

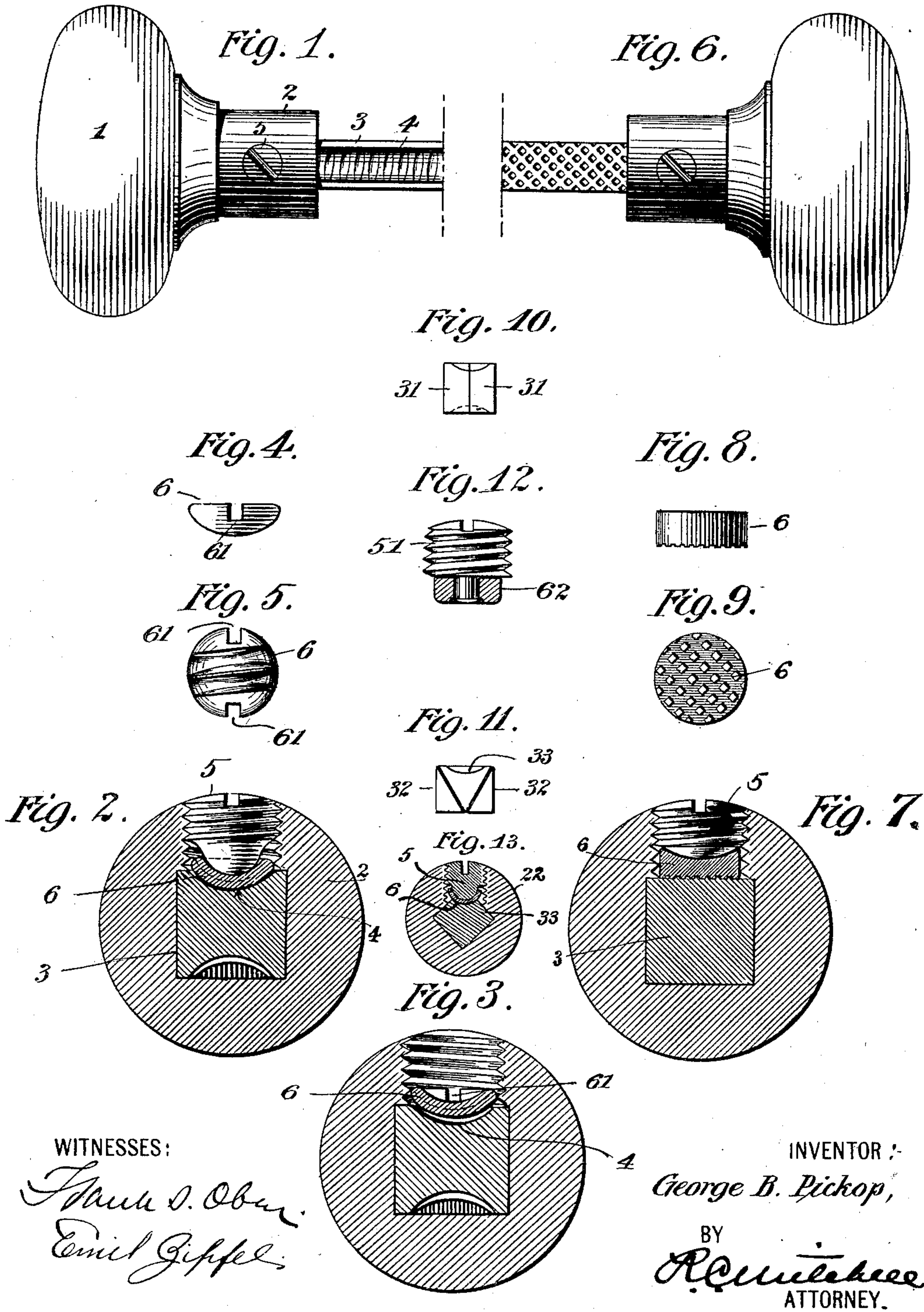
**No. 697,168.**

**Patented Apr. 8, 1902.**

**G. B. PICKOP.**  
**NOB ATTACHING DEVICE.**

(Application filed Dec. 17, 1901.)

(No Model.)





# UNITED STATES PATENT OFFICE.

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## KNOB-ATTACHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 697,168, dated April 8, 1902.

Application filed December 17, 1901. Serial No. 86,211. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE B. PICKOP, a citizen of the United States, residing at New Britain, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Knob-Attaching Devices, of which the following is a full, clear, and exact description.

My invention relates to improvements in hardware, and particularly to an improvement in the construction and mode of operation of a fastening device whereby a door-knob or the like may be secured to the knob-spindle.

The object of my invention is to provide a simple, efficient, durable, and effective device or means for reliably securing a knob upon a spindle in any desired position. Heretofore it has been common to provide screw-holes in knob-spindles at various points and to fasten the knob thereto by screws; but this permits of only step-by-step adjustment. Consequently washers are commonly provided with articles of this kind, the desired number of which must be inserted between the inner end of the knob-shank and the door or lock to take up any undesirable looseness. This old form produces an effective means of holding, but does not permit close adjustment, obviating the necessity of washers. Other means have been devised whereby an effort has been made to wedge the spindle into connection with the door-knob by having the spindle formed in several parts, as will hereinafter be shown; but these do not afford other than frictional means of adjustment and are likely to become loosened by use.

In the drawings, Figure 1 is a side elevation of a door-knob and a portion of the spindle. Fig. 2 is a section through the knob-shank, adjusting-screw, and spindle, said figure illustrating the construction upon enlarged proportions. Fig. 3 is a similar view, the adjusting-screw being removed. Fig. 4 is a side elevation of a detail of construction. Fig. 5 is a view of the under side of the detail shown in Fig. 4. Fig. 6 is a view similar to Fig. 1, illustrative of a modification. Fig. 7 is a section of Fig. 6 on a line cutting through the adjusting-screw. Fig. 8 is a side eleva-

tion of a detail of modified form. Fig. 9 is a view of the under side of the detail shown in Fig. 8. Figs. 10 and 11 are end elevations of knob-spindles of modified types. Fig. 12 is a side elevation, partly in section, of modified details of construction. Fig. 13 is a sectional view of another modification.

In the preferred construction, 1 is a knob.

2 is a knob-shank.

3 is a knob-spindle.

4 is a groove formed in the knob-spindle and suitably roughened—for example, by transversely-extending depressions or knurls, preferably so formed as to be deepest at the center, gradually diminishing in depth toward the edge of the groove for the purpose of allowing the scalp to more readily free itself and slip along when the set-screw 5 is retracted. The set-screw or adjusting-screw is carried by the knob-shank 2, as clearly shown. The inner end of the set-screw is preferably rounded off.

6 is a device which I shall term herein the "scalp," in that it fits loosely over the rounded inner head of the screw 5. The size of the scalp is preferably such that it lightly engages with the sides of the screw-hole of the shank 2. For convenience notches 61 61 may be formed in the scalp 6 to give slight spring thereto for the purpose hereinafter described. The convex face of the scalp 6 is preferably shaped or roughened to correspond with the roughened channeled portion of the spindle 3.

In the particular construction shown in Figs. 1, 2, 3, 4, and 5 it will be seen that the parts may be assembled by slipping the knob-shank 2 upon the spindle 3, then placing the scalp 6 within the screw-hole, lightly forcing it down to the spindle, then following said scalp with the screw 5. By setting down the screw 5 the scalp 6 is pressed down, so as to bear tightly upon the knurled portion of the spindle 3, and securely holds the knob in a fixed position relatively to the said spindle. The scalp effectually prevents the working loose of the spindle in the shank and also prevents the set-screw from becoming loosened or working out. The depressions or knurls hold the scalp in a fixed position, and being so held the scalp cannot impart any twisting



motion to the screw tending to loosen or retract the same. The scalp performs the function of a contact-piece, and by the use of the same accurate adjustment may be attained 5 and the necessity of forming screw-holes in the knob-spindle avoided. The knob may be adjusted longitudinally upon the spindle by slightly retracting the set-screw 5. By preference the convex face of the scalp is formed 10 in a slightly-larger arc than the concaved channel 4 in the spindle, so that when the set-screw is retracted the central part of the scalp will have a tendency to spring up, readily freeing it from engagement with said 15 spindle.

In Figs. 6, 7, 8, and 9 I have shown a modified form. Instead of grooving or channeling the knob-spindle the same is left substantially square or with flat surfaces. One 20 or more of these flat surfaces is preferably knurled or roughened. In the modification it is preferred that the scalp should also be roughened, (see Figs. 8 and 9,) so that when the parts are assembled, as shown in Fig. 7, 25 the knob will be locked upon the spindle.

In Figs. 10 and 11 I have shown end views of well-known forms of knob-spindles.

In Fig. 10 the knob-spindle is shown as formed of two members 31 31 and adjacent 30 edges of said sections being cut away to form a channel, said channel being knurled to receive the scalp. When the scalp is put into place and the set-screw inserted, the said scalp will tend to wedge the said sections 35 apart, and thus not only hold the knob by the engagement of the set-screw, scalp, and spindle but also by side friction.

In Fig. 11 I have shown one type of knob-spindle in which the spindle is made of three 40 parts 32 32 33. The part 33 serves as a wedge between the parts 32 32, so that when the scalp is pressed against the upper channeled and knurled side of the member 33 it will wedge the sides 32 32 apart, bringing them 45 into tight engagement with the knob-shank, which frictional engagement, when supplemented by the holding effect of the scalp, forms an effective fastening.

In Fig. 12 the scalp 62 is centrally perforated, and the tip or tenon at the inner end 50 of the screw 51 is extended through said scalp and riveted underneath the same, so that the scalp may loosely turn thereon. The diameter of the scalp should be such as to allow of 55 freely entering the threaded hole in the knob-shank. This serves as one modification, and in this form the screw and the scalp are prevented from becoming separated.

In Fig. 13 instead of grooving the flat face 60 of the knob-spindle the said spindle is knurled

or grooved along one edge, and the hole for the reception of the set-screw and scalp is placed in the knob-shank, so as to properly engage said scalp with the knob-spindle, so that when the parts are assembled a three- 65 point wedge contact is effected to securely hold said parts together. In this figure 33 is the spindle, 6 the scalp, and 5 the set-screw.

What I claim is--

1. In a device of the character described, a knob-spindle, a knob and a set-screw, openings in said knob for said spindle and set-screw, an independent contact-piece between the inner end of the screw and the knob-spindle and frictionally fitting the opening adapted to receive the screw. 70

2. In a knob-attaching device in combination, a knob, a shank thereon, a spindle-passage therein extending longitudinally of said 80 shank, a transverse opening therein said opening being screw-threaded, a scalp or contact-piece slightly smaller than the largest diameter of said transverse opening, and a screw coacting with said contact-piece and carried 85 in said transverse opening.

3. In a knob-attaching device in combination, a knob, a shank therefor, a spindle-passage therein extending longitudinally thereof, a transverse opening in said shank extending 90 into said spindle-passage, a flexible scalp or contact-piece carried in said opening and of slightly-less diameter than the largest diameter of said transverse opening, and a screw coacting with said contact-piece and fitted in 95 said transverse opening.

4. In a knob-attaching device, a knob, a shank, a longitudinal spindle-passage, an opening extending transversely of the spindle-passage, a contact-piece within said opening of slightly-less diameter than the diameter of said opening, a screw coacting with said contact-piece to advance or retract the same. 100

5. In a knob-attaching device in combination, a knob, a shank, a longitudinal passage therethrough to receive the knob-spindle, an opening in the side of said shank extending into said spindle-passage, a set-screw adapted to fit said opening, a scalp or contact-piece at 110 the inner end of said set-screw said scalp being of less diameter than the diameter of said screw, and cup-shaped, substantially as and for the purpose described.

Signed at New Britain, Connecticut, this 115 14th day of December, 1901.

GEORGE B. PICKOP.

Witnesses:

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CHARLES A. BLAIR.