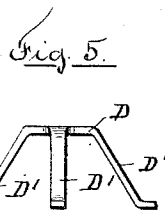
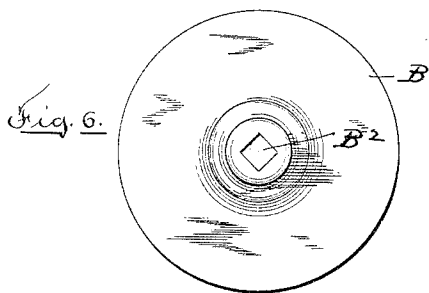
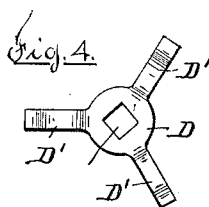
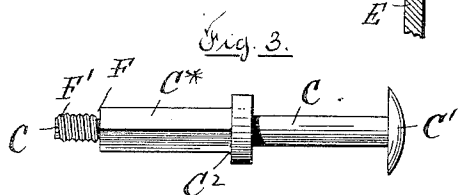
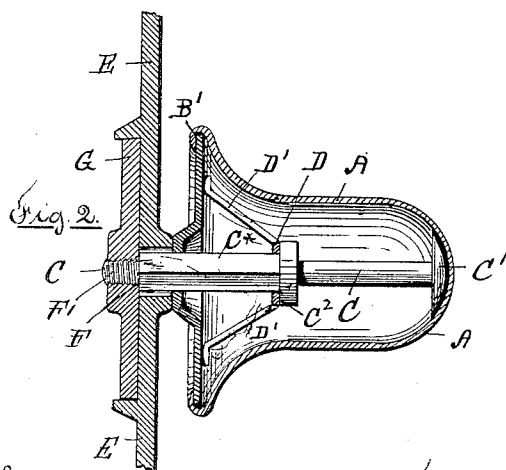
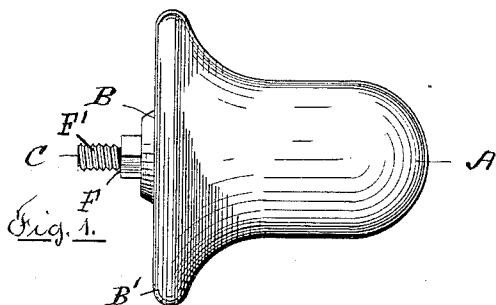


(No Model.)

W. A. TURNER.
KNOB.

No. 433,108.

Patented July 29, 1890.



Witnesses
Walter S. Bowen
Mellie C. Stew.

Inventor
William A. Turner.

By his Attorney
Rufus B. Fowler.

UNITED STATES PATENT OFFICE.

WILLIAM A. TURNER, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO
EDMUND CONVERSE, OF SAME PLACE.

KNOB.

SPECIFICATION forming part of Letters Patent No. 433,108, dated July 29, 1890.

Application filed May 10, 1890. Serial No. 351,828. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. TURNER, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Knobs, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 represents an elevation of a knob embodying my invention. Fig. 2 is a central sectional view of the same. Fig. 3 is a detached view of the spindle by which the knob is attached. Fig. 4 is a top view of the elastic washer. Fig. 5 is a side view of the same, and Fig. 6 is an end view of the plate by which the open end of the shell forming the body of the knob is closed.

Similar letters refer to similar parts in the different figures.

My invention relates to knobs to be used in connection with dampers or registers, and it has for its object to produce a knob which, when attached to the register or damper, will cause the same to press against the door or wall upon which the damper operates.

A denotes the body of the knob, consisting of a shell which is conveniently and preferably made from a metal sheet or blank by means of suitable dies and punches in the usual manner of making sheet-metal knobs.

B denotes a circular plate closing the open end of the shell forming the body of the knob, the edge of the shell being turned over the edge of the plate B, as represented at B', Fig. 2. In case the shell A is not formed of sheet metal, the plate B can be otherwise attached to the shell. The plate B is provided with an angular hole B², (shown in the drawings as rectangular,) to receive a spindle C, provided with an angular section C* to fit the hole in the plate B. The spindle C extends the length of the shell A, and has a head C' resting against the inner surface of the shell A, and a shoulder C² to prevent the movement of the washer D lengthwise the spindle C. The angular section C* is extended outside the plate B a short distance slightly less than the thickness of door-plate E. The end of the spindle is screw-threaded, forming a shoulder F, and the rectangular section of the spindle is ex-

tended beyond the plate B far enough, so that as the spindle is screwed into the damper or register G against the shoulder F the tension of the spring-washer D is brought to bear on the plate B and the endwise motion of the spindle limited, preventing too great strain being exerted upon the washer D. The washer D is formed with the elastic prongs D', which are bent or turned downward with their ends resting upon the plate B, while the washer is held by the shoulder C². When the screw-threaded end of the spindle has been screwed into the damper or register G, the end is expanded by riveting to prevent the spindle from working loose, and the force of the blows in riveting is received by the head of the spindle C, resting against the inner surface of the shell A.

The spindle represented in the accompanying drawings is shown with a screw-threaded section F' to be screwed into the damper or register plate G; but, if desired, this section can be left blank or without a screw-thread, and the damper or register G attached by the riveting of the end of the spindle. In such case the angular section C* can be round, if desired, as it will not be necessary to rotate the spindle by the rotation of the knob. The shoulder F should, however, be retained, as it limits the distance that the end of the spindle can be drawn into the damper-plate. Were the shoulder omitted, there would be a danger that the spindle might be drawn so far out of the shell A as to carry the elastic prongs outward against the shell A, and thereby destroy the elasticity of the spring, or so limit its action that it could not yield as the knob is moved over inequalities in the surface of the plate E.

The elastic washer D is cut from a piece of steel and the prongs bent into the proper shape and tempered, and the amount of space in contact with the spindle C and plate B is so limited that a minimum amount of heat is communicated to the tempered prongs D' through the spindle C.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a shell forming the body of the knob and provided with an angular hole or opening to receive a spindle,

of a spindle provided with an angular section fitting said hole, a shoulder to receive an elastic washer provided with prongs resting upon the inner wall of the shell, and a shoulder
5 outside the shell and such distance therefrom as to regulate the tension of the elastic washer, substantially as described.

2. The combination, with a shell forming the body of the knob, of a spindle held in said
10 shell and provided with a head resting against the inner wall of the shell and a shoulder between said head and the opposite end of the shell, and a washer held on said spindle and prevented from longitudinal movement there-

on, and having the elastic prongs D' bearing 15 against the wall of the shell, substantially as described.

3. The combination of shell A, plate B, provided with a hole to receive a spindle, a spindle C, having a head C' and a shoulder C², and 20 a washer D, having elastic prongs D', substantially as described.

Dated the 8th day of May, 1890.

WILLIAM A. TURNER.

Witnesses:

E. CONVERSE,

RUFUS B. FOWLER.