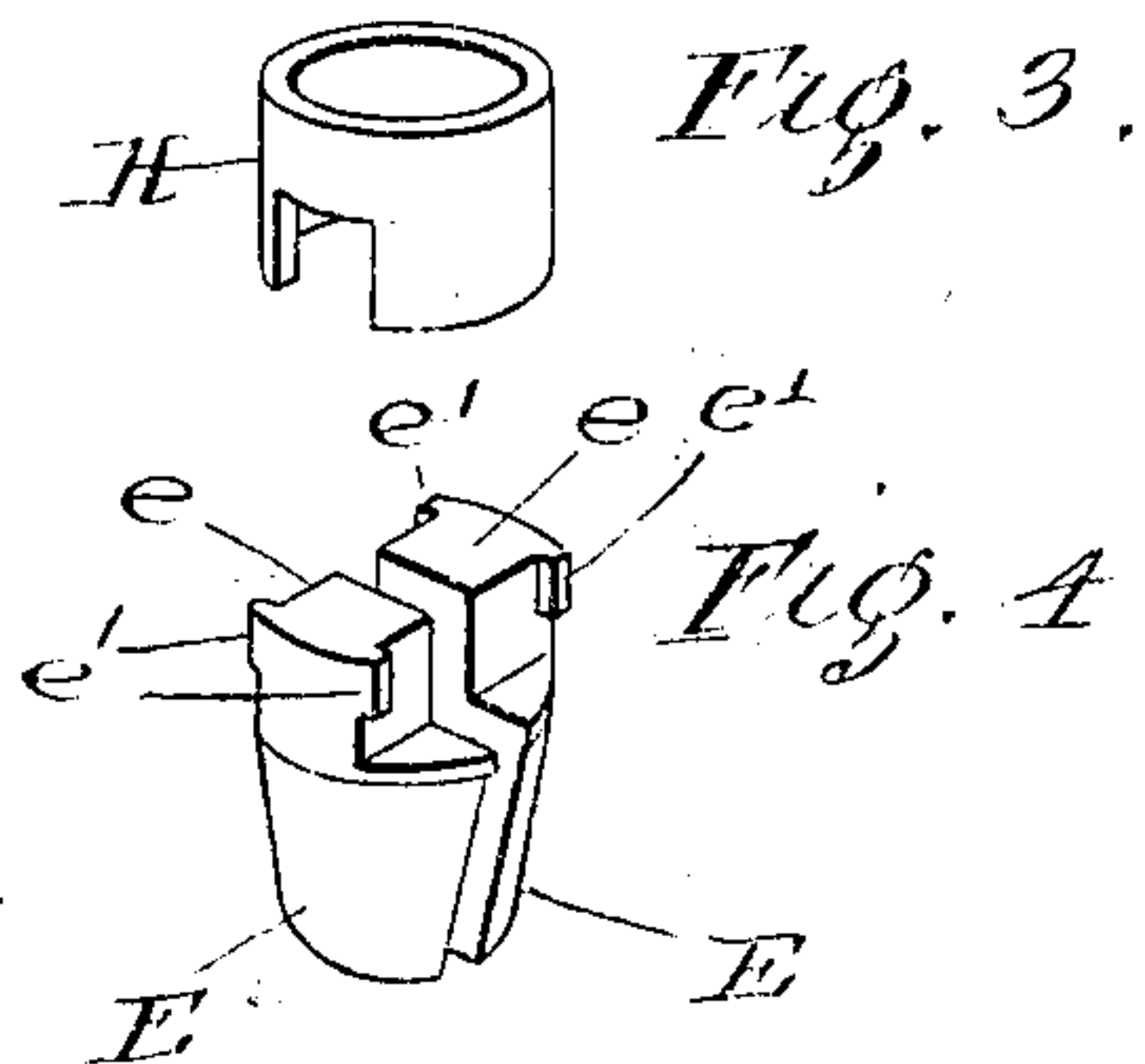
G. R. RICH.
DRILL CHUCK.

APPLICATION FILED OCT. 10, 1904.

2 SHEETS—SHEET 1.



Witnesses:
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Fig. 5.

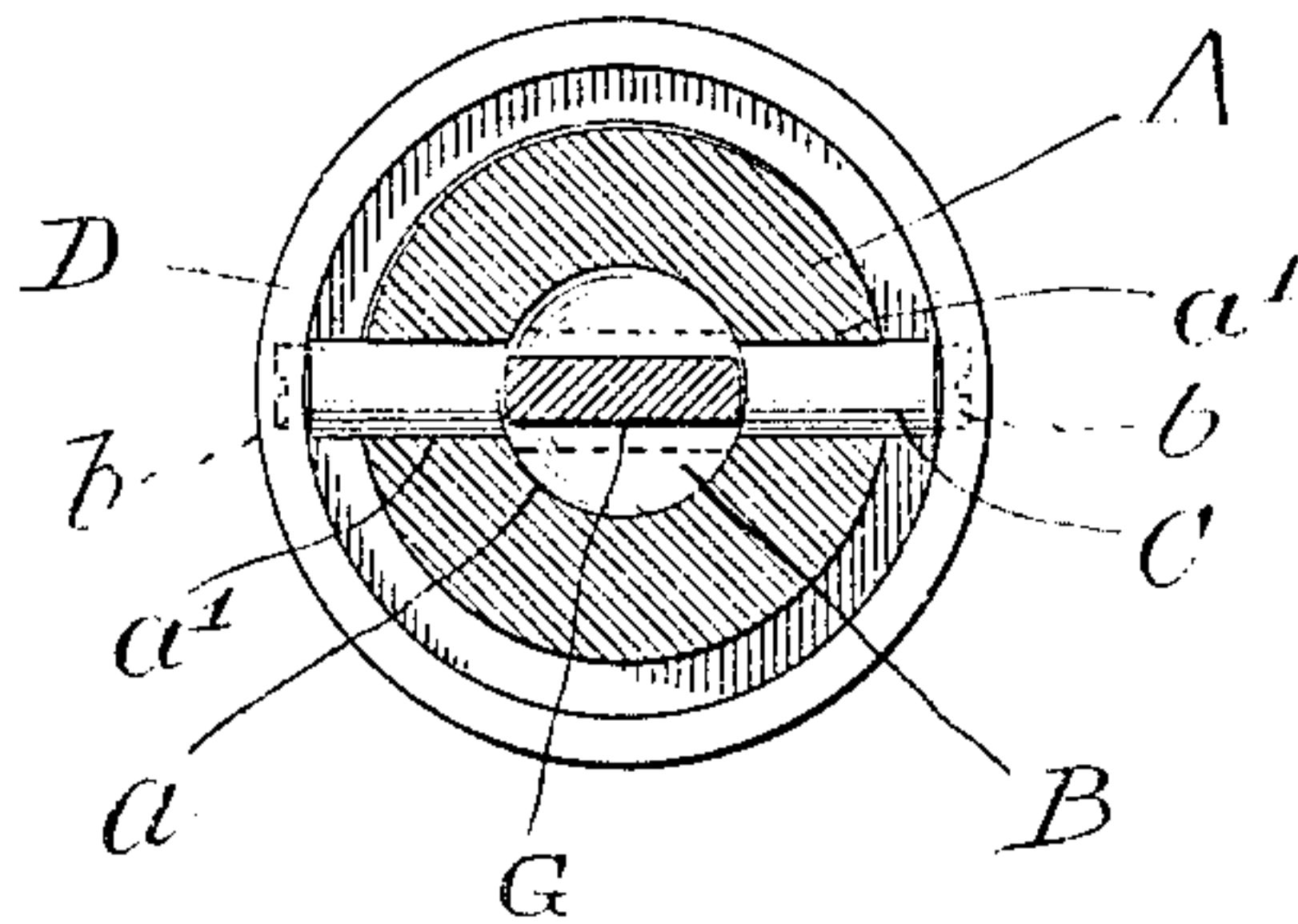


Fig. 8.

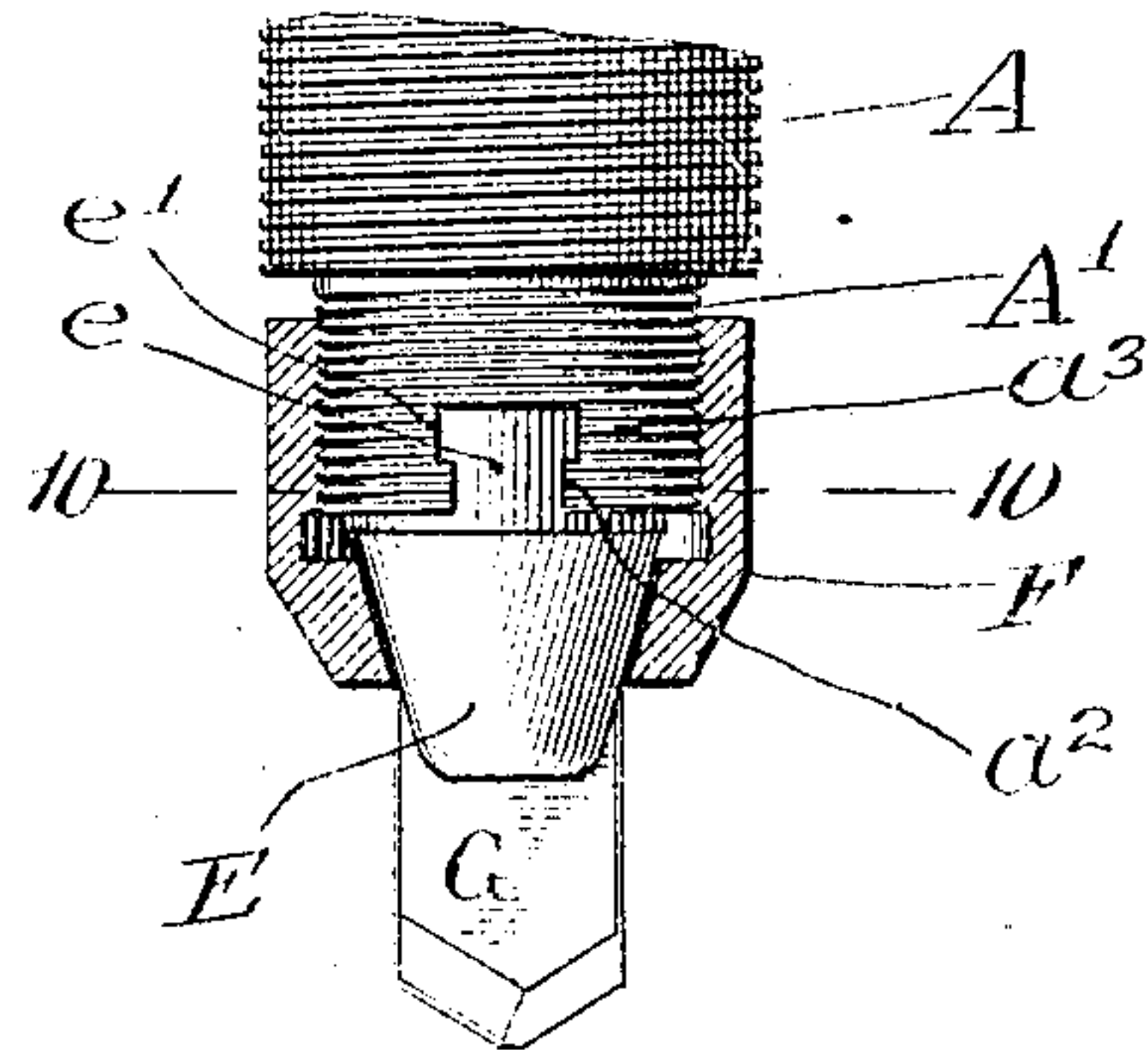


Fig. 6.

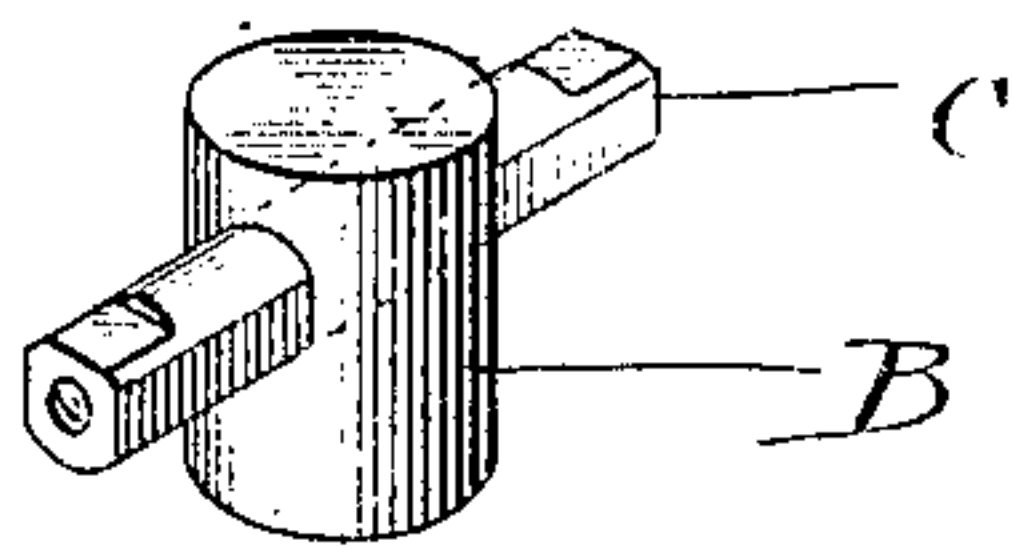


Fig. 9.

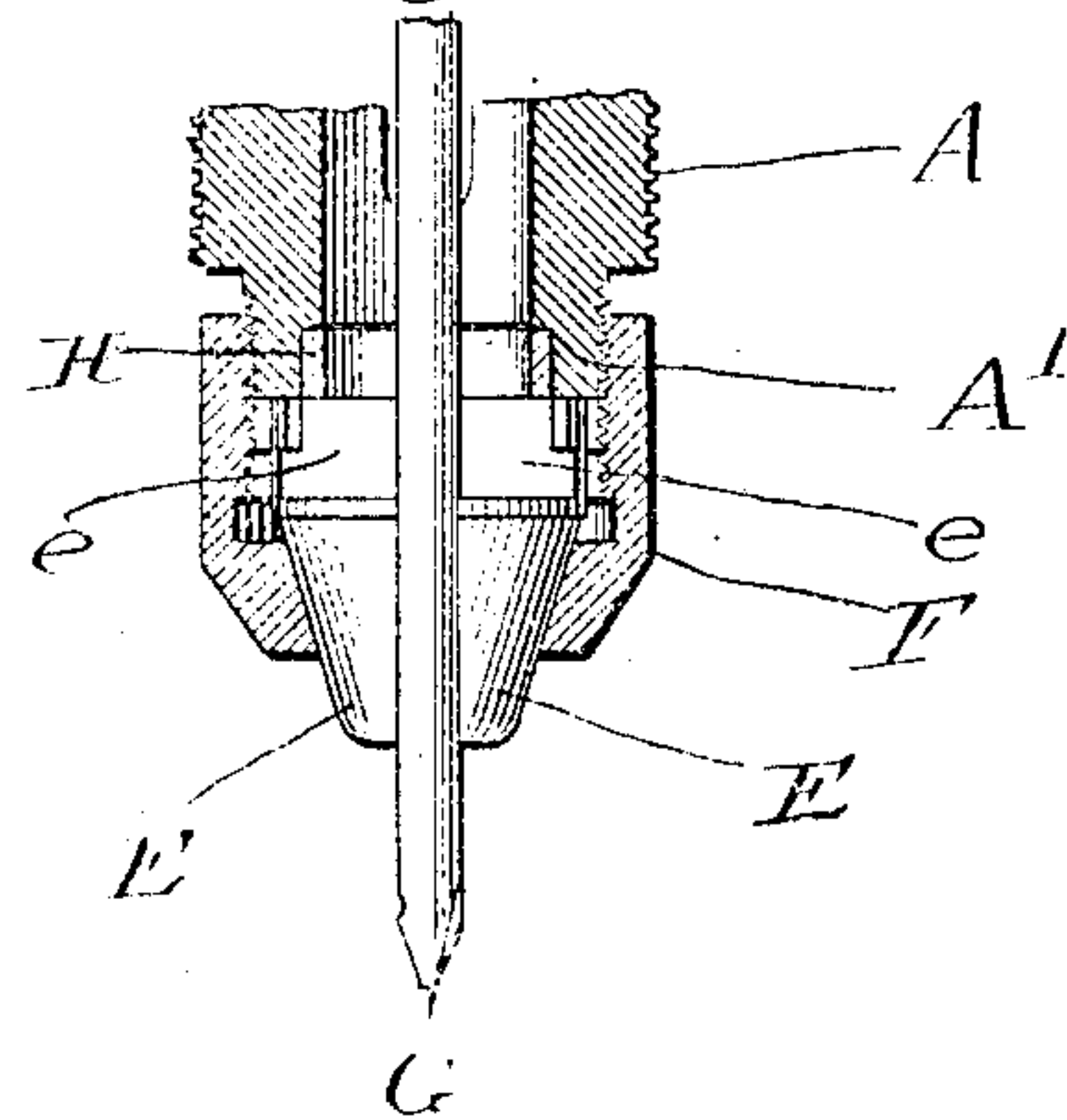


Fig. 7.

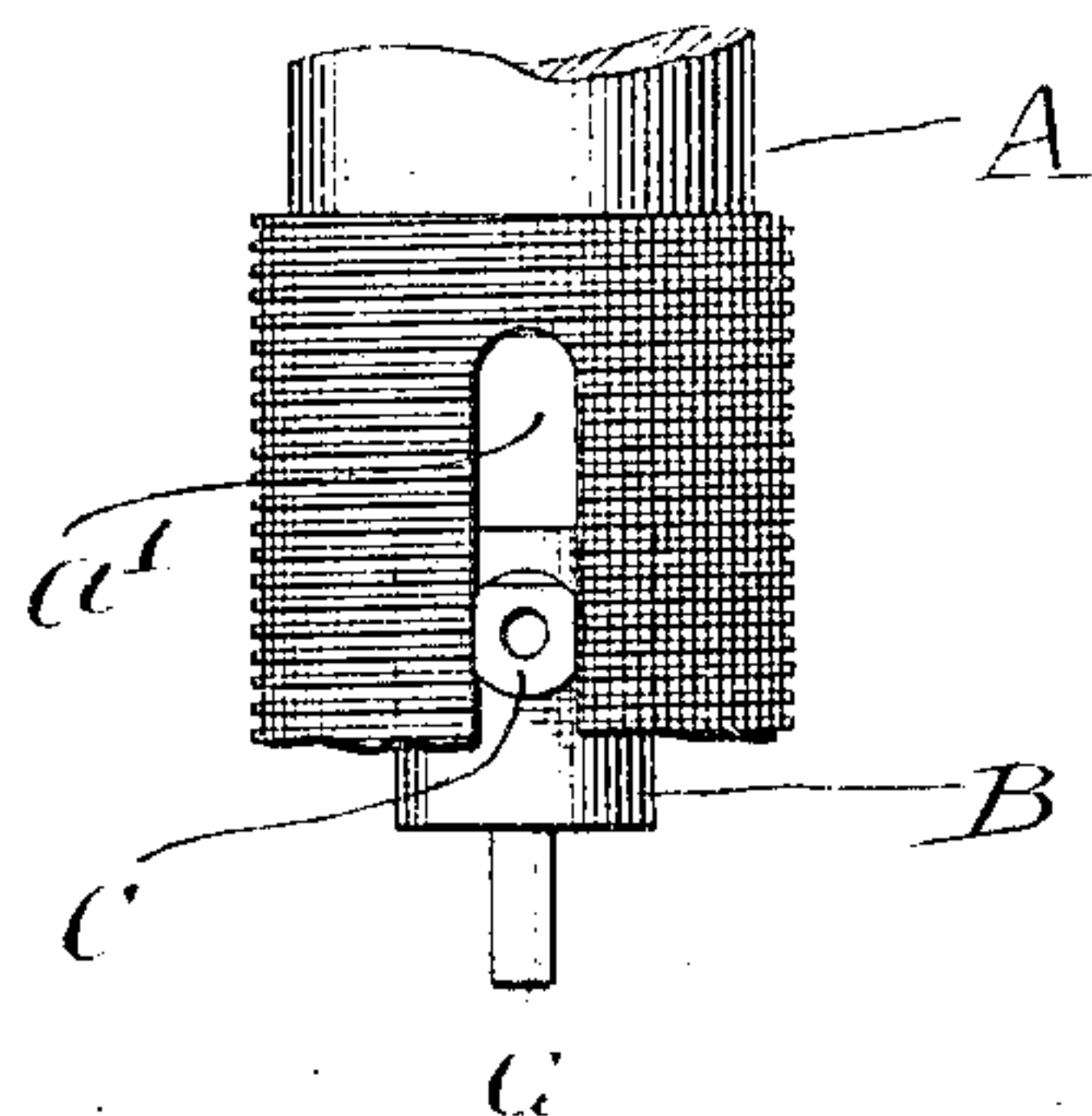
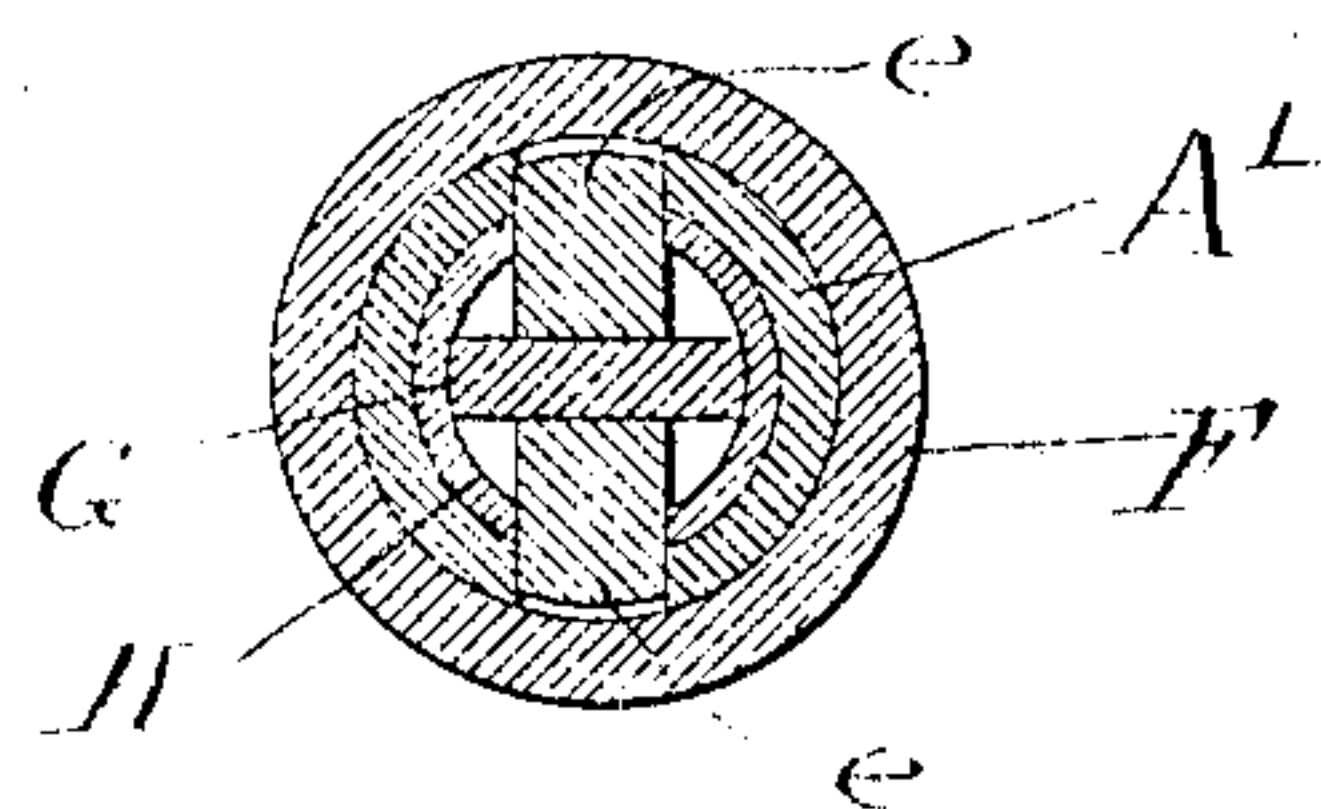


Fig. 10.



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UNITED STATES PATENT OFFICE.

GEORGE R. RICH, OF CHICAGO, ILLINOIS, ASSIGNOR TO GEO. R. RICH
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DRILL-CHUCK.

No. 819,025.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed October 10, 1904. Serial No. 1227,791.

To all whom it may concern:

Be it known that I, GEORGE R. RICH, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Drill-Chucks, of which the following is a specification.

My invention relates to certain new and useful improvements in drill-chucks; and its object is to produce a device of this class which shall have certain advantages, which will appear more fully and at large in the course of this specification.

To this end my invention consists in certain novel features of construction, which are clearly illustrated in the accompanying drawings, and described in this specification.

In the aforesaid drawings, Figure 1 is an elevation of my improved drill-chuck. Fig. 2 is a central longitudinal section in the line 2-2 of Fig. 1. Fig. 3 is a perspective view of the drill-centering bushing. Fig. 4 is a perspective view showing the chuck-jaws removed from place. Fig. 5 is a section in the line 5-5 of Fig. 2 looking in the direction of the arrow. Fig. 6 is a perspective view of the backing-block of the chuck and the cross-bar by which it is advanced. Fig. 7 is an elevation of the upper portion of the chuck, showing the backing-block and said cross-bar, the adjusting-ring being moved from place. Fig. 8 is an elevation of the lower end of a chuck, the clamping-cap being shown in central longitudinal section in the line 2-2 of Fig. 1. Fig. 9 is a section in the line 9-9 of Fig. 2, and Fig. 10 is a section in the line 10-10 of Fig. 8.

Referring to the drawings, A is the body of my improved chuck, the same being formed from a rod or bar of steel provided with a central longitudinally-extending cylindrical bore a , adapted to receive a drill. The body A is provided in its main portion with an external screw-thread, as illustrated, and has a reduced lower end A' , which is also externally screw-threaded. Within the cylindrical bore a of the body A is a cylindrical backing-block B, movable longitudinally of the chuck, and this backing-block is provided with a transverse perforation through which extends a cross-bar C, the ends of which project through a longitudinal slot a' in the body A of the chuck. The ends of this cross-bar are square, Figs. 5 and 6, so as to be guided by the sides

of the longitudinal slot a' . A ring D is threaded on the upper portion of the body A, and said ring is provided with an internal annular groove d , in which lie the heads of screws b , screwed into the ends of the cross-bar C. The ring D is provided with a perforation d' , through which said screws can be inserted. This portion of the chuck is assembled by placing the backing-block in the bore of the drill-body, inserting the cross-bar C, and bringing the ring D down over the ends of said cross-bar. The ring will pass freely over the cross-bar before the screws b are inserted. After the parts have been placed in this position the screws b are inserted and the parts of the device are firmly secured together. The backing-block can then be moved up and down the body of the drill with perfect ease by rotating the ring D.

The lower end of the chuck-body is provided with a transverse groove a^2 , the same being undercut at its upper end at a^3 . Two jaws E are provided below the lower end of the chuck-body, each of said jaws having a squared central upward projection e , which lies in the transverse groove a^2 , the main portions of the jaw tapering from top to bottom. Each of the squared upward projections is provided at its outer top corners with lugs e' , which engage with the undercut portion a^3 at the top of the transverse groove a^2 . A cap F screws up over the reduced portion A' of the chuck-body and engages with the coned surfaces on the jaws to force them together upon the drill, which is shown at G. The arrangement of the lugs e' is such that when the cap is screwed down, so as to loosen the jaws, they will swing apart by gravity, hanging upon the lugs e' . In this way the drill can very readily be removed. A bushing H is provided near the lower end of the chuck-body, which acts to center the drill G, and in practice a set of bushings of various internal diameters are furnished with a single chuck, so that drills of various sizes can be used.

It will be seen that the backing-block B is concave on its lower face and the upper end of the drill is ground to fit the curve thereof. This construction enables me to dispense with any transverse slot or the like in the backing-block to center the upper end of the drill, for the backing pressure of the drill itself forces it to the center of the concave face.

I realize that considerable variation is possible in the details of this construction without departing from the spirit of the invention, and I do not intend to limit myself to the specific form herein shown and described.

I claim as new and desire to secure by Letters Patent—

In a device of the class described, the combination with a hollow chuck-body provided with a longitudinal slot, of a backing-block longitudinally movable within the chuck, projections on the backing-block extending out through the slot, a ring on the chuck-body and engaging the projections on the

backing-block to move the same longitudinally in the chuck, jaws adapted to grasp a drill, and means for closing the jaws independently of the movement of the backing-block.

In witness whereof I have signed the above application for Letters Patent, at Chicago, in the county of Cook and State of Illinois, this 21st day of September, A. D. 1904.

GEORGE R. RICH.

Witnesses:

CHAS. O. SHERVEY,
RUSSELL WILES.