H. TUCKER.
Door-Knob.

No. 212,162. Patented Feb. 11, 1879.

Fig: 1.

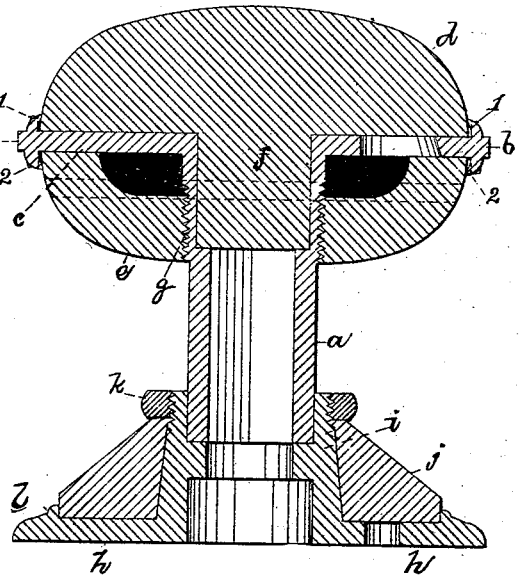


Fig: 2.

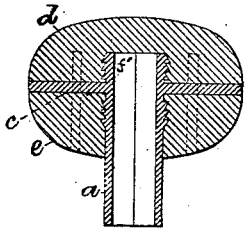
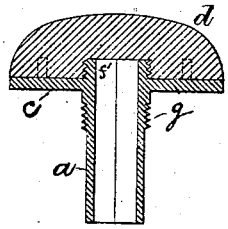


Fig: 3.



Witnesses.
L. D. Connor
H. E. Whitney.

Inventor.
Hiram Tucker
by Crosby Gregory Attys

UNITED STATES PATENT OFFICE.

HIRAM TUCKER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN DOOR-KNOBS.

Specification forming part of Letters Patent No. **212,162**, dated February 11, 1879; application filed November 1, 1878.

To all whom it may concern:

Be it known that I, HIRAM TUCKER, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Knobs, of which the following is a specification:

This invention relates to knobs for locks, latches, &c.; and consists in a knob composed of a metallic frame and a front, or a front and back plate composed of natural or artificial wood, vitreous or ceramic substances, compressed paper or papier-maché, hard rubber, diatite, or other plastic moldable compounds. These substances may be plain or ornamental, or be of natural or artificial colors.

Figure 1 represents, in vertical section, a knob illustrating a practical embodiment of this invention; Figs. 2 and 3, modifications, to be referred to.

In the drawings, *a* represents a socket, *b* a rim, and *c* a disk or metallic portion to support the rim, which is in Fig. 1 shown as having two annular flanges or projections, 1 2.

I herein denominate as "disk" all that portion of the knob-frame embraced between the front and back plates, and as "rim" all that portion of metal which is external to and is of greater diameter than the front plate.

The socket *a* receives the knob-spindle, which is held therein by a screw or in any usual way.

The knob shown in the drawings has an independent front plate, *d*, and a separate back plate, *e*.

The annular projection or flange 1 of the rim receives within it the outer edge of and prevents the lateral displacement of the front plate with reference to the said disk.

The back plate, *e*, is herein shown as correspondingly held in place by the annular projection or flange 2 of the rim.

The front or back plate being in position within the flanged portions 1 2, the said portions are subjected to the action of a suitable wheel or tool to turn or spin the edges of the said flanges 1 2 from the position shown in dotted lines to that shown in full lines, thereby causing the said flange or flanges to embrace the edges of the front or back plates supported by the disk.

Instead of spinning the said flanges over in the manner just suggested, the said rim and flanges may be made of any suitable ductile material and placed within suitable dies, the front or back plate, or both, being in position within the flanges. The dies may be closed, and the flanges may be compressed to a smaller diameter, and be contracted firmly and positively upon the front or back plates.

To make a most firm and solid knob, I have shown the front plate as provided at the center of its inner face with a stem, *f*, which is forced into an opening made at the upper end of the knob-shank *a*, and below the disk I have provided the shank with holding projections *g*, preferably made as a screw-thread, upon or over which the back plate is turned or forced.

Instead of the screw-thread the shank might be provided with ribs or projections, (see Fig. 2,) which may be barbed, so that the points of the barbs will enter the back plate if made of wood; or, instead of the screw-threads, I may employ as a back-plate holding device a pin inserted through the back plate and shank, as shown in dotted lines, Fig. 1.

Figs. 2 and 3 illustrate a modification in which the inner holding device, which co-operates with the inner side of the front plate, to secure it in place upon the disk *c*, is shown as projecting beyond the disk and as entering a suitable hole made at the inner face of the said front plate. This inner holding device, as shown, is an extension, *f'*, of the shank above the disk *c*.

If the rim is made of cast metal or malleable iron, the spinning or turning over of the flanges 1 2 will be omitted, and so also, when the frame or rim and flanges are made ductile, the parts *g f* may be omitted.

In all the modified forms of my knob the metallic disk *c* receives all the strain required to turn the knob. The edges of the plates *d e*, placed within the rims, are protected from wear or blows.

The "rose" is composed of a base, *h*, provided at its center with a fixed shank, *i*, over which is placed the rose-plate *j*, composed of a like material as the front plate of the knob.

The base *h* is provided with an annular external rim or flange, *l*, extending beyond the

rose-plate, which retains the rose-plate against displacement, and also serves to protect its edges and insure a nice finish.

The rose-shank is provided with a screw-thread, over and upon which the rose-plate is placed, and held down upon the base and within its rim or flange by a nut, *k*.

By this construction the knob-spindle can never work the rose-shank loose, as in the old plans, wherein the said shank is screwed into the base.

The front plates, if of wood, may, for outside use, be protected with any compound or varnish usually applied to wood, to assist it in withstanding the effects of the weather, rain, &c.

In Figs. 2 and 3 I have shown in dotted lines pins to enter the disk and the front and back plates.

I claim—

1. In a knob, a shank, a central disk, and a rim, flanged as at 1 2, combined with front and back plates placed within the said flanges and on opposite sides of the disk, substantially as described.

2. The front and back plates, *d e*, and shank *a*, in combination with the central disk, *c*, extended to or beyond the greatest external diameter of the plates, so as to form a grasping-surface for the hand and a means for holding or receiving the plates, substantially as described.

3. The combination of the flanged base *h*, screw-threaded shank *i*, rose-plate *j*, and nut *k*, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HIRAM TUCKER.

Witnesses:

G. W. GREGORY,

N. E. WHITNEY.