

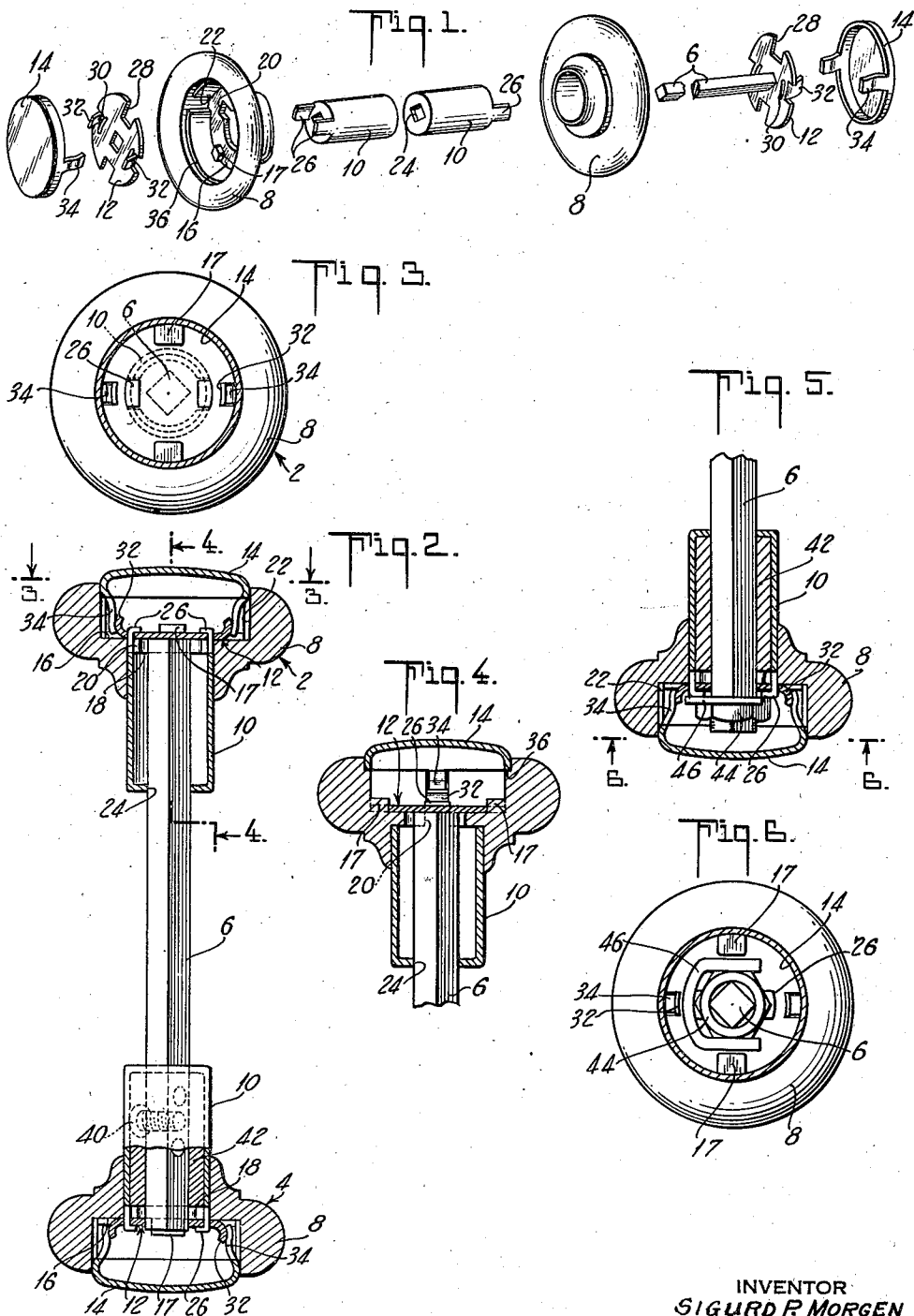
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DOOR KNOB

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DOORKNOB

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The present invention relates to door knobs, and has special reference to door knobs of the type that are made of a plurality of components assembled into a complete knob.

One of the objects of the invention is to provide a novel and improved door knob of this character in which the several components may be made of different materials for the purpose of effecting manufacturing economics and color combinations.

Another object of the invention is to provide a door knob of the character indicated which is capable of being either fixed to the spindle in the manufacture thereof, or made adjustable on the spindle to suit varying thicknesses of doors, and may be used in pairs with both knobs either fixed or adjustable or one fixed and the other adjustable.

A further object of the invention is to provide a door knob of this character which is capable of being assembled to a spindle without visible evidence of the means or the method employed.

The invention is illustrated, by way of example, in the accompanying drawings, in which—

Fig. 1 is an exploded view in perspective of a pair of door knobs and a spindle embodying features of the invention in their preferred form;

Fig. 2 is a longitudinal sectional view, partly in elevation, of a pair of knobs assembled on a spindle;

Fig. 3 is a sectional plan view taken on the line 3—3 of Fig. 2;

Fig. 4 is a sectional view, partly in elevation, taken on the line 4—4 of Fig. 2;

Fig. 5 is a sectional view, corresponding to a portion of Fig. 2, showing a modified form of securing means for the inner knob; and

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 5.

The knob assembly illustrated in Figs. 1 and 2 of the drawings comprises an outside knob 2, an inside knob 4, and a spindle 6. Each of these knobs comprises a top or cap 8, a knob shank 10, an assembly plate 12, and a cover 14.

The cap 8 of each knob is provided with an axial aperture having its outer portion counter-bored or otherwise enlarged to provide an outwardly opening recess 16. The bottom of this recess is provided with diametrically arranged lugs 17. A shoulder 18 is formed in the recess 16 adjacent the bottom of the recess. This shoulder is provided with diametrically opposed notches 20 arranged transversely of the lugs 17. The cylindrical side wall of the recess is provided with diametrically opposed vertical recesses or grooves 22 arranged in alignment with the notches 20.

The knob shank 10 of each knob is substantially cup shape and has its closed end provided with a square aperture 24 to receive the spindle, and its open end abuts against the inner side of the

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shoulder 18 and is provided with diametrically opposed ears 26 which extend through the notches 20 in said shoulder. The assembly plate 12 of each knob is positioned on the bottom of the recess 16 and is provided with notches 28 which receive the lugs 17 on the bottom of the recess 16 so as to key the plate to the knob cap. The assembly plate 12 is further provided with slots 30 which are adapted to receive the ears 26 on the knob shank 10, the assembly plate and knob shank being secured together by riveting over the projecting ends of the ears 26. The assembly plate 12 is further provided with outwardly projecting curved lugs or clips 32.

The cover 14 of each knob is cup shape and is provided with diametrically opposed curved lugs or clips 34. This cover, when the parts of the knob are assembled, is adapted to be detachably secured in the outer end of the recess 16 with its edge abutting against an annular shoulder 36 in the wall of the recess, and with the curved clips 34 snapped over the clips 32 on the cover plate 12. The cover is held from turning by the clips 34 being received in the keying recesses or grooves 22. The outer side of the cover 14 conforms approximately with the outer contour of the knob cap 8.

In the case of the outer knob 2, the assembly plate 12 is permanently secured to the outer end of the spindle 6 by spot welding or otherwise.

As customary, the inner knob 4 may be detachably secured to the spindle and may be made adjustable longitudinally of the spindle to compensate for different thicknesses of doors. In the form shown in Fig. 2, the inner end of the spindle, instead of being fixed to the plate 12, extends through an aperture in the plate, and the knob may be secured to the spindle by any suitable conventional means such as a screw 40 which extends through an aperture in the shank 10 and is screwthreaded into one of a series of apertures in the spindle. In the case of the inner knob, the knob shank 10 may either be made solid and provided with a square broached hole to receive the spindle, or, as shown, may be provided with a filler piece or stuffer 42 to serve the same purpose.

In the form of inside knob shown in Fig. 5, the spindle 6 extends through a central aperture in the assembly plate 12, and its extreme end is screwthreaded to receive a nut 44. By adjusting this nut, the spacing of the knob may be varied to compensate for different thicknesses of doors. The nut 44 may be held in adjusted position by means of a conventional lock washer 46.

It will be apparent that the parts of my improved knob may be cheaply manufactured and easily assembled and when assembled are securely held. Moreover, when assembled, the

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means and method of securing the outer knob is not visible, and the same is the case as to the inner knob shown in Fig. 5. However, if desired, any conventional means may be employed for securing the inner knob such as that illustrated in Fig. 2.

The parts of the knob may be made of different materials and of different colors. The knob cap may be made of molded plastic material or cast metal and the cover 14, shank 10 and assembly plate 12 of sheet metal.

The knob may be used in pairs as illustrated in Fig. 2 or singly. When used in pairs both knobs may be fixed or adjustable or one fixed and the other adjustable.

As will be evident to those skilled in the art, my invention permits various modifications to be made without departing from the spirit thereof or the scope of the appended claims.

What I claim is:

1. In a door knob, the combination of a knob cap provided with an axial aperture having an enlarged outer portion forming a recess and having a shoulder spaced inwardly from the bottom of the recess, a knob shank having one end abutting said shoulder, an assembly plate positioned at the bottom of said recess and secured to said shank, said assembly plate and wall of said aperture having coengaging portions to key the plate to the knob cap, and a cover for the outer end of said recess, said knob shank being adapted to receive a knob spindle with the end of the spindle engaging said assembly plate.

2. In a door knob, the combination of a knob cap provided with an axial aperture having an enlarged outer portion forming a recess, a knob shank extending into the inner end of said aperture, and an assembly plate positioned at the bottom of said recess, the inner end of said shank and said assembly plate being secured together to hold the shank from axial movement in one direction, and said shank and wall of said aperture having co-engaging portions to hold the shank from axial movement in the opposite direction, said knob shank being adapted to receive a knob spindle with the end of the spindle engaging the assembly plate.

3. In a door knob, the combination of a knob cap provided with an axial aperture having an enlarged outer portion forming a recess and having a shoulder adjacent the bottom of the recess, said shoulder having opposed notches therein, the bottom of said recess having outwardly projecting lugs, a knob shank having its inner end abutting said shoulder and having projecting ears extending through the notches in said shoulder, a knob spindle extending through the said shank, an assembly plate secured on the

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outer end of said shank, received in said recess, and provided with notches therein to receive said lugs to key the plate to the knob cap, and said assembly plate having apertures receiving said ears on the shank, said ears being adapted to be riveted over to secure the assembly plate and shank together, and a cover for the outer end of said recess, said cover and assembly plate having coengaging clips for detachably securing the cover plate to the assembly plate.

4. In a door knob, the combination of a knob cap provided with an axial aperture having an enlarged outer portion forming a recess, a knob-shank extending into the inner end of said aperture, an assembly plate positioned at the bottom of said recess, the inner end of said shank and said assembly plate being secured together to hold the shank from axial movement in one direction, and said shank and wall of said aperture having co-engaging portions to hold the shank from axial movement in the opposite direction, and a knob spindle extending through the shank with its end secured to the assembly plate.

5. In a door knob the combination of a knob cap provided with an axial aperture having an enlarged outer portion forming a recess, a knob-shank extending into the inner end of said aperture, and an assembly plate positioned at the bottom of said recess, the inner end of said shank and said assembly plate being secured together to hold the shank from axial movement in one direction, and said shank and wall of said aperture having co-engaging portions to hold the shank from axial movement in the opposite direction, a knob spindle extending through said shank and an aperture in the assembly plate, a nut screw-threaded on the end of the spindle against the outer side of said assembly plate, and a cover for the outer end of said recess detachably secured in position.

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