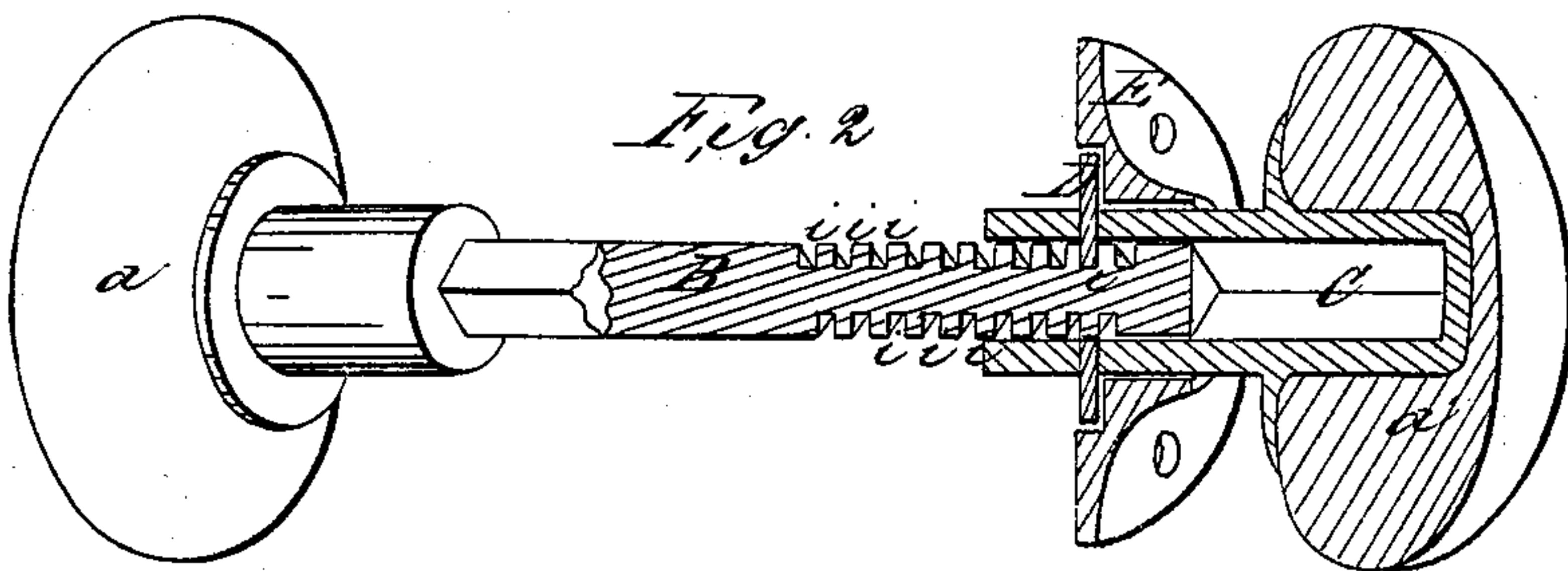
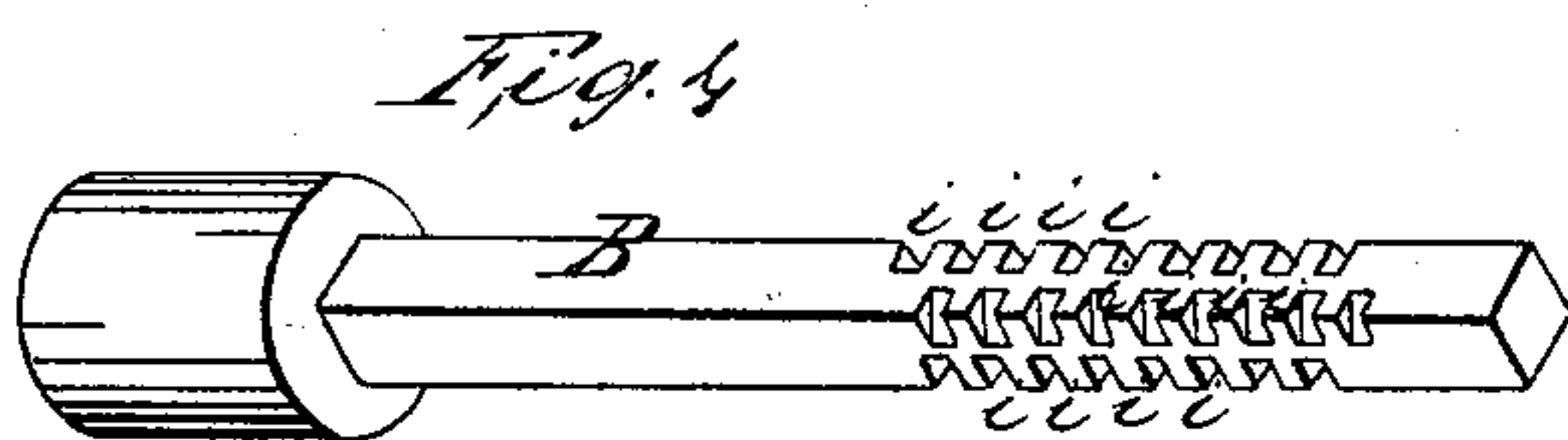
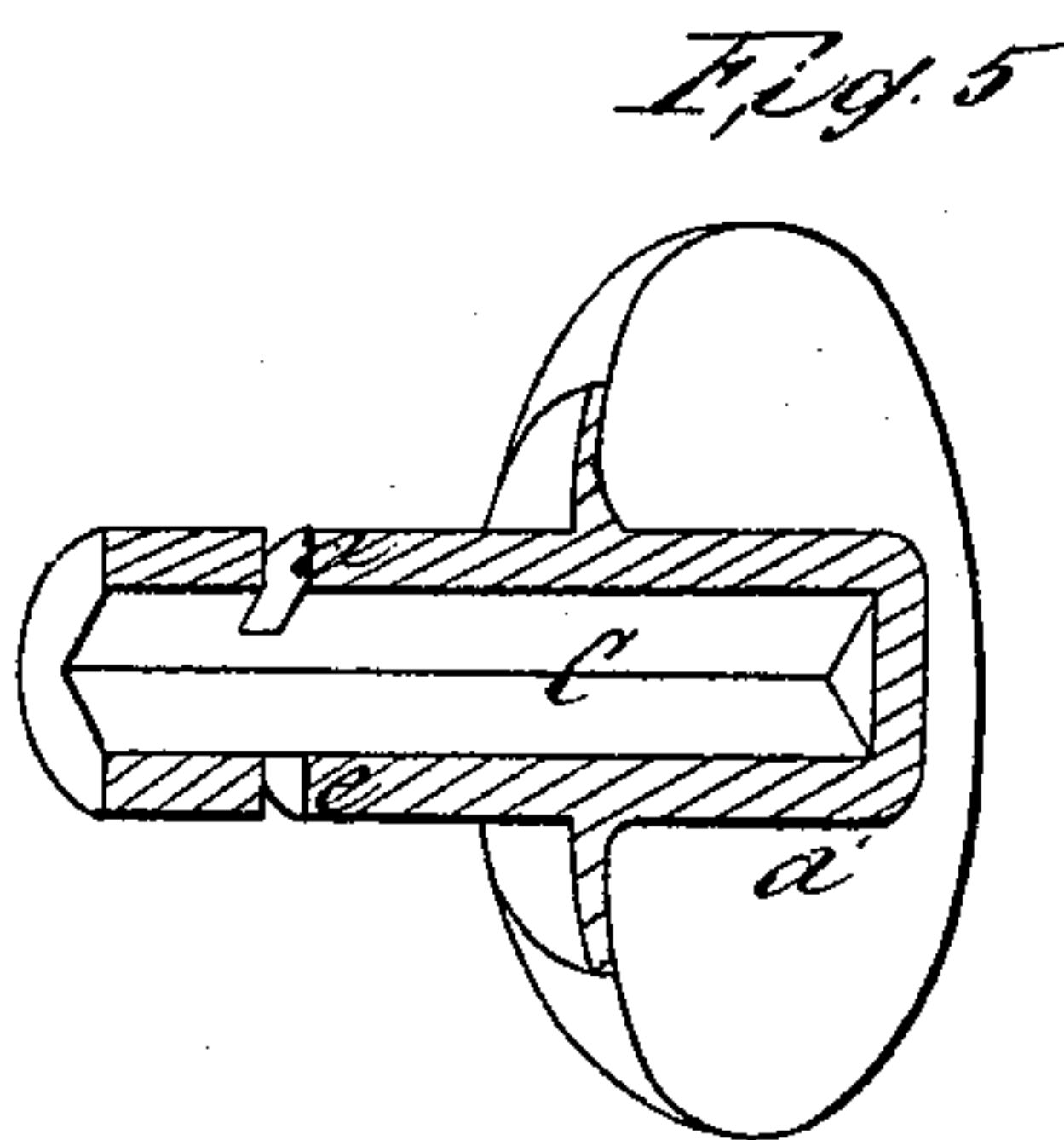
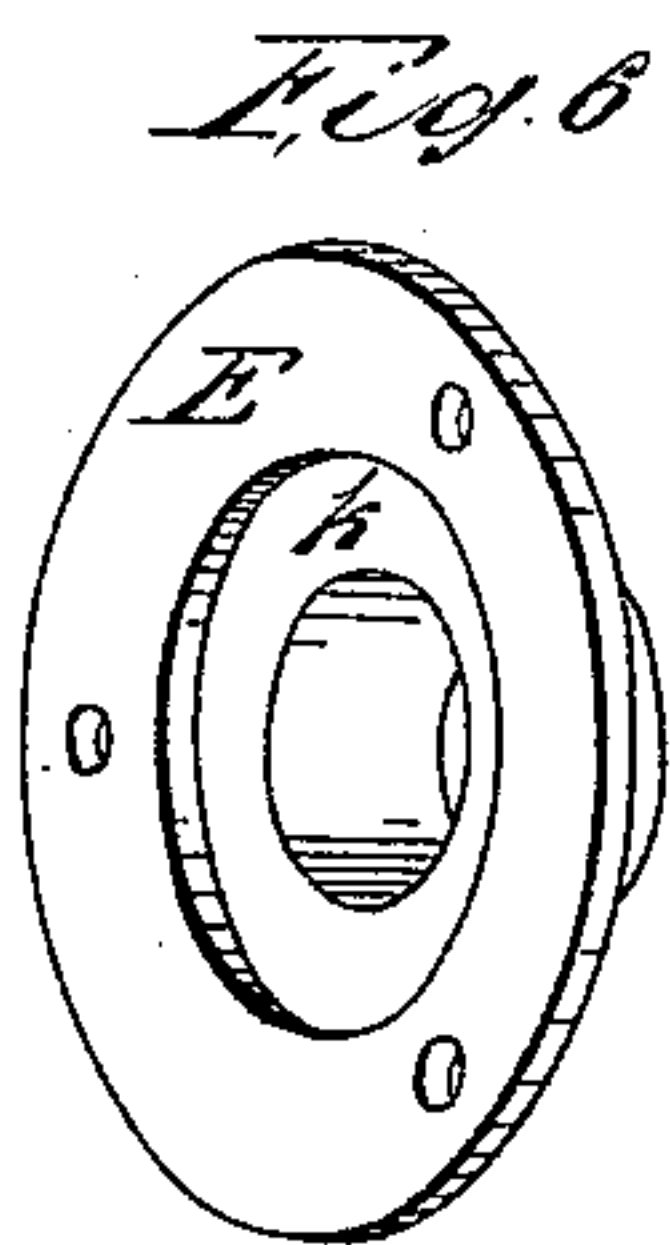
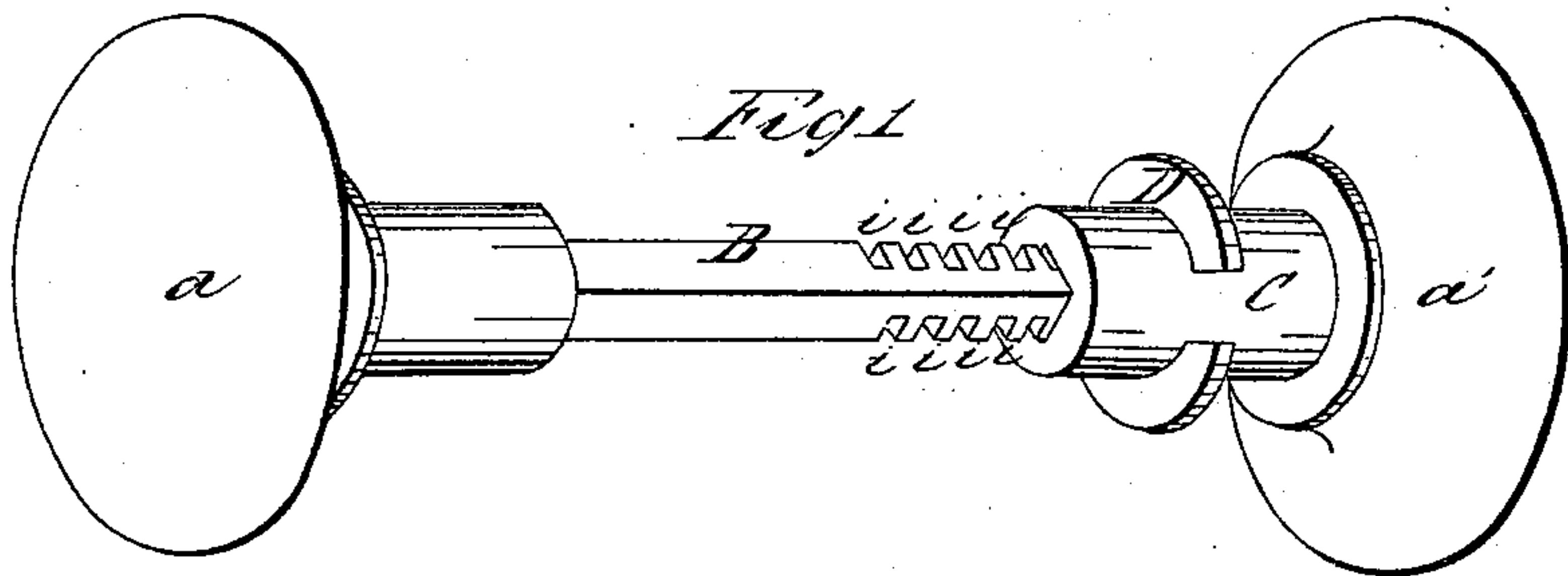


O. Newton,  
 Knob Attachment,  
 No. 17,887, Patented July 28, 1857.





# UNITED STATES PATENT OFFICE.

ORRIN NEWTON, OF PITTSBURGH, PENNSYLVANIA.

## SPINDLE FOR DOOR-KNOBS.

Specification of Letters Patent No. 17,887, dated July 28, 1857.

*To all whom it may concern:*

Be it known that I, ORRIN NEWTON, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Construction of Knobs or Spindles for Locks or Doors; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawing, forming part of this specification, and to the letters of reference marked thereon.

My improvement consists in connecting the spindle attached to and forming part of one of the knobs of the door or lock handle by means of a key forming no part of the lock and placed outside of the door or lock, which, passing through the short shank of the other knob (made hollow to receive the spindle), enters one of a series of notches in one side of the spindle, thus locking them together, these notches in the spindle being placed their own width apart on opposite sides of the spindle to admit of adjusting the handle to the various thickness of doors by turning the handle half around. This mode of fastening is not only much more firm and secure than any now in use, but being entirely independent of any connection with the lock itself, is not liable to get out of order, and may be applied to handles of doors where no locks are used.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the drawings, Figure 1 represents a perspective view of a pair of door knobs and their spindle connected by means of my improvement, the circle plates being removed. Fig. 2 represents a sectional view of the same, showing the mode of attachment and the position and use of the circle plate. Fig. 3 is a representation of the key used to connect the spindle and shank. Fig. 4 is a sectional view of the spindle. Fig. 5 is a sectional view of the shank and its knob. Fig. 6 is a representation of the circle plate.

In the several figures like letters of reference apply to similar parts.

A, A' are the knobs or handles. To A is attached the spindle B, which is a straight square piece of iron of sufficient length to pass through doors of ordinary thickness, and box locks, and enter the shank of the other knob.

C is the shank, attached to the handle A'.

The shank C has a square hole passing through its center some distance into the knob A'. This square hole is designed to receive the spindle B, which is made to fit snugly into it. On opposite corners of the spindle B, toward its extremity, which enters into the shank C, are cut notches *i, i, i, &c.*, of the width of the key D and of sufficient depth for the key to fasten securely into them. These notches, though on opposite angles of the spindle, are placed alternately, so that a notch on one side is placed in juxtaposition to the space between two notches on the other side. These notches are cut on the spindle at right angles to the axis of the spindle (and not at an inclination to the axis or forming parts of an intermitting screw, which would cause the key to work loose in its notches by the constant turning of the handles). On each side of the shank C is cut a groove, the groove *d* on one side being cut at right angles to the axis of the shank to a sufficient depth to penetrate the cavity in the shank, while the groove *e*, exactly opposite to the groove *d*, is also at right angles to the axis of the shank, but is not cut so deep as to enter the cavity. Each of these grooves is exactly the width of the key D and of the notches *i, i, &c.*, in the spindle B.

The key D (see Fig. 3) is a circular disk of metal about  $\frac{1}{16}$  inch thick and of the same width exactly as the notches *i, i*, in the spindle, and grooves *d, e*, in the shank. A slot *f* is made in the key, of such a width as to be placed astride the spindle B, with one side in one of the grooves *i*, and the other outside of the opposite blank space on the spindle. This slot *f*, is cut a little to one side of the center of the key and extends so far past the center in its length that the key when in place will be concentric with the axis of the spindle B, and shank C.

The rose or circle plate E is of any usual shape or pattern, the only difference being that a circular depression K of the diameter and thickness of the key H is made on its under side, around the central hole through which the shank passes for the purpose of covering up the key D, and allowing the circle plate to be secured close to the door. It also prevents the key H from slipping out of place or becoming loose by the frequent turning of the handles.

Having thus described the several parts,



it remains to explain their connection, use and operation.

If there is an outside lock on the door, the handle A is placed on the lock side, so that the circle plate E, covering the key D, may be screwed to the door on the opposite side. The spindle B, being passed through the door with the notches projecting on the opposite side of the door, the shank C is placed on it, the extremity of the spindle B entering the square cavity in the shank C. The shank C being pressed against the door, the deep groove *d* will be found to correspond nearly enough for all practical purposes, either with a notch *i'* in the spindle or with a sharp corner of the spindle, the space between two notches. If the latter is the case, the shank is taken off and turned half around and then the deep groove *d* will be found to correspond with a notch *i'*. The key D is then slipped on to the shank astride of it, the fuller side of the key, marked *h* in Fig. 3, being placed in the deep groove *d*, and the narrower side *g* of the key into the shallow groove *e*. Then, as before stated, the circular key is exactly concentric with the shank and spindle, and as the deep groove *d* enters the cavity in the shank C (see Figs. 2 and 5) it also enters the notch *i'* opposite to the groove *d*, thus securely connecting the spindle to the shank and both to the door. The under face of the key D rests against the door, but does not in any way prevent the free turning of the handles. Lest the key should slip from its place or be removed by design or accident, the rose or circle plate E (previously slipped over the shank C) is screwed to the door, the circular cavity or depression K receiving the key D and covering it from view.

From the description just given it will be clear that this mode of attaching handles to doors is equally applicable where there is no lock used, and should greater exactness be required than is attained by cutting grooves

on the spindle on two opposite corners additional grooves may be cut on the two other corners or angles of the spindle intermediate to the other grooves and alternating as before described, as shown in Fig. 4. By this arrangement if the grooves are  $\frac{1}{16}$  inch thick the handles might be adjusted to an exact fit for every variation in the thickness of the door of  $\frac{1}{16}$  of an inch, a greater degree of exactness than is necessary for practical purposes. This construction and arrangement has great advantages over any mode of fastening and connecting the spindle and shank of door knobs, not the least of which is its great simplicity and freedom from liability to get out of order and its being entirely disconnected from the interior arrangement of the lock.

I do not claim as new the use of notches in the spindle, nor the use of a key to connect the spindle and shank, but

What I do claim as my invention and desire to secure by Letters Patent is—

The arrangement of the notches on the spindle of the door knob in alternate positions on opposite corners or angles of the squared spindle, in combination with the key, constructed as described, and the deep and shallow grooves in the shank, together with the depression in the circle plate to keep the key in place, for the purpose of adjusting the length of the spindle of the door knobs to different thickness of doors, by gradations sufficiently minute to answer all practical purposes, and for other purposes hereinbefore set forth, substantially as described.

In testimony whereof I have hereunto set my hand this eighteenth day of February A. D. 1856.

ORRIN NEWTON.

Witnesses:

WM. N. HOWARD,  
N. BUCKMASTER.