(No Model.)

G. PRICE.

KNOB ATTACHMENT.

No. 261,761. Patented July 25, 1882.

Fig. 1.

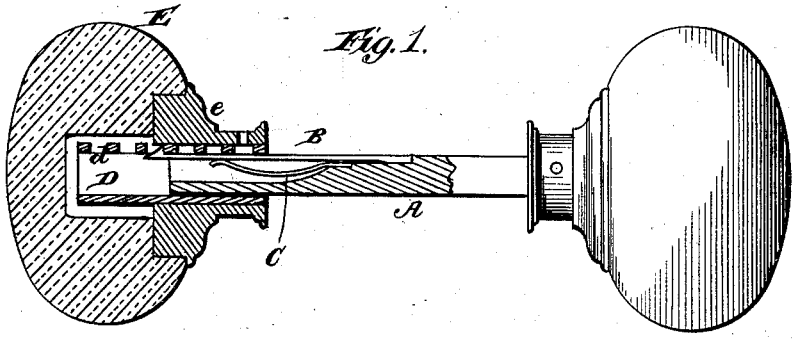


Fig. 2.

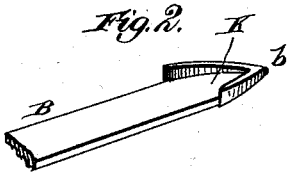


Fig. 3.

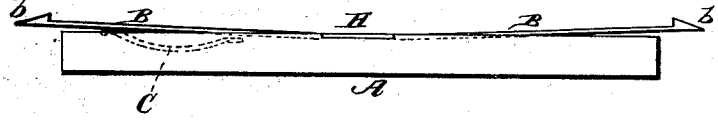


Fig. 4.

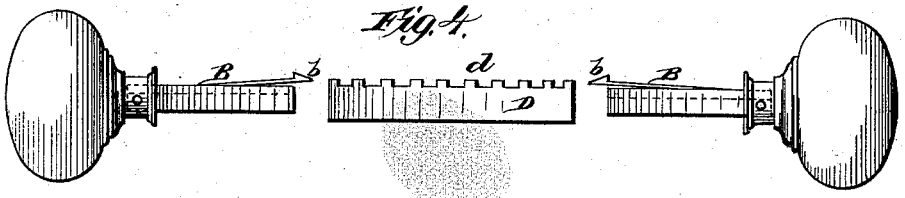


Fig. 5.

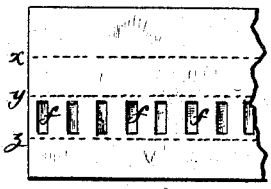
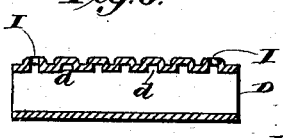


Fig. 6.



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UNITED STATES PATENT OFFICE.

GEORGE PRICE, OF BIRMINGHAM, COUNTY OF WARWICK, ENGLAND.

KNOB ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 261,761, dated July 25, 1882.

Application filed February 2, 1882. (No model.) Patented in England March 10, 1881, No. 1,031.

To all whom it may concern:

Be it known that I, GEORGE PRICE, a subject of the Queen of Great Britain, residing at Birmingham, in the county of Warwick and Kingdom of England, pattern-maker, have invented new and useful Improvements in Attaching Door and other Knobs or Handles to their Spindles, (for which I have obtained a patent in Great Britain, No. 1,031, bearing date March 10, 1881,) of which the following is a specification.

This invention relates to means for securing door-knobs on their spindles or arbors.

Prior to my invention a serrated spring has been attached at one of its ends to the free end of the knob-spindle, and the neck of the free knob, or knob unprovided with a spindle, has been adapted to receive said spring and free end of the spindle, and further provided with a shoulder that engages in the line of teeth of said spring when the spring and spindle are inserted in the neck of the free knob. In another instance the free end of the knob-spindle has been formed with a series of notches, and a spring-catch for engaging the same secured within the neck of the free knob. Under my present invention, however, I provide a square tube formed independently of the neck of the door-knob, and having an interior line of rack-teeth, in which the spring-catch that is attached to the knob-spindle engages when the spindle and its spring are passed in said tube, and by making the toothed tube separate or independent of the knob-neck I am enabled to use it either within the door itself or in the knob-neck, for the purposes hereinafter explained. I also form the catch at the end of the spring in a peculiar manner, so as to facilitate the withdrawal of the spring and spindle from said tube, as hereinafter more fully set forth.

In the drawings, Figure 1 shows a section through the free knob, a portion of the spindle, and the devices for connecting the spindle with the knob. Fig. 2 is a perspective view of the free or engaging end of the spring-catch. Fig. 3 shows the spindle provided with a double spring-catch. Fig. 4 shows the tube provided with rack-teeth, and the two knobs each having a short spindle with a spring-catch. Fig. 5 shows a portion of a blank from which the tube with rack-teeth can be formed. Fig. 6 is a longitudinal section through the tube formed from the blank shown in Fig. 5.

Referring to the drawings by letter, A indicates the knob-spindle, and B the spring-catch that is secured thereto so as to leave one of its ends free. This catch is normally forced out from the spindle by a spring, C, located in a recess in the spindle, and shown in dotted lines, Fig. 3.

b indicates the hook that is formed at the free end of the spring-catch, and adapted to engage in the line of rack-teeth *d* of the tube D, which is formed independently of the neck *e* of the door-knob E, and made square in cross-section and provided with an inner line of rack-teeth. The rack-teeth in this tube can be formed in several ways, one of which is shown in Figs. 1 and 4, in which portions of the tube are cut away, so as to leave cross-bars, which constitute the teeth *d*. Another way is shown in Figs. 5 and 6, in which a metal blank is formed with a line of indentations, *f*, and the blank then bent along the dotted lines *x y z*, to form the tube shown in Fig. 6, said indented portions of the tube forming the interior line of teeth, *d*. The hook portions of the spring-catch are cloven or recessed, as shown in Fig. 2, for the purpose hereinafter explained.

The manner of using my invention is as follows: The tube D can be secured in the neck *e* of the free knob by means of a pin or screw passed transversely through one side of the knob-neck into the tube, or by any other suitable means, and the free end of the knob-spindle A, with the spring-catch, is then passed through the door and into said tube, the catch engaging in the line of rack-teeth, and thereby locking the parts together; or the spindle can be provided with a double spring-catch, or with two spring-catches, one at each end, as in Fig. 3, the simplest way being to provide a single spring plate or strip with two hooks, one at each end, so as to form a double spring-catch, and then to secure this at its center to the middle of the spindle, as at H. In this case each knob will have a tube D secured in its neck, and hence the spindle can be inserted in an opening in the door, and the two knobs can then be detachably connected with the spindle which projects out upon each side of the door.

Again, each knob can be provided with a short spindle having a spring-catch, as in Fig. 4, and then can be inserted in tube D, one spindle being inserted in each end of the tube, which will be fixed in the door, instead of being secured to the neck of the knob, whereby the knob-spindle can be made in two parts, as stated. In this instance it may be necessary to make one or both of the knobs detachable from its spindle, so that it can be removed and a pin pushed longitudinally along the spindle to depress the spring-catch and release it from the toothed tube, which is possible, as the spring-catch is located in a longitudinal groove in the spindle, as shown by dotted lines in Fig. 4.

The spindle can be grooved the whole or a portion of the length of the spring-catch, and where two spring-catches are used on one spindle, as shown in Fig. 3, the groove can be continued the entire length of the spindle. A suitable hole, I, is formed through the tube D, and a corresponding hole is also formed through the neck *e* of the knob, so that a pin can be inserted in order to push down the spring-catch, and thus disengage it from the rack-teeth to allow the withdrawal of the spindle, this hole being of course made sufficiently near the end of the tube to admit of the catch portion of the spring passing the last tooth before it is free from said pin.

To facilitate the withdrawal of the spindle, the spring-catch is formed as in Fig. 2, from which it will be seen that the spindle and spring-catch can be drawn out and the pin still pressed down upon the spring-catch until it is in contact with the extremity of the catch, since the pin will be received in the recess K of the catch as the latter and its spindle are being withdrawn, the pin holding down the spring-catch until the extreme end of the latter passes from under the pin.

What I claim is—

In a knob attachment, the combination, with the knob and the spindle provided with the spring-catch B, of the tube D, constructed independently of the knob and its neck, and having an interior series of teeth, said tube being adapted for use either in the knob-neck or in the door, as and for the purposes set forth.

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