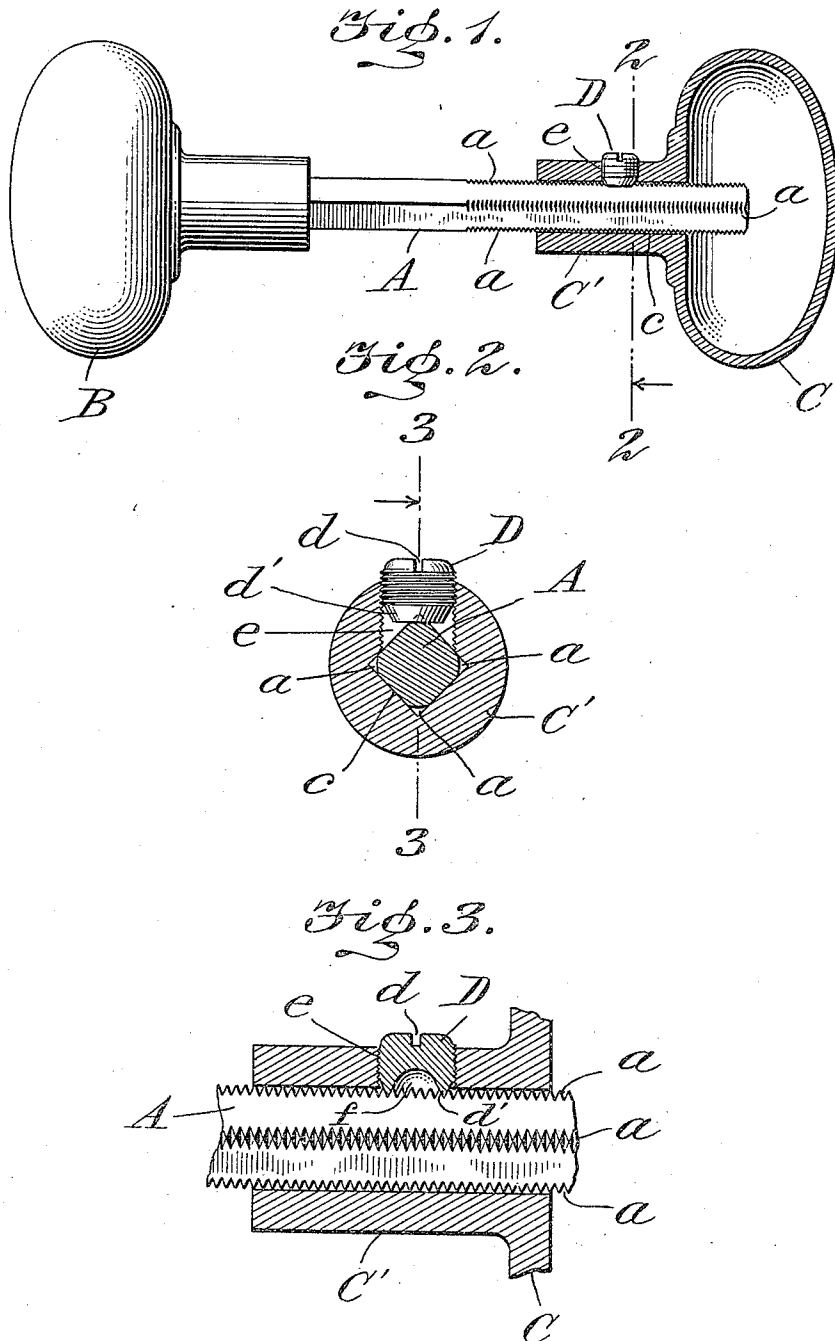


C. O. NOACK.
 MEANS FOR ADJUSTING AND LOCKING DOOR KNOBS ON SPINDLES.
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WITNESSES

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CARL O. NOACK, OF STAMFORD, CONNECTICUT.

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Application filed September 19, 1908. Serial No. 453,738.

To all whom it may concern:

Be it known that I, CARL O. NOACK, a citizen of the United States, residing in Stamford, county of Fairfield, and State of Connecticut, have invented a certain new and useful Means for Adjusting and Locking Door-Knobs on Spindles, of which the following is a specification.

This invention is a device for adjusting a door knob, and consists of means whereby one of the knobs may be adjusted relatively to the other on a knob spindle.

The means heretofore most commonly, although not exclusively employed for accomplishing this purpose consists in providing one end portion of the spindle with a series of threaded holes into which takes a screw carried by the shank of the knob. This form of adjustment is open to several objections, among which may be mentioned, first, the screw has a tendency to work loose in the threaded hole, thereby causing the knob to wobble and work loose; second, it does not permit of a nice or accurate adjustment of the knob with reference to the lock or door, the threaded holes being spaced a comparatively great distance apart, thereby frequently necessitating the employment of washers in order to secure a snug fit of the knob with reference to the lock or door, and, third, the expense of drilling and tapping the threaded holes in the spindle amounts to a very considerable item.

The present invention overcomes the foregoing objections, among others, and possesses the advantages of simplicity and durability in construction, efficiency in operation, and economy in manufacture.

To the accomplishment of these ends, I employ a binding screw having a cup-shaped inner end, the same presenting a circular thin edge adapted to engage with at least two of a series of screw threads or notches formed on an edge of a knob spindle, said screw being supported in a threaded hole provided in the shank of a knob. The particular form of screw, characterized by the cup shaped inner end, has been found to secure the best results in practice, for the reason that the thin edge wedges itself in place at two points between the threads or notches of the spindle, so that the screw does not work loose in the knob, thereby obviating one of the common defects in ordinary door knobs.

In the accompanying drawings I have

illustrated one practical embodiment of the invention, wherein—

Figure 1 is a side elevation, with one knob in section, illustrating my invention. Fig. 2 is a cross section on an enlarged scale, the plane of section being indicated by the dotted line 2—2 of Fig. 1. Fig. 3 is a longitudinal section, on the line 3—3 of Fig. 2, a part of the spindle being shown in elevation.

In Fig. 1 a knob spindle, A, and two knobs, B, C, are shown, one knob, B, being secured in a fixed position and by any usual means on said spindle, while the other knob, C, is adjustable lengthwise of said spindle. As shown, spindle, A, is substantially square in cross section, although other forms of spindles may be used, that is, spindles of polygonal, rectangular, triangular or circular cross sections can be employed.

An essential feature is a series of notches, *a*, in spindle, A. When a spindle with flat sides is used, such as the rectangular spindle shown, a plurality of series of notches, *a*, are provided, preferably on said spindle, each series of notches being produced in one of the angles or corners of said spindle.

The adjustable knob, C, is, preferably, hollow, see Fig. 1, in order to receive an end portion of spindle, A, and said knob is provided with a hollow shank or sleeve, C', the opening, *c*, in which corresponds in cross section to spindle, A, whereby knob, C, is precluded from rotating on said spindle and at the same time said knob may be adjusted lengthwise on said spindle to occupy a desired position thereon.

A clamping member, D, is carried by knob, C, said member being adapted for interlocking engagement with a notch, *a*, or with a plurality of such notches, *a*, on one corner of spindle, A. The clamping member D is a screw which is threaded into an aperture, *e*, tapped in knob, C', so that its nick, *d*, is exposed for access, whereby the screw, D, may be rotated by the operation of a screw driver, or other implement. Screw, D, is shown as having a tapering inner end, *d'*, and, preferably, said screw is provided with a recess, *f*, in said inner end, see Fig. 3. This construction enables screw or clamping member, D, to engage with a plurality of notches, *a*, in one corner of spindle, A, for the purpose of locking knob, C, securely in a fixed position on said spindle.

In the manufacture of a spindle, a piece

of metal of the required form and size is produced, and a screw thread is cut thereon for a suitable length, said thread being formed on the angles or corners of the spindle, while the faces thereof are left in a smooth condition, whereby notches, *a*, are provided in each of the several corners, the spindle being thus economically manufactured.

10 Ordinarily the screw receiving opening in knob shank, *C'*, is provided therein at a point to open through one of the flat sides of the square spindle opening, but according to the present invention the opening, *e*, is drilled in knob shank, *C'*, to extend through an angle or corner of the spindle opening, *e*, in said knob shank, whereby member or screw, *D*, is adapted for engagement with one of the notched corners of spindle, *A*.

20 The operation of the device will be manifest from the foregoing description, but it may be referred to briefly as follows:—The spindle is inserted through the lock and door, shank, *C'*, of knob, *C*, is slipped over the notched end portion of said spindle until it is snugly fitted to the lock or door, and member or screw, *D*, is turned by a screw driver until its tapered end, *d'*, is interlocked with a plurality of notches, *a*, in said spindle, thereby securing knob, *C*, firmly on spindle, *A*.

The new device possesses many practical advantages as compared with the ordinary well known knob. Knob *C*, may be adjusted easily and quickly to any desired position on the notched part of spindle, *A*, and screw, *D*, thereafter tightened so as to interlock it with said spindle, these operations being performed without requiring the care and time necessary ordinarily to bring the screw hole of the knob into register with one of the tapped screw holes in the spindle. Furthermore, my device wholly obviates the use of washers which must frequently be used in securing a snug fit of the knob to the lock, for the reason that notches, *a*, of each series are provided close together in one corner or angle of the spindle, so that the screw, *D*, can be interlocked with the notched spindle practically at any point of adjustment of knob, *C'*, thereon. The series of notches on each corner or angle of spindle, *A*, is advantageous because said spindle can be inserted in any position in the lock, and knob, *C*, can be applied in any position on the notched part of spindle, whereupon screw, *D*, can be tightened, these operations

precluding the care usually required to bring the screw hole of the ordinary knob into registration with one of the screw holes of the usual spindle. Again, the use of a clamping member or screw constructed for cooperation with a plurality of notches provides for a wedging engagement of said member or screw with a notched spindle, thus precluding, practically, the risk of the screw working loose, and the knob from becoming detached, thereby obviating one of the most annoying objections to the ordinary door knob. In my new device, the tapering end of the screw is adapted to be wedged into engagement with the walls of the notches, or the sides of the threads, in spindle, *A*, thus obviating the possibility of injury to, or mutilation of, the notches or threads.

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

1. In a device of the class described, a spindle provided with a plurality of recesses and shoulders, a knob, and a retaining screw threaded into the shank of said knob, said screw being provided at its inner end with a central recess, thereby forming a thin circular edge on said end which is adapted to enter directly into wedged frictional engagement with a plurality of the shoulders and notches on said spindle, whereby the knob is held against longitudinal movement on the spindle and the screw is precluded from working loose in the knob.

2. In a device of the class described, a spindle provided with notches and beveled shoulders constituting sections of a screw thread, a knob, and a screw having a cupped end whereby there is formed a thin tapering circular edge, the cross sectional taper of said circular edge corresponding substantially to the bevel on the shoulders of said spindle, said screw being mounted in the shank of said knob and the tapered circular edge at the inner end of said screw being wedged into frictional engagement with a plurality of said beveled shoulders.

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

CARL O. NOACK.

Witnesses:

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