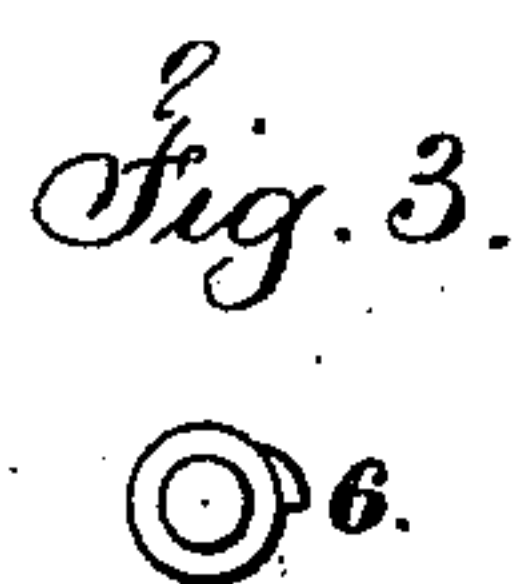
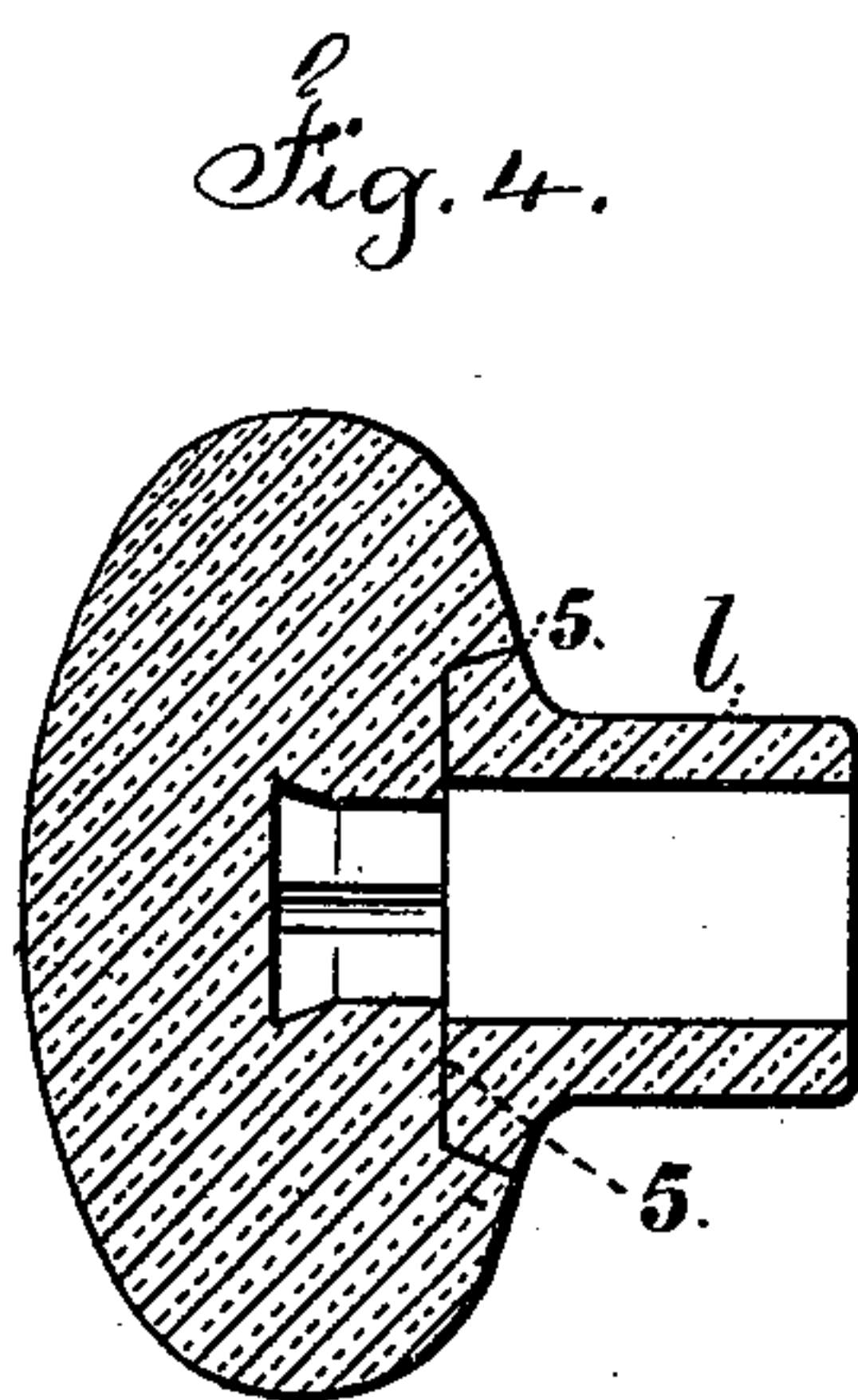
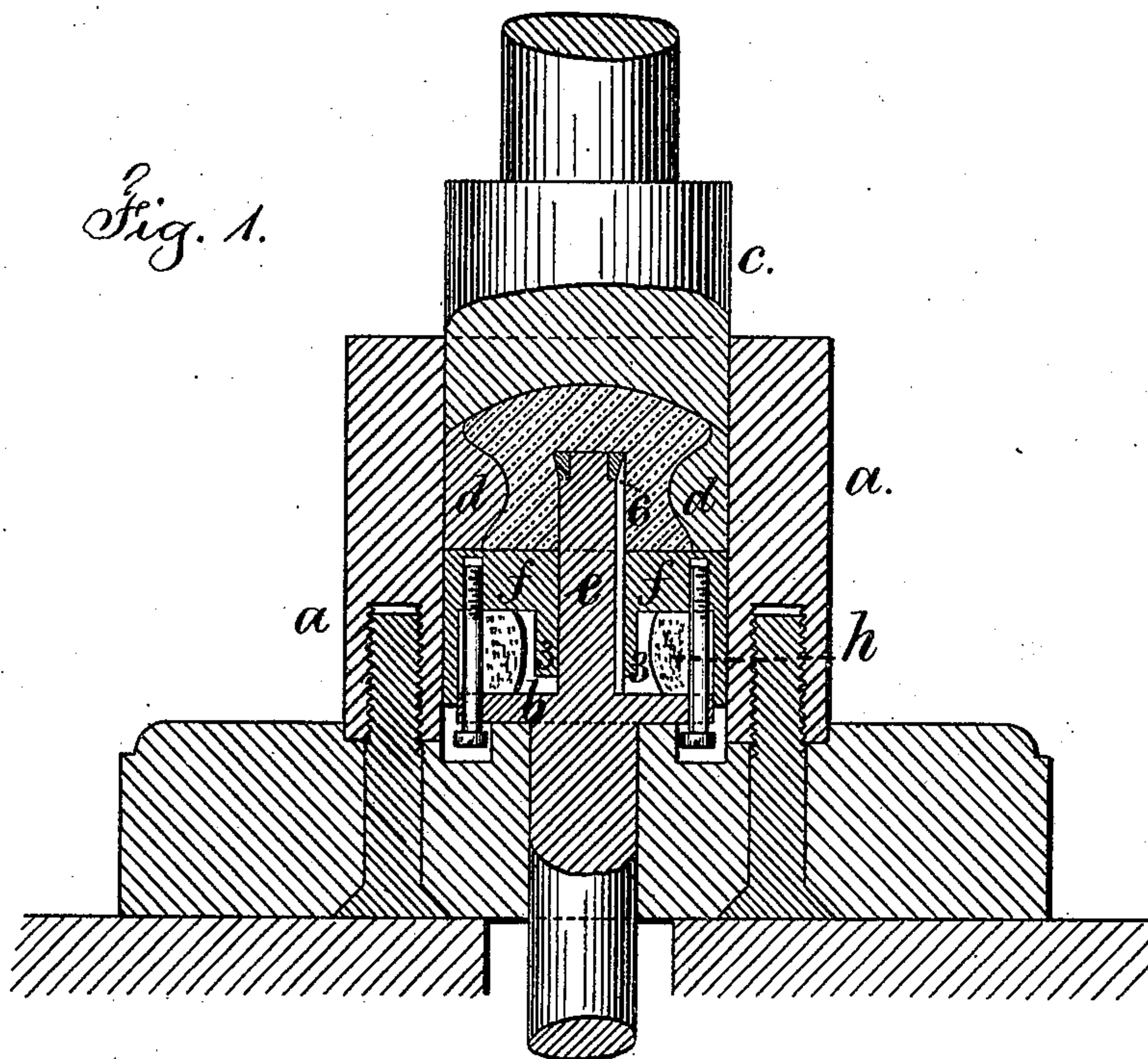


S. HILER,
Vitrified Knob.

No. 197,468.

Patented Nov. 27, 1877.



Witnesses

Chas. R. Smith
Geo. T. Pinckney

Inventor

Selah Hiler

per Lemuel W. Terrell
att'y

UNITED STATES PATENT OFFICE.

SELAH HILER, OF NEW YORK, N. Y.

IMPROVEMENT IN VITRIFIED KNOBS.

Specification forming part of Letters Patent No. **197,468**, dated November 27, 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 the Manufacture of Vitrified Knobs, of which the following is a specification:

In the manufacture of door-knobs, picture-knobs, and drawer-knobs it has been usual to provide a recess at the back of the knob for the screw or socket and the metal that is cast around the same, to hold it in place.

In many instances this recess has been undercut, or made with some portions of the inner end of the recess largest. This undercutting has usually been done with a tool or gouge while the clay is in the soft condition after molding and before baking. Difficulty arises in making these recesses perfectly uniform, and the knob is liable to injury while being gouged or undercut.

My invention is made to obviate these difficulties; and relates to the method of manufacturing said knob, by which the undercut recess is formed by a combustible ring, core, or plug, that is consumed during the process of baking or vitrifying, and hence the recess is left in a perfect and uniform shape, corresponding to the combustible core or ring.

In the drawing, Figure 1 is a section of the mold and core for forming the knob. Fig. 2 is a section of a drawer-knob, with the combustible ring in place. Fig. 3 is an end view of the plug and ring; and Fig. 4 is a section of a door-knob.

The mold is made of the cylinder *a*, lifter *b*, and plunger *c*, and two-part ring *d*, as usual in the manufacture of drawer-knobs; but in the manufacture of door-knobs this two-part ring *d* is not required.

From the lifter or bottom plunger *d* there extends the plug or core *e*, and there is a supplemental lifter, *f*, upon the lifter *b*, with a stiff spring, *h*, between them, and the extent to which the spring can be compressed is limited by a suitable stop, *3*, on the lifter.

The object of this is to cause the plug or core *e* to be partially withdrawn before the pressure is relieved from the knob, because if this is not done the clay is liable to be broken around the plug. In consequence of the spring being compressed as the clay is

squeezed in the mold, the knob will be properly molded; but as the pressure is liberated the spring raises the supplemental lifter and knob, or draws the core or plug *e* partly back, so as to loosen it from the clay sufficiently to allow its complete separation as the mold opens without injury to the knob.

This core may be cylindrical or prismatic. I have shown it with a feather, *6*, at one side to form a groove that prevents the shank or socket turning.

The conical ring of wood *i* is placed upon a stud at the end of the plug or core *e*, and its exterior is of the size and shape required to form the undercut of the recess. One of these rings is put upon the plug or core before the knob is pressed, and when the plug withdraws from the knob the ring is left in the knob, and it is burnt out in the process of vitrifying or baking.

It will be evident that other combustible material than wood may be used, and that the whole plug or core may be of combustible material, or only the separate ring.

In molding door-knobs in the aforesaid manner I am enabled to withdraw the core from the thin shank *l*, (shown in Fig. 4,) so as to make the handle and vitrified shank in one piece; but it is usually best to have separate pieces, sitting together, as shown at the line 5, and these are united by a luting of clay before the knob is vitrified. This mineral shank is thin and hollow, and corresponds generally to the shape of the metal shanks heretofore employed on door-knobs, and the hollow porcelain shank receives the metal socket for the lock-spindle, so that the porcelain shank covers up the said socket, and improves the appearance of the knob.

It is to be understood that the metal shank of the door-knob is fastened into the undercut portion of the knob, either directly or indirectly, by a thin metal tube that surrounds the spindle. This is done to prevent strain upon the thin hollow vitrified shank, and the space between this vitrified shank and the spindle may be filled in with plaster or other suitable material.

I claim as my invention—

1. The method herein specified of molding recessed knobs, by leaving in the clay a com-

bustible plug, core, or ring, and burning the same out in vitrifying the knob, substantially as set forth.

2. The combination, with the knob-mold, lifter, and plunger, of the auxiliary follower or lifter *f*, spring *h*, and plug or core *e*, substantially as and for the purposes set forth.

3. The mineral door-knob, made of the hollow shank and knob portions united, as speci-

fied, the knob portion having an undercut recess for receiving the inner end of the metal spindle socket, substantially as set forth.

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

S. HILER.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.