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C. D. SCHUNCK ET AL

DOORKNOB AND SPINDLE FASTENING

Filed April 15, 1927

Fig. 1.

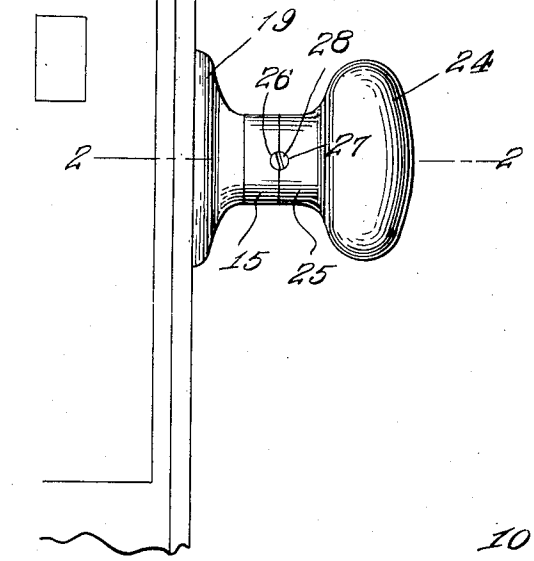


Fig. 2.

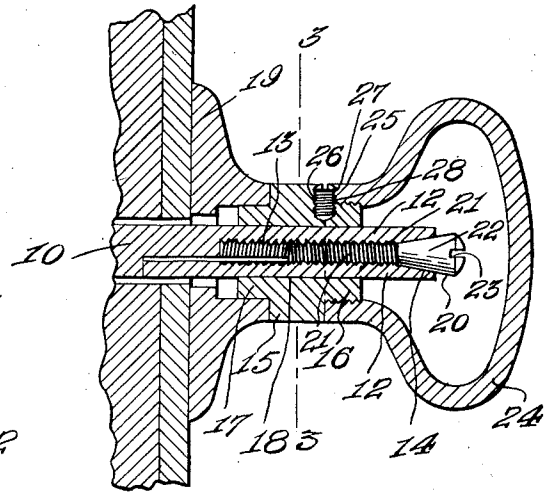


Fig. 3.

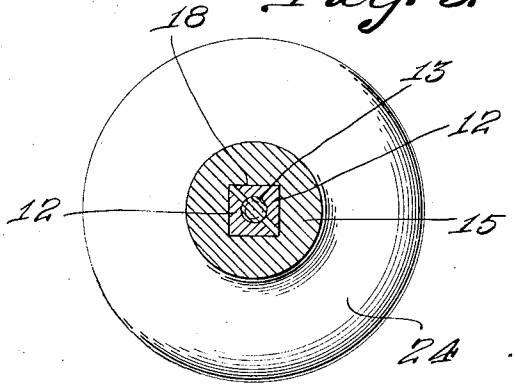


Fig. 4.

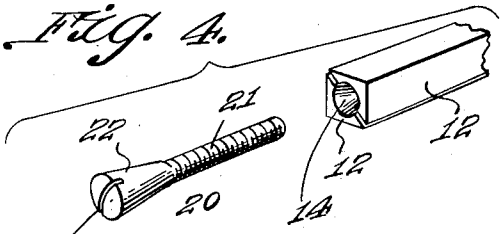
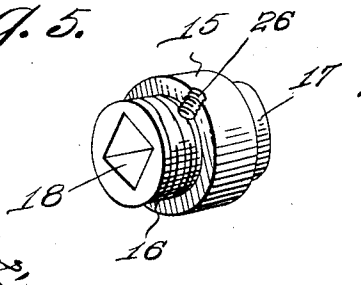


Fig. 5.



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WITNESS:

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UNITED STATES PATENT OFFICE.

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DOOR-KNOB AND SPINDLE FASTENING.

Application filed April 15, 1927. Serial No. 184,109.

This invention relates to improvements in a door knob and spindle fastening.

The primary object of the invention resides in a means for securely fastening an adjustable door knob to one end of a spindle to prevent the knob from unloosening and pulling off and to further prevent the knob from turning with respect to the spindle when the same is actuated to retract the latch mechanism of a door lock. The adjustment feature facilitates the exact fitting of the device to doors of varying thicknesses.

Another object of the invention is to provide an adjustable knob and spindle fastening in which a locking wedge is concealed within the body of the knob so as not to detract from the outward appearance thereof.

A further object is to provide a fastening of the above kind which includes a spindle having its free end split and provided with a threaded recess, the split end of the spindle being expanded into frictional engagement with the walls of a screw bore provided in a collar by means of a wedge key screw, and a hollow door knob fixed to the collar to turn thereon and to conceal the split end of the spindle and the outer end of the wedge screw.

A still further object is the provision of a knob and spindle fastening which is simple in construction, inexpensive of manufacture and efficient for the purpose intended.

With these and other objects in view, the invention resides in certain novel construction and combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claims, and are illustrated in the accompanying drawing, in which:—

Figure 1 is an elevational view of our improved knob and spindle fastening.

Figure 2 is a vertical longitudinal sectional view on the line 2—2 of Figure 1.

Figure 3 is a vertical transverse sectional view on the line 3—3 of Figure 2.

Figure 4 is a detail perspective sectional view of the split end of the spindle and the co-acting wedge key separated therefrom.

Figure 5 is a detail perspective view of the collar.

Referring more particularly to the drawing, the reference numeral 10 designates the spindle which is permanently attached to the outer door knob (not shown) as will be readily understood. The spindle 10 is square or angular in cross section and has its free end split inwardly at diametrically opposite corners to provide a pair of expansible sections 12, 12. The split end of the spindle is provided with a threaded bore 13 which terminates short of the length of the split and which bore terminates in a smooth outwardly flared wall 14 which opens onto the extreme end of the spindle.

Mounted on the spindle 10 is a collar 15 having reduced flanges 16 and 17 disposed on opposite sides thereof. The flange 16 is screw-threaded for a purpose to be presently explained. The collar 15 has a straight square bore 18 extending centrally therethrough and is of a size to freely receive the split end of the spindle when the sections 12 are in normal position. When applying this hardware to a door, an escutcheon plate 19 is first applied against the inner side of the door in the usual manner to impart a finished appearance.

After the collar has been inserted on the spindle and properly adjusted against the escutcheon, a wedge key 20 is inserted into the end of the spindle to expand the resilient sections 12, 12 against the inner walls of the square bore 18. The wedge key comprises a threaded shank 21 adapted to threadedly engage the walls of the threaded bore 13, which shank has a tapered head 22 for co-action with the flared wall 14. A kerf 23 is provided in the outer end of the head 22 for the reception of a screw driver or like implement for imparting a rotation to the wedge key. It will be seen that by screwing the wedge key into the threaded bore 13, the tapered head 22 will engage the flared walls and force the sections 12, 12 against the inner walls of the bore 14 in the collar. The friction between the spindle and the collar is so great that the collar cannot possibly pull loose therefrom.

A hollow door knob 24 is attached to the collar and which door knob has a reduced internally threaded neck 25 for threading engagement with the threads on the flange 16. The collar is provided with a threaded semi-circular recess 26 which is disposed adjacent the flange 16, while the neck of the door knob is likewise provided with a threaded semi-circular recess 27 for registration with the threaded recess 26 when the door knob has been screwed home upon the collar. A key screw 28 is threaded into the co-acting recesses 26 and 27 and into the

flange 16, whereby the knob is prevented from being rotated with respect to the collar.

From the foregoing description it will be evident that we have provided a spindle and door knob fastening in which the wedge key 20 is disposed within the body of the door knob 24 and is concealed therein together with the split end of the spindle. There is no possible way in which the door knob may be worked loose from the spindle as the collar which supports the knob is in reality locked thereon. However, the parts may be easily disassembled by unscrewing the key screw 28 and unscrewing the knob from the collar, after which the wedge key is unscrewed from the split end of the spindle to relieve the wedging action set up between the spindle and the inner walls of the collar.

While we have described what we deem to be the most desirable embodiment of our invention, it is obvious that many of the details may be varied without in any way departing from the spirit of our invention, and we therefore do not limit ourselves to the exact details of construction herein set forth nor to anything less than the whole of our invention limited only by the appended claims.

What is claimed as new is:—

1. In combination with a square spindle having one of its ends split inwardly, a threaded bore provided in the split end of said spindle, a collar having a square bore therein for the passage of said spindle, a key having threads for threading engagement with the walls of said threaded bore, co-acting means between said key and said spindle for expanding the split end of said spindle into engagement with the walls of said square bore, and a hollow door knob keyed to said collar for concealing the split end of said spindle and said key.

2. In combination with a square spindle having one of its ends split inwardly, a threaded bore provided in the split end of said spindle, the walls of said bore adjacent the outer end thereof being free of screw threads and flared outwardly, a collar having a square bore therein for the passage of said spindle, a wedge key having a threaded shank for threading engagement with the walls of said threaded bore and a tapered head for co-action with the flared walls of said bore during the inward threading of said shank to expand the split end of said spindle into frictional engagement therewith, a hollow door knob threaded to said collar for concealing the split end of said spindle and said wedge key, and a key screw co-acting with said collar and door knob to lock the door knob against retrograde movement.

3. In combination with a square spindle having one of its ends split inwardly, a threaded bore provided in the split end of said spindle, the walls of said bore adjacent the outer end thereof being free of screw threads and flared outwardly, a collar having a square bore therein for the passage of said spindle, a wedge key having a threaded shank for threading engagement with the walls of said threaded bore and a tapered head for co-action with the flared walls of said bore during the inward threading of said shank to expand the split end of said spindle into frictional engagement therewith, a hollow door knob threaded to said collar for concealing the split end of said spindle and said wedge key, co-acting recesses provided in said collar and said door knob, and a key screw threaded into said collar and received in said co-acting recesses for locking said door knob against retrograde movement.

4. In combination with a square spindle having one of its ends split inwardly to provide expansible members, a door knob, means for adjustably mounting said door knob on said spindle, said means including a collar having a square bore for sliding movement over said spindle to the desired position, a wedge key between said expansible members for expanding the same into frictional engagement with the walls of said square bore, said door knob being fixed to said collar to turn therewith, and a key screw threaded to said collar and door knob at the joint therebetween for locking said collar for turning movement with said door knob.

In testimony whereof we have affixed our signatures.

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WILLIAM J. KELLY.