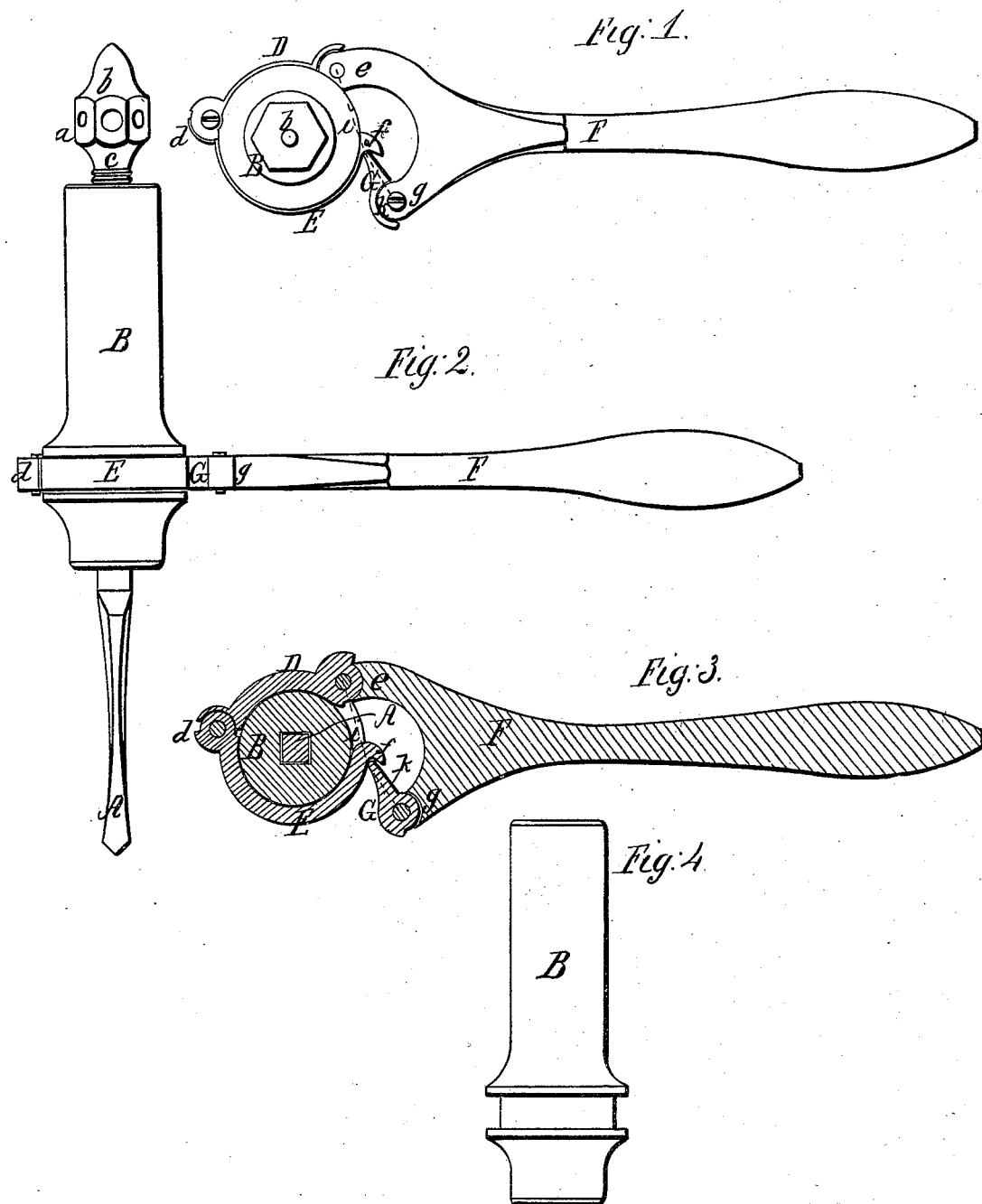


*J. Johnson,*  
*Ratchet Drill,*  
*N<sup>o</sup> 5,894. Patented Oct. 31, 1848.*



# UNITED STATES PATENT OFFICE.

JOHN JOHNSON, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR TO STEPHEN B. CRAM, OF BOSTON, MASSACHUSETTS.

## HAND-DRILL.

Specification of Letters Patent No. 5,894, dated October 31, 1848.

*To all whom it may concern:*

Be it known that I, JOHN JOHNSON, of Somerville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Hand-Drills; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1 denotes a top view of my improved drill. Fig. 2, is a side elevation of the same. Fig. 3, is a horizontal section of it taken through the lever or handle.

In the figures A, exhibits the drill, and B, the stock or drill holder. The said holder is made with a socket on one end, to receive the drill. It also has a screw C, adapted to the other end, and made to screw in and out of the same, the said screw having a head *a*, and a conical projection *b*, on the upper end of it, the said conical projection serving for a center to steady the drill. The stock B, is made with or has a suitable groove turned around in it, as seen in Fig. 4, which denotes a view of the stock divested of its friction bands and other parts.

The said groove is formed to receive two friction bands or clasps D, E, which are jointed or hinged together as seen at *d*. The former of said bands is jointed to a projecting arm *e*, of a forked lever F, while the latter of the bands has a hooked end as seen at *f*, against which a small toggle G, rests and bears. The said toggle is jointed to another or short arm *g*, of the lever F, the whole being arranged as seen in the drawings.

The joint of the toggle is so made as to prevent any outward movement of the toggle (that is to say a movement of it toward the stock) beyond about a right angle to the arm to which it is attached. The said movement however when the toggle is borne against the hook *f*, must be sufficient to allow the two friction bands D, E, to move freely around upon the stock without any bind or friction, such as will cause it to rotate forward with the lever F, when said lever is moved in a direction away from the person who grasps it. The joint of the toggle should also be constructed in such manner as to allow the toggle to move toward the inner end of the lever. By inspection of Fig. 3,

it will be seen that if a red line *i*, be drawn from the center of the joint of the arm *e*, and clasp D, to extreme inner end of the toggle, such a line will make an obtuse angle with another red line *k*, drawn from the said end of said toggle to the center of its joint, the vertex of which obtuse angle will be toward the stock. The several parts being thus arranged, constructed, and combined, if a person places the drill in action upon any body or article to be perforated, and grasps the lever F, and draws it toward him the toggle will be caused to so act against the hook of the friction band E, as to draw or force the two bands D, E, toward one another, and cause them to firmly grasp the drill stock with a degree of friction sufficient to rotate it and the drill with the further movement of the lever. The retraction or reverse movement of the lever, will cause the friction bands to unloosen their hold upon the stock so as to permit the lever to be moved forward to the extent required, without creating any corresponding rotation of the drill stock.

I am aware that a drill stock has been made with a movable lever applied to it so as to operate one or more pawls against a ratchet wheel on the stock. I lay no claim to such an invention, as it is liable to serious objections which I have overcome by my improvement, one of the most important of said objections, being a loss of motion of the lever which frequently results, by reason of the movement of the pawl beyond a tooth, and its subsequent movement up against the tooth, the same rendering it very difficult under certain circumstances to operate the drill to good advantage, but

What I do claim as my invention is—

The friction bands or clasps D, E, (or an equivalent spring band) and the toggle G, in combination with the lever and its arms, and the drill stock, the whole being arranged, constructed, and made to operate together substantially as specified.

In testimony whereof I have hereto set my signature, this 7th day of March, A. D. 1848.

JOHN JOHNSON.

Witnesses:

R. H. EDDY,  
CALEB EDDY.