(No Model.)

C. L. FITCH.

KNOB ATTACHMENT.

No. 456,807. Patented July 28, 1891.

Fig. 1.

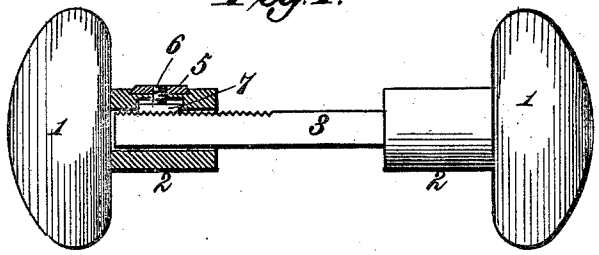


Fig. 2.

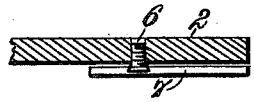


Fig. 3.

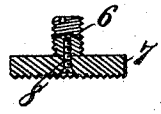


Fig. 4.

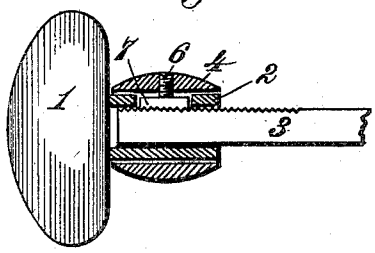
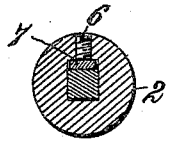


Fig. 5.



Witnesses.
Robert Everett.
Dennis Sumby.

Inventor:
Charles L. Fitch.
By Edward Taggart.
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES L. FITCH, OF GRAND RAPIDS, MICHIGAN.

KNOB ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 456,807, dated July 28, 1891.

Application filed November 14, 1889. Serial No. 330,286. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. FITCH, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented a certain new and useful Device for Attaching and Adjusting Door-Knobs, of which the following is a specification.

My invention relates to a new and improved device for attaching and adjusting door-knobs; and it consists, first, in the use of a block operated by a screw, in combination with the spindle of a door-knob, for the purpose of securing the same in the socket, and also for the purpose of adjusting the same in any required position in order to adapt it to doors of different thicknesses, the object being, first, to construct a strong and substantial fastening, and, second, to connect such adjustment to the socket of the door-knob in such a manner that it cannot wear in use, be lost, or be accidentally removed from the knob. These objects I accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows an elevation of an ordinary set of door-knobs, with one socket in section, in order to show my improved attachment. Fig. 2 shows a sectional view of a portion of the socket, together with the attaching-screw and pressure-block in a modified form. Fig. 3 shows a modified form of the pressure-block and attaching-screw. Fig. 4 shows a sectional view of a socket, together with my attaching device in a modified form; and Fig. 5 shows a transverse sectional view through the pressure-block.

Similar figures refer to similar parts throughout the several views.

1 represents the door-knob.

2 2 represent the socket connected with the knobs.

3 is the connecting spindle or shank, constructed, preferably, rectangular in cross-section.

4 represents a ring of metal surrounding the socket and provided with an opening for the adjusting-screw. This is one of the forms in which my invention may be used.

5 represents another form, which consists of a suitable piece of metal attached to the outside of the socket and provided with a threaded aperture for the reception and engagement of the screw-thread on adjusting-screw 6.

7 shows the adjusting-block, which is preferably corrugated or roughened on the side which comes in contact with the spindle 3. In the form shown in Fig. 2 the adjusting-screw 6 has a head which engages with the body of the slot in the pressure-block 7. The screw 6 should be attached to the block 7 so as to revolve independently of the block. The block 7 may rest in a recess in the socket formed to receive it, which recess may extend entirely through the socket, as shown in Fig. 4, or partially through the socket, as shown in Fig. 5, or, if made thin, it might rest in the opening which receives the spindle, as shown in Fig. 2.

In Fig. 2 I have shown an enlarged view of the socket, pressure-block, and adjusting-screw.

Fig. 3 shows another form of attaching the adjusting-screw 6 to the pressure-block 7. In the form shown in Fig. 3 the screw 6 rests upon the upper surface of the block, and is attached to the block by means of a small screw passing through an aperture in the block 7 and engaging with the screw-thread aperture in the larger screw 6. In this form the head of the screw 8 should be countersunk into the block 7, and in this form, when the small screw 8 is tightened up, the screws 6 and 8 revolve independently of the block 7. In this construction the screw 8 turns freely within the block 7, but is rigidly attached to the screw 6 in order to allow the user to turn the screw 6 in order to adjust the block to and from the spindle 3. I prefer to corrugate or roughen the side of the spindle in order to make the engagement more secure between the spindle and the surface of the pressure-block, which comes in contact therewith. It will be obvious that the screw 6, being attached to the pressure-block, will always remain in position within the socket when the knob shall have been once applied to the door. It will be further obvious that the adjustment can be made so as to secure the knob in any required position, so that a person can readily and quickly adjust the knobs to doors of different thicknesses.

In the form shown in Figs. 2 and 5 the

screw-thread which engages with the screw-thread on the screw 6 is cut in the socket of the knob, and the pressure-block in the form shown in Fig. 5 rests in a cavity in the socket provided for its reception. This cavity may be a groove extending from the end of the socket to the required position in the block, or it may be entirely within the socket and a short distance from the end thereof. Preferably the block is closely fitted within the walls of the cavity in which it rests, so that any strain thrown upon the block when operating the knob may be received and sustained chiefly by the socket itself rather than the adjusting-screw. In cases where the socket itself is not constructed of a suitable material for the cutting of a screw-thread a ring of suitable material, as shown in Fig. 4, or a block of suitable material, as shown in Fig. 1, may be used. In the latter case the block 5 may be provided with beveled edges dovetailing into flanges formed by a slight modification of the socket-casting. This method of attaching and adjusting the knob to the spindle may be applied to one or both ends of the spindle, as required.

In applying the block 7 and the screw 6 to the socket the same are inserted within the opening in the socket provided for the reception of the spindle. The screw engaging with the threaded opening in the socket is raised by means of a screw-driver or other suitable means to such a position that it will not interfere with the ready insertion of the spindle in the socket. It will then be held in that position ready for use. If the adjusting-screw 6 is to be drawn into place from below, it is obvious that at the upper end it should be headless, and if the screw be threaded down from the top only so far as is necessary to admit of raising the block 7 far enough to liberate the spindle 3 it then becomes apparent that the screw 6 can never be lost in the opening into which it is threaded.

In applying the knob to the door the spindle is placed within the socket after passing the same through the door and adjusted to the required position. The screw 6 is then turned a sufficient distance to clasp the spindle firmly within the socket. The block, having a corrugated or roughened surface, engages firmly with the corresponding surface of the spindle, and in use there seems to be no tendency to loosen or destroy the effect of the screw.

Having thus described my invention, what I claim to have invented, and desire to secure by Letters Patent, is—

The combination, with a knob having a socket provided on one side with a screw-threaded opening and a spindle inserted in said socket, of a pressure-block located in the knob-socket and adapted to bear on the spindle, and a headless screw attached to the pressure-block to be revolved independently thereof and extended from said block outwardly into engagement with the screw-threaded opening in the side of the knob-socket and adapted to clamp the pressure-block upon the spindle or withdraw it therefrom, substantially as shown and described.

In witness whereof I have hereunto set my hand and seal in the presence of two witnessses.

CHARLES L. FITCH. [L. S.]

Witnesses:
HUGH E. WILSON,
HARRY P. VAN WAGNER.