W. A. Fenn.

Door Knob.

No. 112,134. Patented Feb. 28, 1871.

Fig. 1.

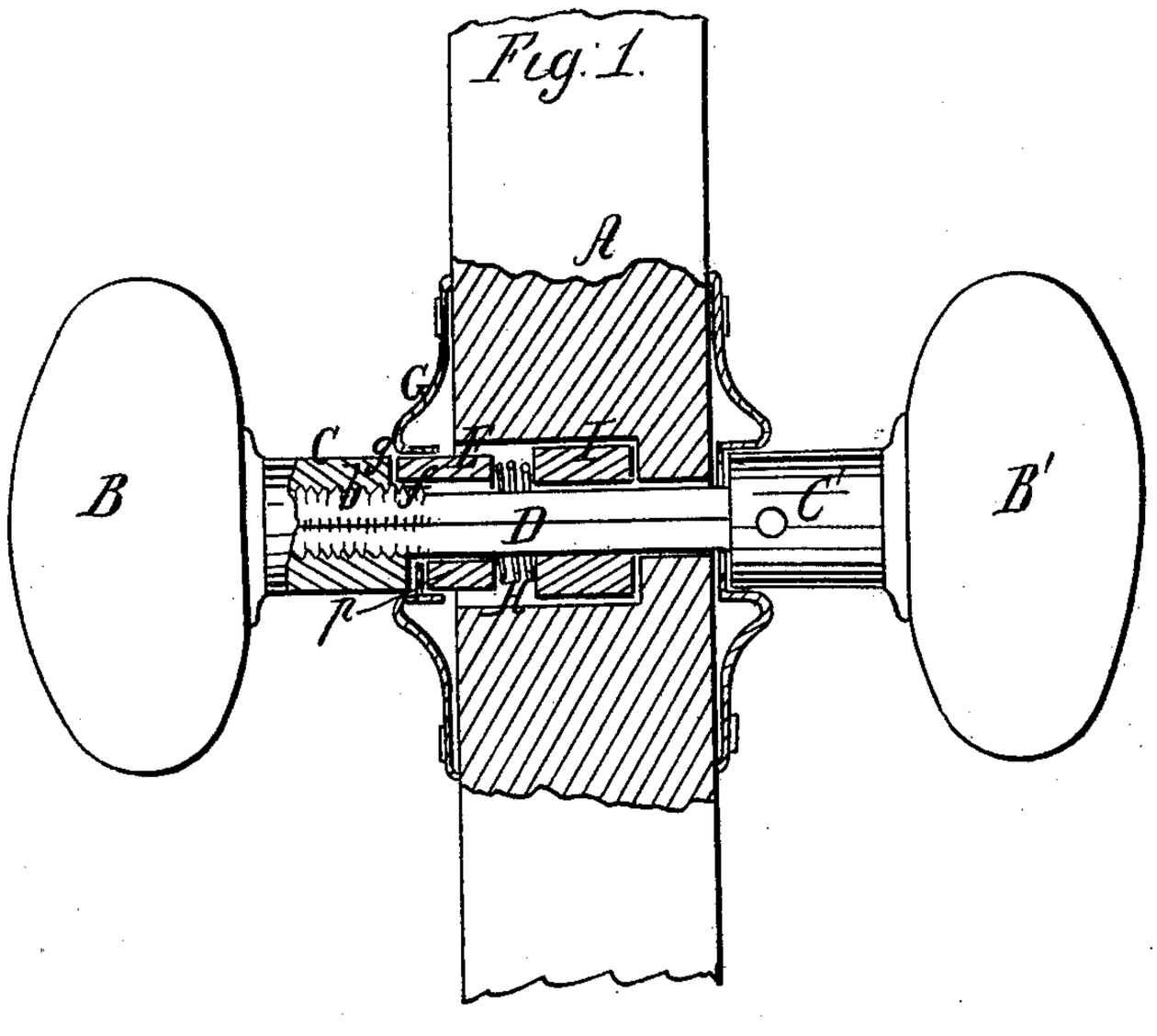


Fig. 2.

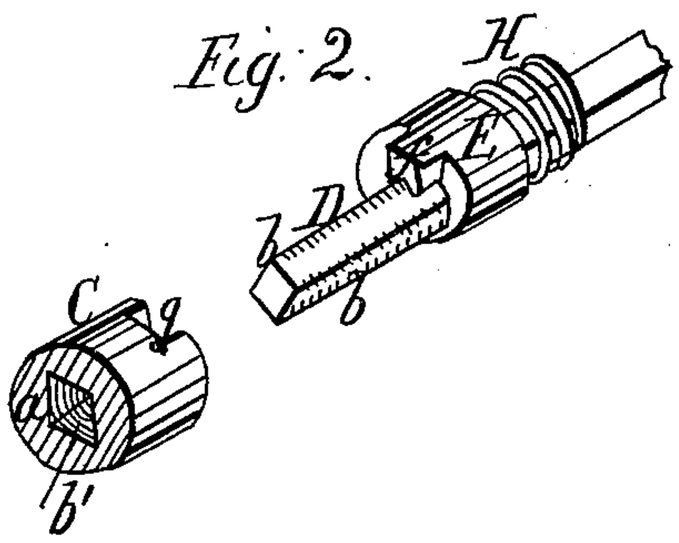
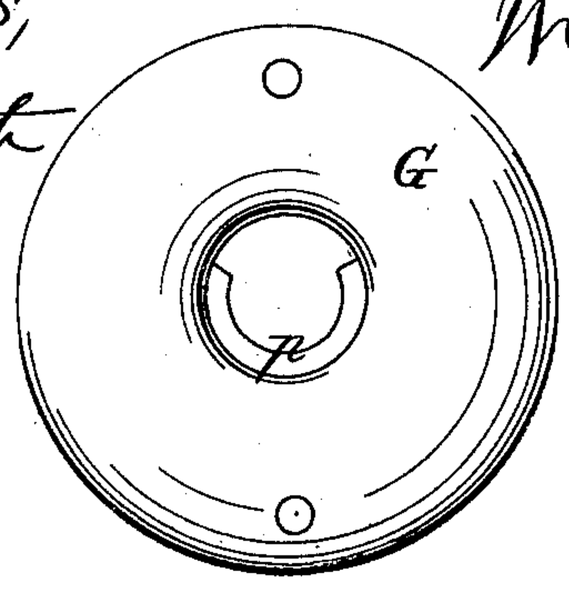


Fig. 3.



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United States Patent Office.

WILLIAM A. FENN, OF ROCHESTER, NEW YORK.

Letters Patent No. 112,134, dated February 28, 1871.

IMPROVEMENT IN ATTACHING KNOBS TO THEIR SPINDLES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM A. FENN, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Door-Knobs, of which the following is a specification.

Nature of the Invention.

My invention relates to the attachment of door-knobs to their spindles, and consists in the means employed for the purpose, as fully set forth in the claims.

General Description.

In the drawing—

Figure 1 is a section of my improved knob attached to a door.

Figure 2, a perspective view of the spindle, sleeve, spring, and knob-shank detached.

Figure 3, a face view of the rose.

A represents the door;

B B′, the knobs;

C C′, the knob-shanks; and

D, the spindle.

In general arrangement these parts are the same as those in general use.

The spindle and the socket *a* of the loose knob-shank C are both made square in cross-section, as shown in fig. 2.

A screw-thread, *b*, is cut upon the corners of the front end of the spindle, and a similar thread, *b′*, in the square sides of the sockets, which threads intermatch or engage when turned together, yet allow the spindle to slide in and out of the socket when the corners and sides are coincident.

A sleeve, E, having a square socket, rests upon the spindle just inside the rose G.

This sleeve is pressed outward by a coiled or other spring, H, which rests against the ordinary cam I, inside the door.

The sleeve is provided with a projecting lug, *f*, and the end of the knob-shank with a similar notch, *g*, which, when in coincidence, strike together or engage, thus locking the knob-shaft to the spindle.

The action is as follows:

The knob-shank C is slipped upon the projecting end of the spindle, with the notch *g* standing at an angle or out of line with lug *f*. The pressure of the shank against the pawl E forces the latter back till the shank is firmly seated, when a slight turn of the latter brings the notch and lug in line, when the sleeve springs back again, thus locking the shank to the spindle, as before described.

The turning of the shank also brings the sharp corners of the spindle against the squares of the shank-socket, by which the screw-threads are engaged, thereby securing the shank and spindle firmly together. The slight turn of the shank to make this connection and engagement also causes the end of the shank to press in slightly by the engaging of the screw-threads, so as to take up any slack, and prevent any end motion or looseness of the knobs.

The object of this invention is to furnish a better connection for the knob-shank and spindle than the ordinary screw, which is constantly working out, and, besides, allows only a fixed and absolute adjustment to doors of different thicknesses, in lieu of the holes bored in the spindle for the screw to strike into.

In my device the parts can never become disengaged, except by design, and they can be adapted exactly to the thickness of the door by pressing closely up to place, as the screw-threads will engage at any position. If there is any difficulty from this source, merely withdrawing the spindle and inserting it in a different position will obviate it, as the screw-threads are gradual, as where cut in an unbroken line. Or, if desired, the knob-shank may have four of the notches *g* on the four sides, which will allow it to engage with the lug of the pawl in any desired position without changing the spindle.

By my arrangement, I also gain a great advantage in firmness and strength, as the screw-threads lock the whole length of their cut. Where the common screw is used but a single point of connection is made. At the same time that I thus secure a connection the whole length I can break the engagement by a partial turning of the shank, and thus withdraw the spindle. If a continuous or whole screw-thread were cut, the engagement and disengagement could be made only by making many successive turns of the shank.

In order to prevent the looseness that might otherwise occur, I form the eye of the rose G with a flange, *p*, which forms a stop to the end of the knob-shaft, as clearly shown. When the knob-shaft is turned up it rests closely against this stop, so that no material end play can be produced. If there is any difficulty in adjusting, a mere change of position of the spindle will remedy it, as before described.

Claims.

What I claim, and desire to secure by Letters Patent, is—

1. The spring-sleeve E, provided with one or more lugs, *f*, in combination with the square spindle, having screw-threads *b* upon its corners, and the knob-shank C, having interior screw-threads *b′*, and one or more recesses *g*, for the purpose specified.

2. The rose G, having the flange *p*, in combination with the spring-sleeve E, spindle D, and knob-shanks C, for the purpose specified.

In witness whereof I have hereunto set my hand this 5th day of December, 1870.

WM. A. FENN.

Witnesses:

R. F. OSGOOD,

FRED. A. HATCH.