(No Model.)

C. PRESTON.

KNOB ATTACHMENT.

No. 443,260. Patented Dec. 23, 1890.

Fig. 1

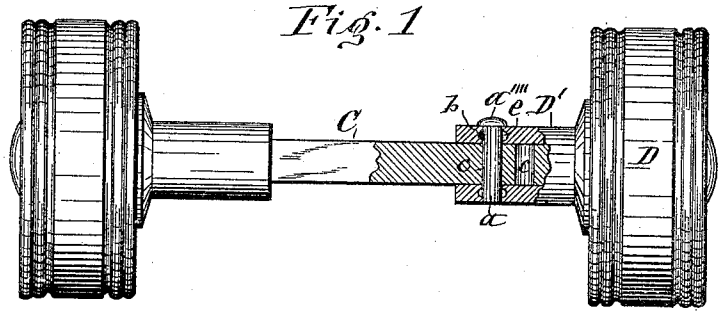
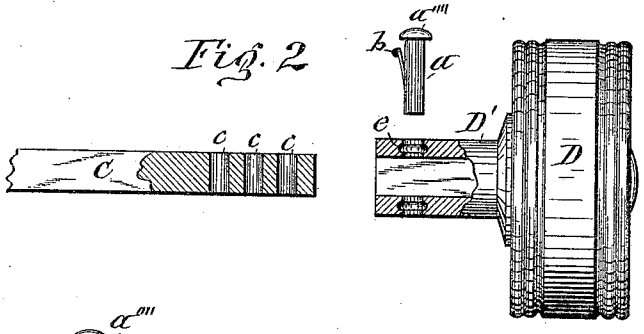


Fig. 2



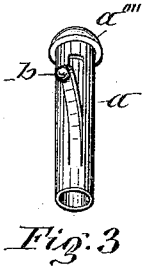


Fig. 3

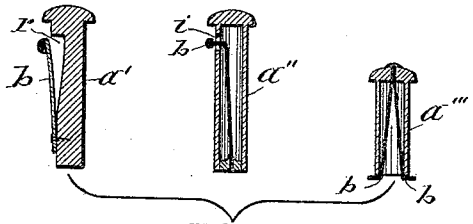


Fig. 4

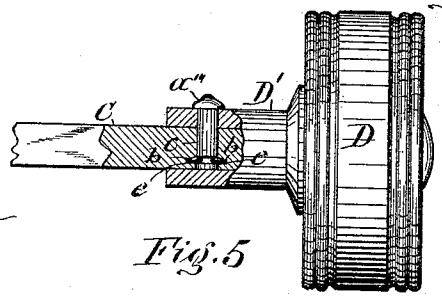


Fig. 5

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UNITED STATES PATENT OFFICE.

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KNOB ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 443,260, dated December 23, 1890.

Application filed April 30, 1890. Serial No. 350,003. (No model.)

To all whom it may concern:

Be it known that I, CHARLES PRESTON, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Knob Attachments, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of knob attachments in which a coupling pin or screw is inserted in transverse perforations in the knob-shank and spindle, and the invention has special reference to knob attachments in which the coupling-pin is retained in its operative position by a spring-catch locking the pin in its seat in the perforations of the spindle and knob-shank; and the invention consists in an improved construction and combination of parts in which the coupling-pin is maintained rigid or inflexible and possessed of ample strength to securely retain the knob on the spindle, all as hereinafter more fully explained, and specifically set forth in the claim.

In the annexed drawings, Figure 1 is partially a side view and longitudinal sectional view of a knob attachment embodying my invention. Fig. 2 shows the knob detached from the spindle. Fig. 3 is an enlarged detached perspective view of the coupling-pin. Fig. 4 represents longitudinal sections of modifications of the coupling-pin, and Fig. 5 is a longitudinal sectional view of a modification of the attachment of the knob to the spindle.

Similar letters of reference indicate corresponding parts.

C represents the spindle of a door-lock, and D denotes the knob, which is removably mounted on said spindle, the shank D′ of the knob being provided with the usual longitudinal square socket for the reception of the end portion of the square spindle C, and a pin *a*, passing transversely through the shank D′ and spindle C, couples said parts together. Said shank is provided with a single transverse perforation for the reception of the pin *a*, and the spindle is provided with a plurality of perforations *c c* at different distances from its end, so as to allow the knob to be adjusted to the thickness of the door and secured by the coupling-pin passing through one of the perforations *c c*.

In order to securely retain the coupling-pin *a* in the perforations of the knob-shank D′ and spindle C, I provide said pin with a suitable spring-catch *b*, the form of which, as well as its connection with the coupling-pin, is susceptible of many modifications, four of which are illustrated in the annexed drawings.

Fig. 3 illustrates my preferred form, in which the pin *a* consists of a metal tube provided on one end with a head *a''''*, and having the spring-catch *b* formed integral with it by longitudinal slits extending part way the length of the tube and a transverse slit extending across the strip between the longitudinal slits at one end and leaving the opposite end of said strip integral with the tube. The main portion of the strip thus formed is bent outward to normally stand in such a position, and the free end is bent farther outward at such an angle as to form the catch *b*, which is preferably of the shape of a small knob.

In Fig. 4, *a′* represents a solid pin formed with a longitudinal recess *r* in its side. The catch *b* is formed of a separate strip of spring-metal riveted or otherwise rigidly attached at one end to the side of the pin and standing with free end normally outward from the pin and in such a position as to allow it to be pressed into the recess *r*. *a″* in said Fig. 4 represents a tubular pin, which is provided near its head with an aperture *i* through its side. The catch *b* is similar to or of the same form as that used in connection with the pin *a′*, but is located with its main portion inside of the tubular pin and secured therein at one end by solder or other suitable means and has its opposite end projecting normally outward through the aperture *i*.

a''' in Fig. 4 denotes another tubular pin, but shorter than the pin *a″*, for the reason hereinafter explained. In connection with this pin *a'''* I employ two spring-catches *b b*, both of which are located with the main portions inside of the pin and rigidly secured at one end to the head of the pin, the free ends of the catches extending beyond the open end of the pin and being bent outward over said end of the pin. In every instance, however, the coupling-pin is maintained rigid or inflexible.

For using either of the pins *a*, *a′*, or *a″*, I form in the inner side of the transverse perforation or pin-hole of the knob-shank D′ a

circumferential groove *e*, as shown in Figs. 1 and 2 of the drawings. In introducing the coupling-pin *a* or *a'* or *a''* the spring-catch *b* yields laterally automatically or may be forced back toward the pin by manipulation so as to allow the catch to enter the perforation of the knob-shank, and in forcing the pin farther into said shank the catch *b* automatically springs into the groove *e*, and thereby retains the coupling-pin in the perforations of the shank D' and spindle C, as illustrated in Fig. 1 of the drawings. For using the pin *a'''* I form the recess *e* in the side of the perforation *c* of the spindle C, as shown in Fig. 5 of the drawings. In inserting said pin into the perforations of the knob-shank D' and spindle C the two catches *b b* have to be pressed back into the pin so as to prevent their outward projection and allow them to enter the perforation of the shank D'. Then in pushing the pin through said perforation and into the spindle C until the inner end reaches the recess *e* the catches *b b* automatically spring outward from the pin and into said recess, and thereby retain the pin sufficiently to prevent its accidental withdrawal. The groove or recess *e* is either semicircular or V-shaped in cross-section to allow the catch *b* to be crowded back toward the pin when force is applied to the latter to withdraw the same from the shank and spindle when desired to remove the knob from the spindle.

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

In combination with the perforated spindle, the knob-shank perforated correspondingly and provided with a groove in the side of the perforation, an inflexible coupling-pin passing through said perforations, a spring projecting from the side of said pin, and a catch on the spring engaging the aforesaid groove, substantially as described and shown.

In testimony whereof I have hereunto signed my name this 28th day of April, 1890.

CHARLES PRESTON. [L. S.]

Witnesses:
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MARK W. DEWEY.