(No Model.)

F. M. KIDDER.

KNOB ATTACHMENT.

No. 459,444. Patented Sept. 15, 1891.

Fig. 1.

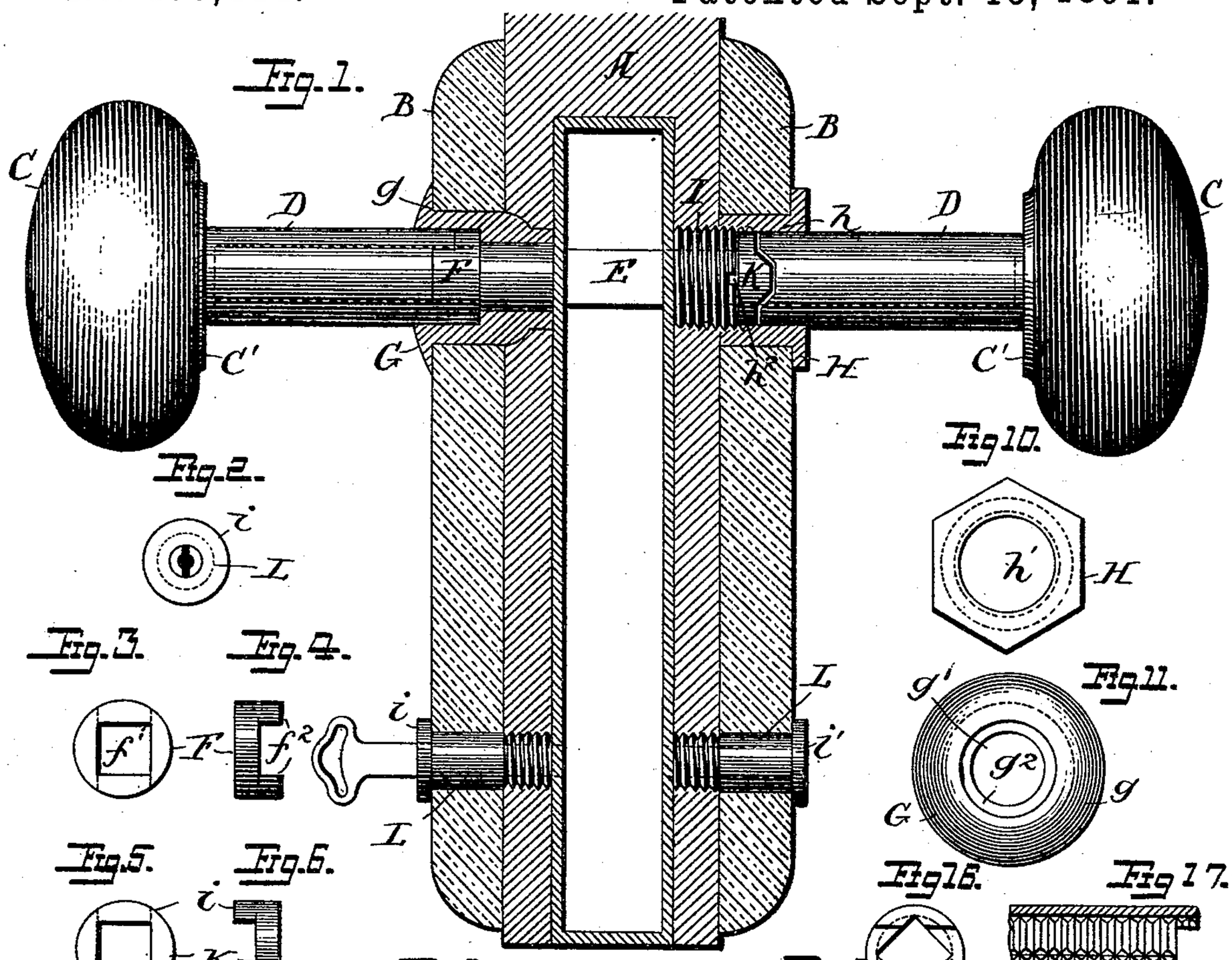


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

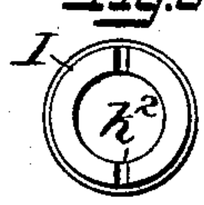


Fig. 10.

Fig. 11.

Fig. 16.

Fig. 17.

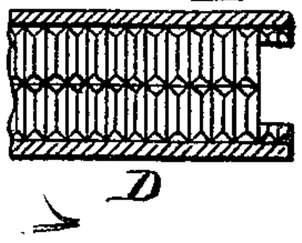


Fig. 12.

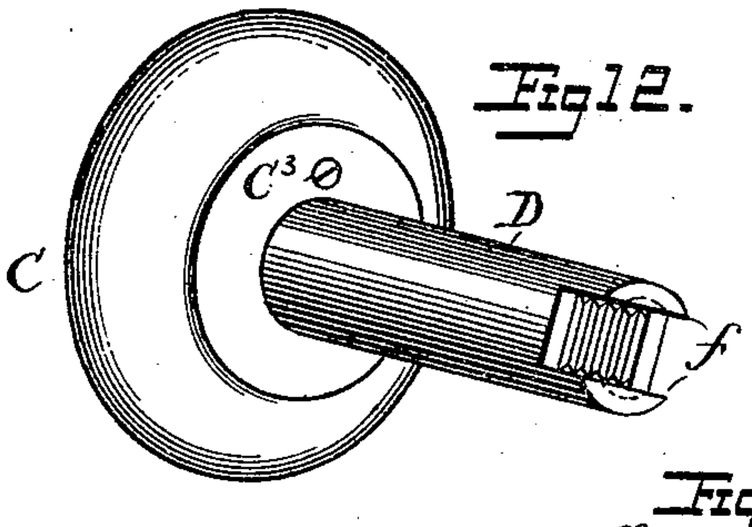


Fig. 13.

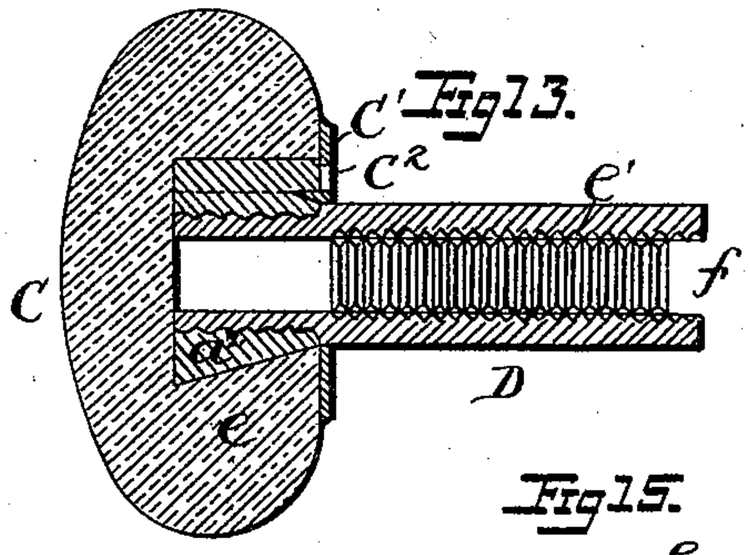


Fig. 14.

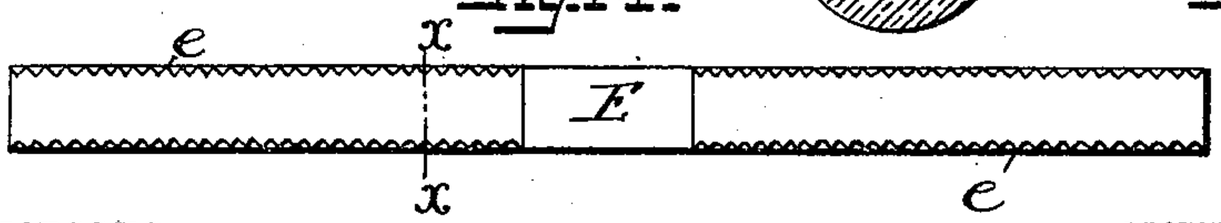
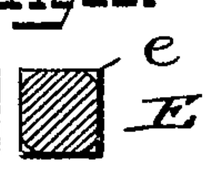


Fig. 15.



WITNESSES

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KNOB ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 459,444, dated September 15, 1891.

Application filed December 15, 1890. Serial No. 374,838. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS M. KIDDER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Door Knobs and Trimmings, of which the following is a specification.

My invention relates to new and useful improvements in door knobs and trimmings; and it consists in certain peculiarities of the construction and novel arrangement of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a sectional view of a portion of a door, the lock therein, and the ornamental plates with the knobs secured in place as they appear when ready for use. Fig. 2 is an end view of a key-guide. Figs. 3 and 4 are views of modifications of the couplings. Figs. 5, 6, 7, and 8 are detail views of couplings used in securing shanks of the knobs. Fig. 9 is an end view of a thimble. Figs. 10 and 11 are face views of securing-sleeves. Fig. 12 is a perspective view of a knob with the shank in place, showing the opening and slot therein. Fig. 13 is a sectional view of a knob and shank, showing the manner of securing the shank thereto. Fig. 14 is a side view of the spindle. Fig. 15 is a sectional view thereof. Figs. 16 and 17 are detail views of a modified form of a portion of the shank.

Similar letters refer to corresponding parts throughout the different views of the drawings.

The plates B B may be made of any size, form, or design, and are secured to one or both sides of the door, as may be desired, in a manner presently to be explained. These plates may be of various kinds of material; but I prefer to use polished onyx for this purpose, as well as for my knobs, yet in neither case do I wish to limit myself to this specific material. C C are such knobs, made in the usual oval or round form, or other shape when desired, and provided on their sides adjacent to the door with an undercut beveled or bell-shaped opening *c*, which shape will be clearly understood by reference to Fig. 13 of the drawings.

As shown in the drawings, and as is usually the case with door-knobs, the side adjacent to the door and into which the above-described opening is formed, is slightly flattened, in order that the flange *c'* on the shank D may fit snugly and be easily secured to the knob. Through this flattened side and near the edge of the beveled opening *c* is formed a hole c^2, which meets the beveled opening *c* near the bottom thereof. This hole is used to admit the molten lead, solder, cement, or other material a^2, with which the opening *c* is filled, and also for the reception and retention of a pin or screw c^3, which passes through a hole in the flange *c'* down into the material a^2, which not only secures the flange to the knob, but also prevents the material a^2 turning or slipping in its nest.

In filling the opening *c* with the securing material a^2 I insert the screw-threaded end *d* of the shank D till the flange *c'* rests on the surface of the knob. The material a^2 is then inserted through the opening c^2 till the cavity *c* is filled. As soon as the material becomes hardened the shank D is turned in the direction to unscrew it from the knob, which operation forms screw-threads in the material a^2, as well as cuts off the portion of the material which may project into the opening c^2 in the flange *c'*, after which the shank D may be easily secured to or detached from the knob at will. As shown in Figs. 12 and 13, the shanks D are formed with a square hollow, which is provided with screw-threads *e'* to engage with similar threads *e* on the edges of the spindle E, which is preferably quadrilateral in form, as shown. The inner ends of the shanks D are formed with a recess *f*, which recess or open slot may be either in alignment with the sides of the quadrilateral hole in the shank, as shown in Fig. 12, or may be at an ângle therewith, as seen in Figs. 16 and 17.

F is a coupling, having a circumference equal to that of the shank and provided with a square hole *f'*, adapted to fit snugly over the spindle E, which is passed through said hole. On one end of the coupling F is formed projections f^2 which are adapted to fit into the recess *f* on the end of one of the shanks.

These projections, like the recess in the shank, may be either in alignment with the hole *f* or at an angle therewith.

G is a sleeve, made of one piece of metal, having on its outer end an annular flange *g*, which flange presses against the outer surface of the plate B when the parts are in position. This sleeve has a hole *g'* passing through it, the outer portion of which is enlarged, as at g^2, to admit the coupling F and a portion of the shank D, as seen in Fig. 3.

H is another sleeve, adapted to be used on the opposite side of the door from the one just described. This sleeve is formed with an annular flange *h* at its outer end to assist in retaining the plate B, and has a screw-threaded opening *h'* to engage with a hollow thimble I, which is provided with screw-threads on its outer surface and is screwed partly into the hole of the door for the double purpose of serving as a lining for the same and to engage with the sleeve H by means of the screw-threads. The thimble I or tube is formed with a groove h^2 for the reception of a screw-driver when it is desired to screw the tube into the door. The flange *h* on the sleeve H has an angular rim, as shown in Fig. 10, that it may be easily tightened by means of a wrench.

K is a modification of the coupling F, having a projection *i* to fit into the recess *f;* but instead of having a square hole, as coupling F, it is open on one side, as shown in Fig. 5, that it may stride the spindle when being placed in position.

L is a key-guide, formed of one piece of material, having at its outer end an annular flange *i'* to assist in securing the plates B, and at its inner end screw-threads to engage in the wood of the door, as is clearly seen in Fig. 3.

When the shank with the recess *f'* in alignment with the sides of the quadrilateral hole in the shank is used, a coupling with the projections f^2 at an angle with the opening therein is employed, and when a shank of the form illustrated in Figs. 16 and 17 is employed the form of coupling shown in Figs. 18 and 19 is used. It will be seen by reference to the drawings, and clearly understood, that by inserting the spindle E into the hollow shank and turning it one-eighth way around the coupling, which fits over the spindle, will lock by reason of its projections f^2 into the recess of the shank and prevent the spindle turning therein.

While I have shown and prefer to use a hollow in the shank of quadrilateral form, yet I may use a hollow of cylindrical or other form.

In using the hollow of quadrilateral form it will be noticed that the screw-threads therein are cut in the sides of the hollow, and that when the spindle is being inserted the threads on its edges will not engage with the threads of the hollow till the spindle is turned slightly. This greatly facilitates the adjusting of the knobs to doors of different thicknesses, as will be readily understood.

To secure the knobs and trimmings to the door, I insert the spindle E into the shank (which has been secured to the knob, as above explained) and turn it one-eighth way round. I then place the coupling over the other end of the spindle and slip it down till it meets the recess of the shank, when the projections on the coupling will engage therewith. The spindle is now passed through the sleeve G, which, together with the key-guide L, secures the plate B to one side of the door. The tube I is now screwed into the opposite side of the door over the extending end of the spindle. The shank of the other knob is now passed through the adjusting-sleeve H, which is secured in its plate B and over the spindle and pressed toward the door till at the proper point, when the knob and shank are slightly turned on the spindle and the coupling K is placed astride of the spindle, when its projection will engage with the recess of the shank and securely lock the parts together. The plate B is now placed against the door and secured in position by means of the adjusting-sleeve H, engaging with the tube I and the key-guide L, when the device is ready for use.

It is evident that I may sometimes dispense with the plates B, in which case I use the same construction of the various parts, with the exception of the sleeves G and H, which have the same construction as shown and described, except a slight change in their external form.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a knob having an undercut opening, of a shank having a flange *c'*, with opening c^2 and screw-threaded end projecting within the knob, cementing material between said end and the knob, and screw c^3 for preventing the knob from turning on the shank, substantially as described.

2. The combination of the shanks having detachable knobs, the spindle, the couplings, and the flanged sleeves G H with the plates B, said plates being clamped between said sleeves and the door, substantially as described.

3. The combination, with the shanks having detachable knobs, the spindle, and the couplings, of the plates B, the sleeves G H, and key-guides L for securing said plates in position, substantially as described.

In witness whereof I have hereunto set my hand and seal this 13th day of December, 1890.

FRANCIS M. KIDDER. [L. S.]

In presence of—
C. C. TILLMAN,
CHAS. E. GORTON.