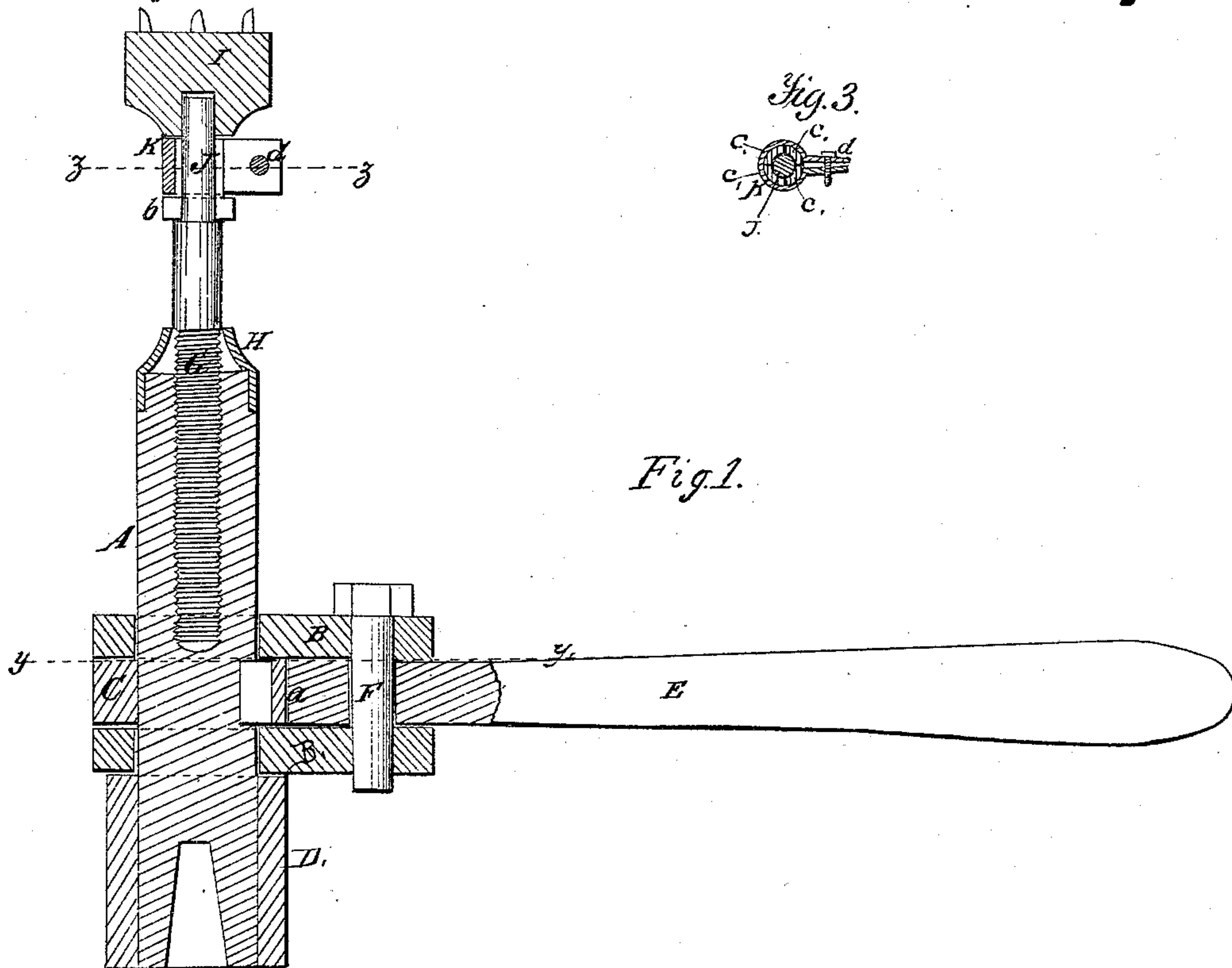


*G. W. Bishop,*

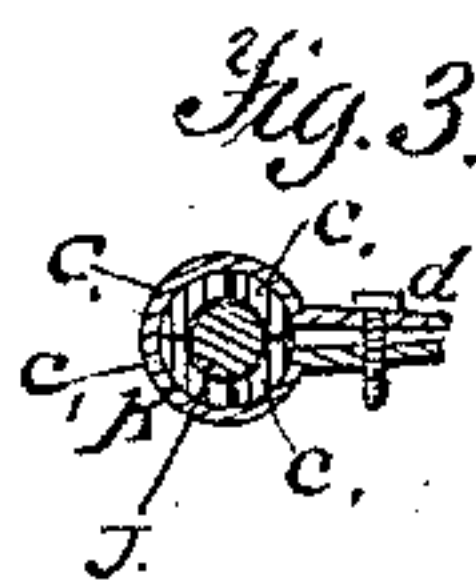
*Ratchet Drill,*

*Patented Aug. 28, 1866*

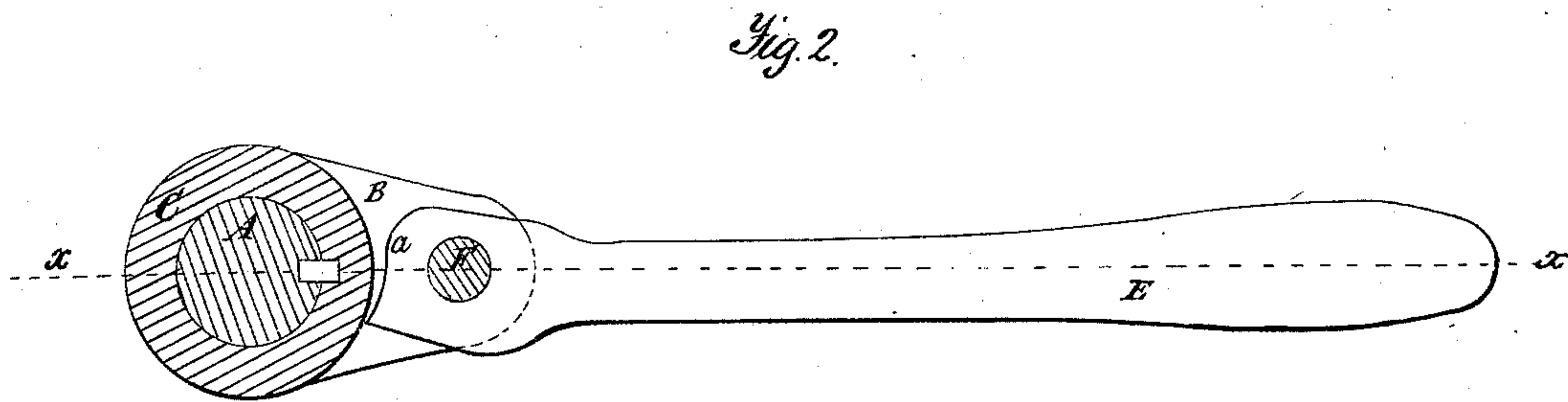
*N<sup>o</sup> 57,466.*



*Fig. 1.*



*Fig. 3.*



*Fig. 2.*

*Witnesses*

*Theo. Tusch*  
*Wm. Brewin*

*Inventor:*

*Geo W Bishop*  
*per Munn & Co*  
*attys.*



# UNITED STATES PATENT OFFICE.

GEORGE W. BISHOP, OF STAMFORD, CONNECTICUT.

## IMPROVEMENT IN RATCHET-DRILLS.

Specification forming part of Letters Patent No. 57,466, dated August 28, 1866.

*To all whom it may concern:*

Be it known that I, GEORGE W. BISHOP, of Stamford, in the county of Fairfield and State of Connecticut, have invented a new and Improved Self-Feeding Drill; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a horizontal section of the same, taken in the line *y y*, Fig. 1; Fig. 3, a horizontal section of the same, taken in the line *z z*, Fig. 1.

Similar letters of reference indicate corresponding parts.

This invention is designed as an improvement on the ratchet-drill; and it consists in a novel construction and arrangement of the parts, whereby the use of ratchets is dispensed with, and the drill rendered self-feeding, more durable than the ratchet-drills, and more desirable in every respect.

A represents an arbor, on which two lugs or ears, B B', are placed loosely, and allowed to turn or move freely, and C is a circular disk or wheel, which is keyed on the arbor A between the two lugs or ears B B'. This disk or wheel may be of steel, hardened, so as to resist wear, to which its periphery is subjected.

On the arbor A, below the lower lug or ear, B', there is secured a sleeve, D, on which said lug or ear rests.

E represents a handle, which is secured between the two lugs or ears B B' by a pivot-bolt, F, the inner end of said handle being beveled, as shown at *a*, so as to bear against and bite the periphery of the disk or wheel C when moved in the direction indicated by arrow 1, and cause the arbor A to turn, and, consequently, the drill which is fitted in the lower end of arbor A. Thus by this arrangement I avoid the use of a ratchet, and obtain a more simple and efficient means for turning the arbor.

The arbor A has a vertical hole made in it from its upper end downward, said hole having a screw-thread cut in it to receive a screw, G.

The upper end of the arbor is provided with a cap, H, through which the screw-rod passes, said cap preventing dust and dirt from entering the hole in the arbor.

On the top of the screw-rod there is fitted a head, I, provided with a pendent tube, J, having a shoulder, *b*, on its lower end. This tube J is slotted vertically, as shown at *c*, four slots (more or less) being made in it, and a metal strap or band, K, is fitted on said tube, the band K having its ends bent so as to project a suitable distance out from the tube, with a screw, *d*, passing through them, by which the band may be made to compress the tube more or less tightly against the screw-rod.

The head I is underneath a suitable fixture prepared for it, and it will be seen that as the arbor A is turned under the action of the handle E, the screw G, fitting in the internal thread in the hole in the arbor, will cause the drill to be fed to its work; but this feed movement depends upon the immovability of the screw G, for if that should turn with the arbor the feed would cease.

The slotted tube J and band K are the means by which the screw is prevented from turning; but they are not designed to prevent it from turning altogether, but only under a certain application of power to the handle E, which power, if exceeded, will cause the screw-rod to turn in J. The feed, therefore, may be regulated by graduating the pressure of the band K on the tube J, so that the latter may bind more or less hard on the screw-rod, it being understood, of course, that the head I is always immovable when the drill is at work. The feed, therefore, is self-regulating as well as self-acting, and this is important, as it preserves the drill, preventing it from being overtaxed—a contingency which would occur with a positive-feed mechanism in case the drill should pass from a softer to a harder metal, or should meet with hard portions in a mass of metal generally softer, and for which the feed would be only capacitated.

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

The screw G, fitted in an internal screw-thread in the arbor A, in connection with the friction device composed of the slotted tube J and band K, or their equivalents, for connecting the screw with the head I, substantially as and for the purpose specified.

G. W. BISHOP.

Witnesses:

M. M. LIVINGSTON,  
C. L. TOPLIFF.