S. HILER.

Knobs for Doors, &c.

No. 196,014. Patented Oct. 9, 1877.

Fig. 9.

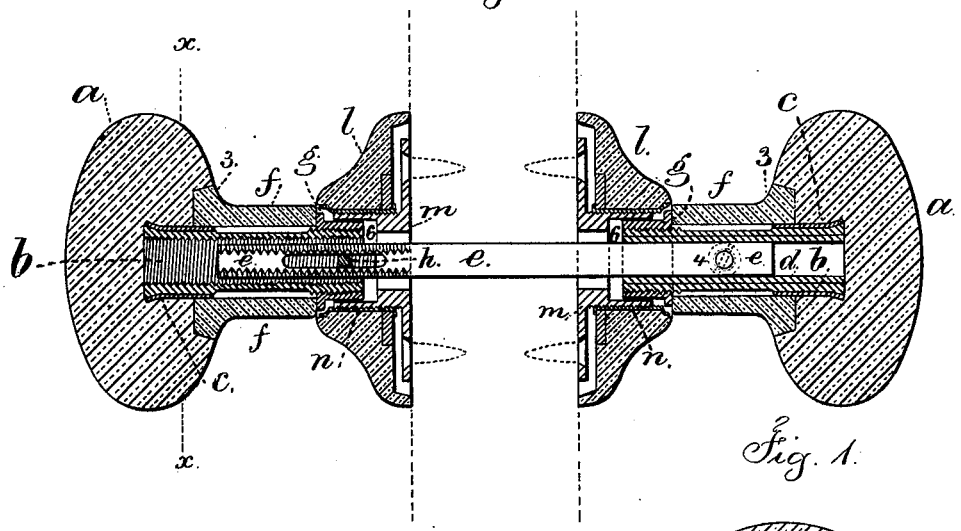


Fig. 1.

Fig. 7.

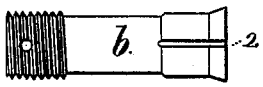
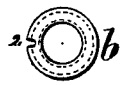


Fig. 8.



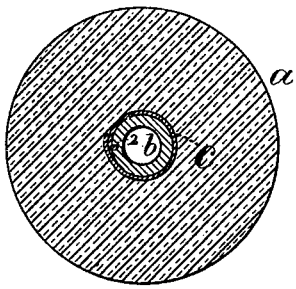


Fig. 2.

Fig. 3.

Fig. 5.

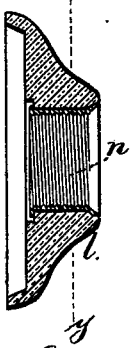


Fig. 6.

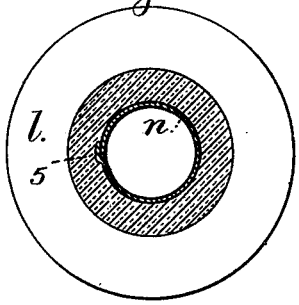
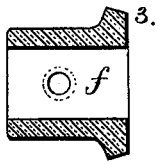


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

SELAH HILER, OF NEW YORK, N. Y.

IMPROVEMENT IN KNOBS FOR DOORS, &c.

Specification forming part of Letters Patent No. **196,014**, dated October 9, 1877; application filed February 20, 1877.

To all whom it may concern:

Be it known that I, SELAH HILER, of the city and State of New York, have invented an Improvement in Knobs for Doors, &c., of which the following is a specification:

In the manufacture of mineral door-knobs it is usual to introduce the metal knob shank or socket into the cavity in the mineral knob and secure it by lead or other metal cast into the cavity around the shank. Knobs of this character are objectionable, because the shank is liable to become loose in the knob, and the shank itself becomes discolored, and is objectionable in its appearance.

The first part of my improvement relates to the manner of securing the metal shank or socket into the porcelain or vitrified knob.

The knob *a* is made with a recess for the reception of the shank. This recess is largest at the inner end, and into it the shank or socket *b* is placed, and the inner end of the shank is larger than the body thereof, and the parts are held together by the cylinder or strip of sheet metal *c*, that is of a thickness to fill the space between the shank *b* and the interior surface of the recessed knob, and the inner end of this cylinder *c* is notched, so that when it is placed around the shank, and forced into the recess by a hollow punch or suitable tool, the inner end of the cylinder will be spread by the head of the shank or socket, and fill the enlarged inner portion of the recess, and hold the socket firmly into the knob.

Figure 1 is a section at the line *x x* of Fig. 9, showing the knob-shank and cylinder. Fig. 2 is a side view, and Fig. 3 an endwise view, of the cylinder *c*.

The inner surface of the recess in the vitrified knob should be grooved longitudinally for the edge of the sheet metal, as seen in Fig. 1, so that the cylinder *c*, Figs. 2 and 3, cannot be revolved therein, and it is preferable to have a groove, 2, in the shank near the same point to prevent that turning. This feature of improvement is available with the hollow shanks that form sockets for the screw or square ends of door-spindles, or for the shanks of the screws used in drawer-knobs.

The socket *b* for the spindle is preferably formed of a piece of thin gas-tubing or a strip of sheet metal rolled up, and having a screw-thread cut upon the inside for the screw-spindle *e* of the lock. This socket is made of the proper external shape, as shown, or around this socket type-metal or similar alloy may be cast while the socket is in a mold. This allows the exterior surface of the socket to be of the proper shape for the other features of improvement.

Fig. 7 is a side view of the socket, and Fig. 8 is an end view of the same.

The socket *b* is made with a square hole for the one end of the spindle *e* in the ordinary manner, so that the square spindle will pass into the same, and be held by a screw, 4. (See complete section, Fig. 9.)

Another part of the invention relates to the separate outside sleeve *f* of the knob, which is formed of vitrified material, such as a piece of porcelain or other material with a vitrified surface. This sleeve *f* is made with a flaring end, 3, entering a recess in the back of the knob *a*. Said sleeve *f* is hollow, so as to surround the socket *b*, and a cylindrical flanged nut, *g*, screwed upon the outside of the socket *b*, holds this vitrified sleeve in place, and forms the end of the socket that passes into the rose. The sleeve *f* should be secured by plaster to the socket *b* and knob *a*, as well as by the nut *g*.

Through the cylindrical nut *g* a screw, *h*, should be inserted crosswise, to pass through a slot in the screw-spindle *e* to prevent the same from turning.

I remark that where the knob is fastened to the square spindle the socket *b* is made square, and there is a screw, 4, that passes through the sleeve and socket into the spindle *e*. This screw 4 is usually employed with metal shanks.

Fig. 4 is a section of the knob-sleeve *f* separately.

The next feature of my improvement relates to the vitrified rose *l*. This is made of porcelain, glass, or similar material. Fig. 5 is a section of the rose, and Fig. 6 is a sectional elevation at the line *y y*, Fig. 5, of the same, and the screw-thimble. This thimble *n* is made of sheet metal rolled up to the proper size, with the edges united by a folded lap, as at 5, and this is inserted into the opening of the rose, there being a groove for the reception of the lap. The thimble is secured by spreading its ends into recesses in the rose, (see Fig. 5,) and

then there is a screw-thread cut upon the interior surface of the thimble, and this screws upon the exterior of the metal socket of plate *m*, that is of ordinary construction, and screwed to the face of the door. The nut *g* of the knob-shank enters the socket 6 of this plate *m*.

In the section, Fig. 9, the aforesaid parts are represented in the relation they occupy to each other when upon a door.

Some of the advantages of this construction are: The shank is very securely held into the knob. Melted metal is not required in the knob, and liability to break is lessened. The outer surface of the sleeve of the knob, being of porcelain or vitrified material, is easily kept clean, and is handsome in appearance. There is no liability to injure the sleeve by the screw or spindle, because the connection is made to the knob before the vitrified sleeve is applied. The rose is very securely held, and the risk of its becoming unscrewed is lessened. Little or no metallic portions are visible upon the knob or rose.

I claim as my invention—

1. The cylinder *c* of sheet metal, in combination with the headed shank *b*, and the vitrified knob *a*, having a recess that is largest at its inner end, the parts being connected, as set forth.

2. The vitrified knob *a*, having a recess, in combination with a separate vitrified sleeve, *f*, connected with the knob by the socket for the spindle, substantially as set forth.

3. The combination of the knob *a*, sleeve *f*, spindle-socket *b*, and cylindrical nut *g*, for the purposes and as set forth.

4. The vitrified rose *l*, having a thimble, *n*, introduced in the hole thereof, and secured by spreading the ends thereof, and having a screw-thread upon its inner surface, substantially as set forth.

Signed by me this 15th day of February, A. D. 1877.

S. HILER.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.