

(No Model.)

T. E. WARDWELL.  
KNOB ATTACHMENT.

No. 525,877.

Patented Sept. 11, 1894.

Fig. 1.

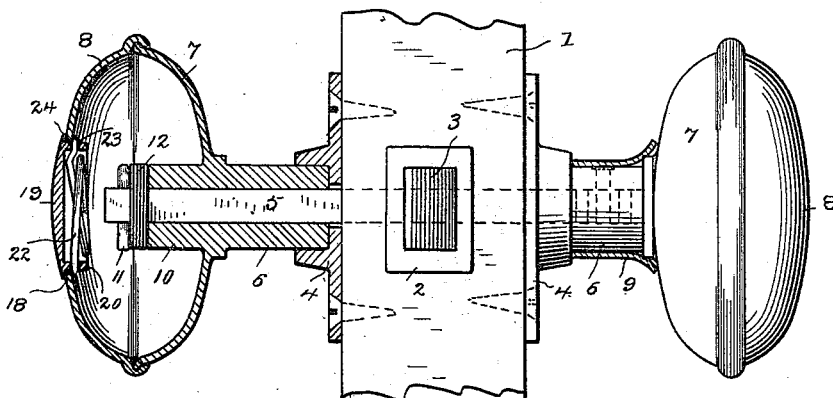


Fig. 2.

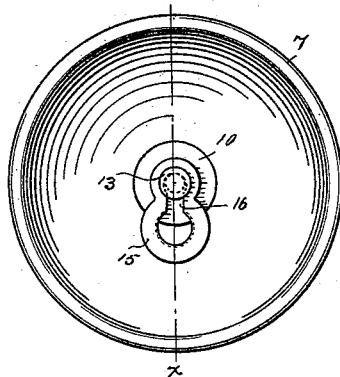


Fig. 5.

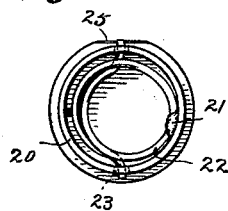


Fig. 4.

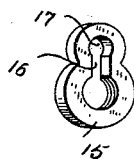
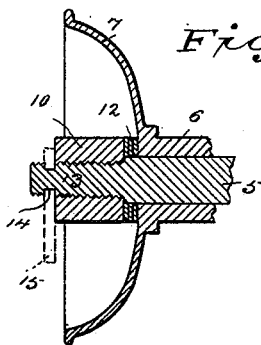


Fig. 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

THEODORE E. WARDWELL, OF STAMFORD, CONNECTICUT.

## KNOB ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 525,877, dated September 11, 1894.

Application filed December 1, 1893. Serial No. 492,410. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE E. WARDWELL, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Knob Attachments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the attachment of door knobs to the spindles by which they are carried, and has for its object to provide a construction which shall be simple and inexpensive, adapted to all classes of knobs, and easily removed from one side and secure against removal from the other side, both attachments being concealed so that danger of cutting the hand or glove is avoided.

With these ends in view I have devised the novel knob attachment of which the following description in connection with the accompanying drawings is a specification, numbers being used to designate the several parts.

Figure 1 is a longitudinal section partially in elevation illustrating one form in which I have carried my invention into effect; Fig. 2, an elevation, the outer half of the knob being removed, illustrating my preferred means of attachment; Fig. 3, a section on the line  $x x$  in Fig. 2; Fig. 4, a perspective of the locking washer detached, and Fig. 5 is an elevation of the removable cap as seen from the inner side.

1 denotes the face of a door; 2, the latch-case; 3, the latch; 4, the escutcheon plates; 5, the spindle, and 6 the knob shank.

It is of course well understood that knobs of the class now in most extensive use are hollow and are made of metal in the form of inner and outer shells which are headed over or otherwise secured together at the edge. In the drawings 7 denotes the inner shell which is ordinarily cast integral with the shank as shown in the drawings and 8 denotes the outer shell. One of the knobs, ordinarily the outer knob, is secured to the spindle in any simple and inexpensive manner. In the present instance see dotted lines at the right in Fig. 1, I have shown one knob as secured to the spindle

by a screw passing through the shank and engaging the spindle, the head of this screw being covered by a sleeve 9 which lies between the escutcheon plate and the knob and is of course not removable except from the opposite side.

On the inner side of the inner shell and carried by the spindle I have shown a hub 10. This hub may be cast integral with the inner shell and the knob shank as in Fig. 1 or may be wholly independent of the shell and shank as shown in Fig. 3.

In Fig. 1, as illustrating an ordinary means of attachment I have shown the detachable knob as attached to the spindle by means of a split pin 11 which is passed through a hole at the end of the spindle, washers 12 being placed between the split pin and hub 10. I preferably however, attach the knob to the shank in the manner illustrated in Figs. 2, 3 and 4. In this form the outer end of the spindle is threaded as at 13 and hub 10 is threaded internally to engage therewith. In this form I preferably place the washers at the inner end of the hub instead of at the outer end. Near the outer end of the spindle is a circular groove 14.

15 denotes a locking washer which is threaded to engage thread 13 and is provided with a slot 16 leading out from the threaded opening.

In assembling, the spindle is passed through the door from the outer side the sleeve 9 being placed over the knob shank. The inner shell of the inner knob is then placed over the spindle and hub 10 placed in position on the inner side of the groove, washers being used if necessary. The locking washer is then turned inward on the threaded end of the spindle until it reaches slot 16 when the washer will drop down on the spindle as shown in Fig. 3, the spindle at the circular groove being small enough to pass into the slot readily. The outer end of slot 16 is preferably enlarged slightly as at 17 so as to permit the spindle to turn freely without moving the locking washer. It will thus be seen that it is quite impossible to remove the knob from the spindle until the locking washer has been removed. As the inner and outer shells of the knob are permanently joined together in

practice, it is necessary to provide means in the outer face of the knob whereby the locking washer may be conveniently reached.

18 denotes an opening in the outer face of the knob which is closed by a cap 19 having a flange 20 on its inner side which engages the opening closely. Within the flange I secure at its mid length, as at 21, a spring 22 the ends of which are curved so as to pass out through openings 23 in the flange. The outer face of opening 18 is beveled at 24 and the ends of the spring are beveled on both faces so that when the cap is forced inward to place, the ends of the spring will engage bevel 24 and be pressed inward thereby. As soon as the ends of the spring have passed the edge of the opening they will spring outward again and engage the inner side of the outer shell thereby locking the cap in place. In order to provide for the removal of the cap when necessary I bevel off the under side of the cap slightly on one side as at 25. This permits the operator to insert the edge of a small screw driver under the cap and thus pry it off, the beveled ends of the spring being forced inward sufficiently to allow its removal when pressure is applied under the edge. This bevel at the edge of the cap is so small as not to be noticeable at all and to be hardly visible unless it is looked for, the cap itself serving as the ornamental finish at the center of the outer face of the knob.

Having thus described my invention, I claim—

35 1. The combination with a hollow knob and

a spindle threaded at its end and provided with a circular groove 14, of a locking washer threaded to engage the spindle and having a slot 16 leading out from the threaded opening, said slot being amply large to receive the reduced diameter of the spindle at the circular slot so that when the locking washer reaches the groove it will drop down the reduced diameter of the spindle entering the slot and locking the knob to the spindle. 45

2. The combination with a hollow knob and a spindle threaded at its end and provided with a circular groove 14, of a hub 10 threaded to engage the spindle and adapted to pass on the inner side of the groove, a locking washer 50 threaded to engage the spindle and having a slot 16 leading out from the threaded opening, said slot being enlarged at its outer end and of sufficient size to receive the spindle at the groove so that when the washer reaches 55 the groove the spindle will pass into the slot thereby locking the parts in place.

3. The combination with a hollow knob having an opening in its outer face, of a cap having a flange 20 adapted to engage said opening and a spring within said flange the ends of which pass through it and engage the inner side of the knob. 60

In testimony whereof I affix my signature in presence of two witnesses.

THEODORE E. WARDWELL.

Witnesses:

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