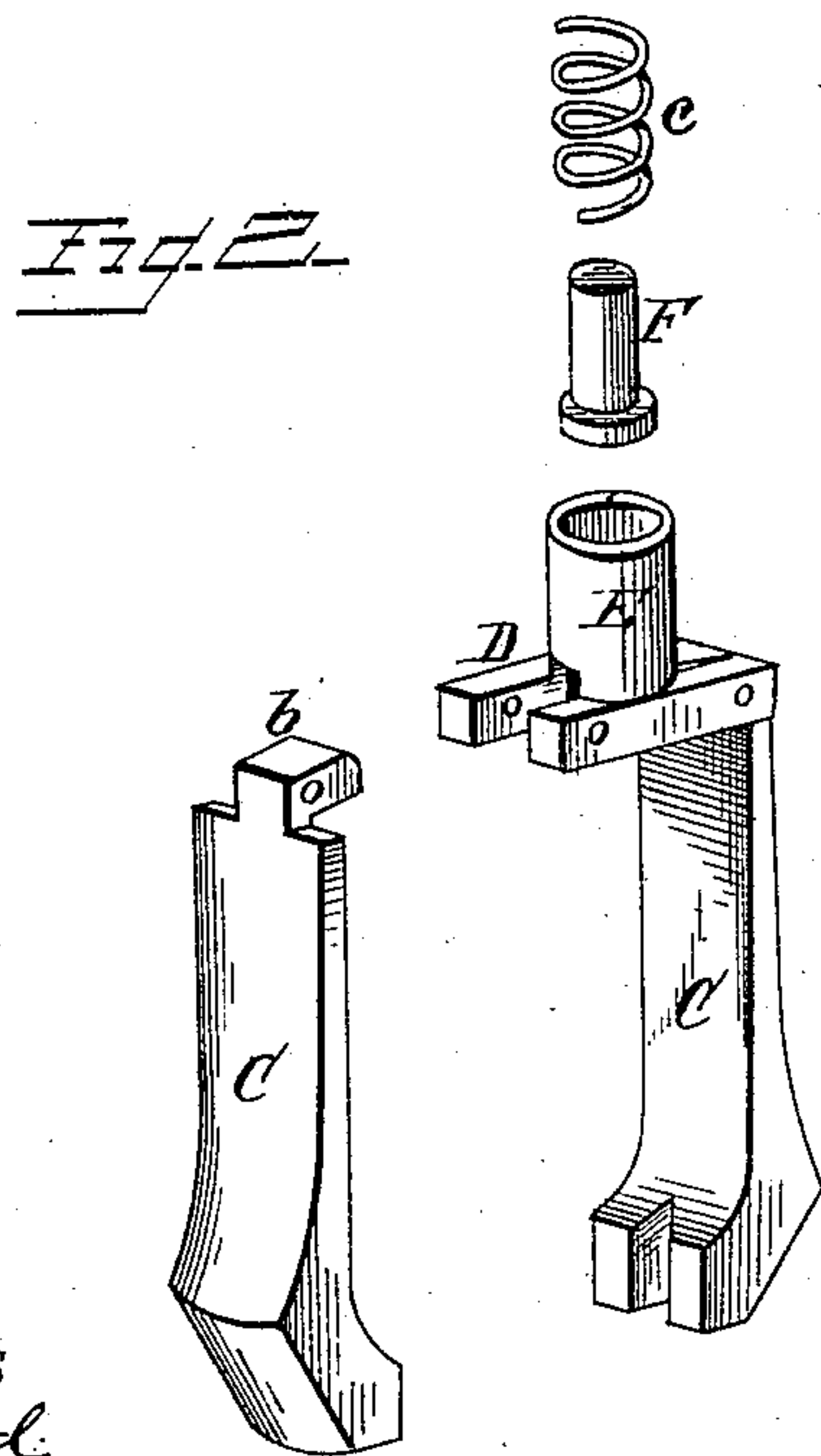
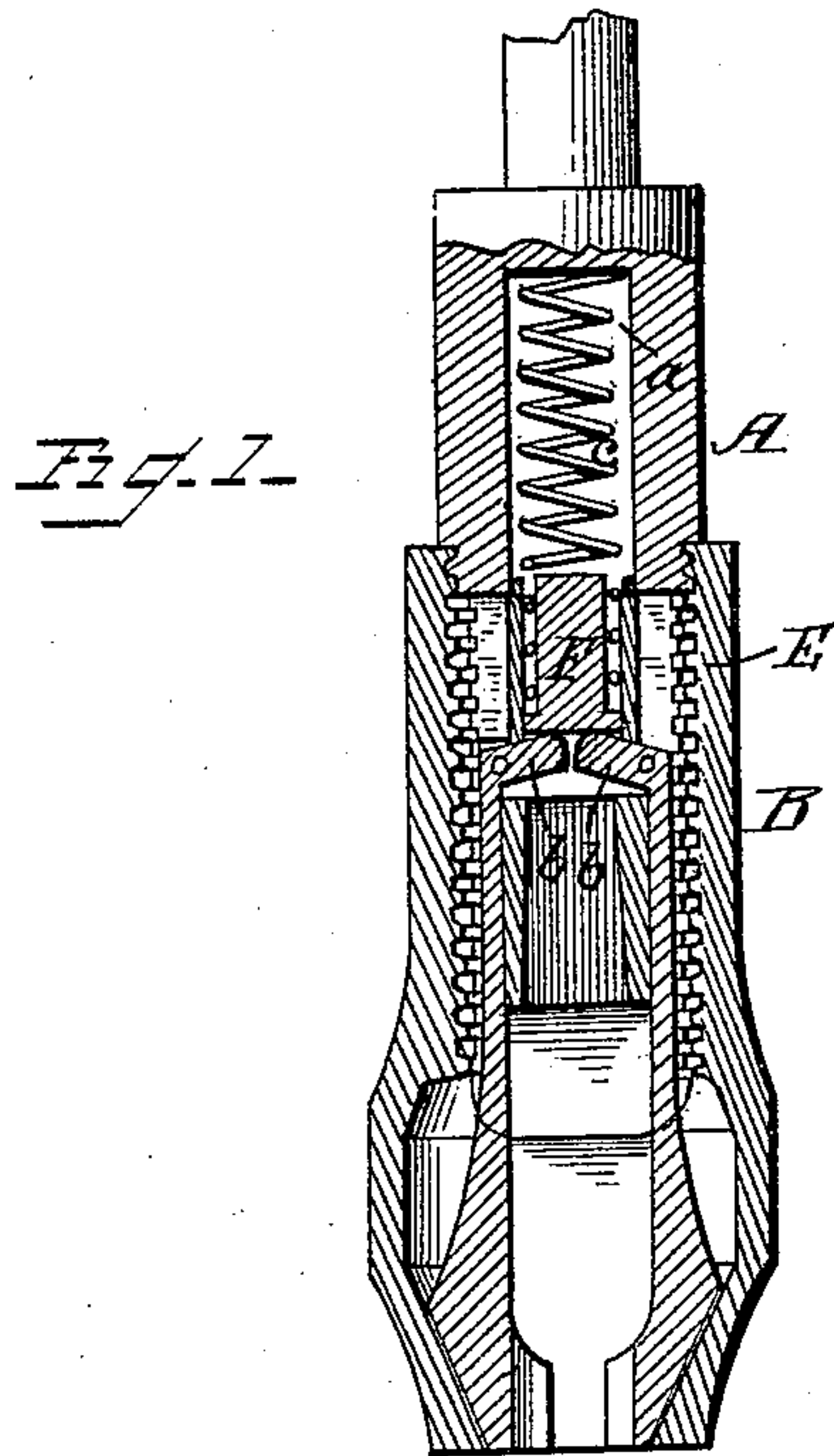


(No Model.)

J. S. FRAY.
BIT BRACE.

No. 304,519.

Patented Sept. 2, 1884.



WITNESSES
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UNITED STATES PATENT OFFICE

JOHN S. FRAY, OF BRIDGEPORT, CONNECTICUT.

BIT-BRACE.

SPECIFICATION forming part of Letters Patent No. 304,519, dated September 2, 1884.

Application filed June 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. FRAY, 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 Bit-Braces or Chucks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a sectional elevation of my invention, and Fig. 2 detail views of the several parts constituting my invention detached from each other.

The present invention has for its object to provide simple and effective means for both opening and forcing outward the gripping-jaws of a bit-brace or other chuck as the usual sleeve is turned in the proper direction to liberate said jaws, which objects I attain by the construction substantially as shown in the drawings, and hereinafter described and claimed.

In the accompanying drawings, A represents a central rod formed with a socket, *a*, slotted longitudinally and screw-threaded to receive a screw-threaded sleeve, B.

The form and construction of the several parts above described do not differ from those ordinarily in use, and therefore further description of them is deemed unnecessary.

The gripping-jaws C are provided with angular arms *b*, which are pivoted to a frame, D, or short arms cast with a tube or cylinder, E, in which is located a pin or piston, F, having a flat head to bear on the upper side of the arms of the gripping-jaws. This tube or cylinder E fits loosely in the socket *a*, and around the pin or piston F passes a spiral spring, *c*, of sufficient length to extend up into the socket and bear against the extremity thereof. As will be noticed, the arms *b* of the jaws do not cross each other, but are shortened, so as to pass each other at the axial center of the tube, while the head of the pin or piston F, being flat as it is forced outward by the spring *c* against the arms, the action will be to push outward and at the same time open

the jaws as soon as liberated by unscrewing or otherwise freeing the sleeve B from its action on said jaws.

The means of both opening outwardly and from each other of the gripping-jaws are equally applicable to all kinds of chucks as well as bit-braces, drills, and other like tools provided with movable gripping-jaws. The action of the sleeve B, when brought down against the jaws C, will be to close them onto the bit-shank and hold it firmly in the usual manner, and when it is desired to remove the bit the sleeve is unscrewed, and by the action of the pin or piston and spring against the angular arms of the jaws will at once both open them outwardly and apart from each other.

The tube E forms a guide for the head of the pin F, and also for the outer end of the spiral spring *c*, which is located therein, preventing the coils of the spring from spreading laterally and increasing its effectiveness.

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

1. A bit-brace or other chuck having suitable gripping-jaws, and at their upper ends, at an angle thereto, a frame or two short arms cast with a tube or cylinder having a spring-encircled pin or piston, which serves to expand the jaws, substantially as described.

2. A bit-brace or other chuck having suitable gripping-jaws provided at their upper ends, and at an angle thereto, with a frame or two short arms secured to or made integral therewith, a tube or cylinder having a pin or piston located therein, and which is encircled by a suitable spring bearing against a flange on the lower end of said pin or piston, and its opposite end located in the cylindrical head, all of which serve to expand the jaws when the sleeve is turned back, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN S. FRAY.

Witnesses:

JOSEPH T. FRAY,
JAS. B. LOBDELL.