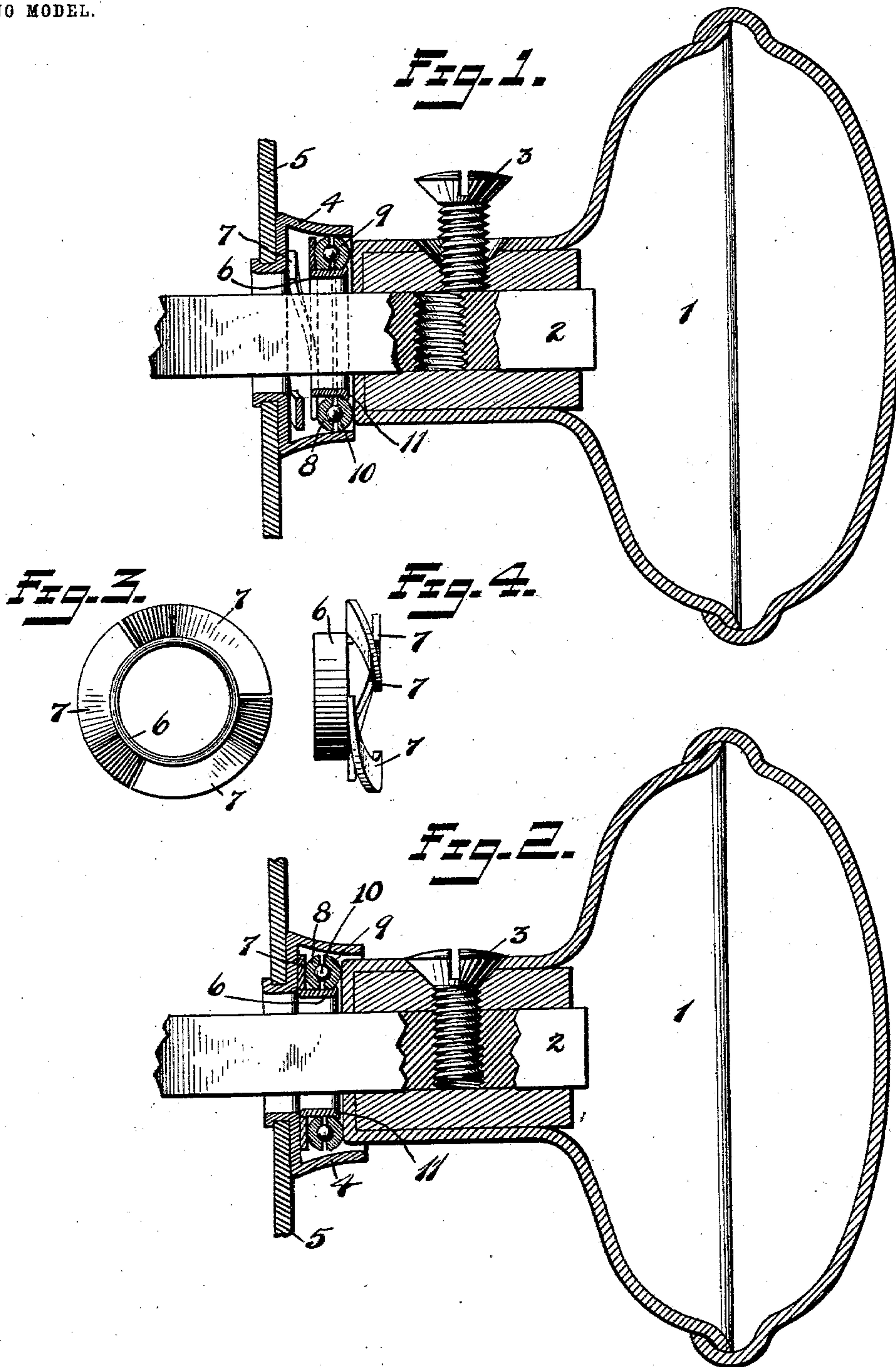


No. 745,568.

PATENTED DEC. 1, 1903.

C. J. CALEY.  
COMPENSATING KNOB BEARING.  
APPLICATION FILED JULY 24, 1903.

NO MODEL.



Witnesses  
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# UNITED STATES PATENT OFFICE.

CHARLES J. CALEY, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO RUSSELL & ERWIN MANUFACTURING COMPANY, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

## COMPENSATING KNOB-BEARING.

SPECIFICATION forming part of Letters Patent No. 745,568, dated December 1, 1903.

Application filed July 24, 1903. Serial No. 166,840. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES J. CALEY, a citizen of the United States, residing at New Britain, in the county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Compensating Knob-Bearings, of which the following is a full, clear, and exact description.

My invention relates to door-knobs and like constructions, and particularly to compensating antifriction-bearings to be used in connection therewith.

The object of the invention is to provide an antifriction device to be used in conjunction with door-knobs having a spindle, so that the position and adjustment of the knob may be compensated for in an efficient and yet simple manner.

It consists in providing a yielding antifriction device which is located between the end of the knob-shank and the escutcheon-plate or thimble which is commonly employed in devices of this character. This will be more clearly seen on an inspection of the accompanying sheet of drawings.

Figure 1 is a cross-section of a knob and spindle with the compensating device in position just before the knob is forced into place for its final adjustment. Fig. 2 is a similar view showing the knob secured to the spindle in the customary manner, the compensating device having been moved into its normal operative position. Fig. 3 is an end elevation of a portion of the compensating structure. Fig. 4 is a side elevation of the same.

1 represents a knob which is secured to one end of the spindle 2 by means of a screw 3 in the customary manner.

4 is a thimble such as is commonly used with door-knobs and in this form is shown mounted on the plate 5. It is sometimes customary to form this thimble in conjunction with the plate 5, in which instance the combination is termed a "rose-plate."

The compensating structure consists of a collar 6, which is adapted to be inserted inside of a thimble 4 and which has the springs 7 7 7 secured thereto on one side. These springs are preferably formed integral with

the collar, and the same may be made from sheet metal, if desired.

8 and 9 are washers which are placed in position around the collar 6 and have situated between their inner curved surfaces a series of balls, as indicated at 10.

In order that the structure may be compact or readily inserted or removed when desired, the collar 6 may be spun out, as shown in the drawings at 11, to retain the washers and ball-bearings in place. By this construction the compensating device may be inserted or removed from the thimble 4, as desired.

When the compensating structure is placed in position as indicated in Fig. 1, the knob 1 may be placed on the spindles 2 and the end of the knob-shank pressed against the outer surface of the outer washer 9. When the knob is moved into position shown in Fig. 2, then the usual attaching-screw 3 may be moved into place and the parts will be held in position, it being of course understood that there is another knob or equivalent device on the opposite end of the spindle 2, which it is unnecessary, however, to illustrate. There is, therefore, in the final resting position an antifriction device located between the end of the knob-shank and the thimble or escutcheon-plate, so that the end thrust and side thrust are taken up in manner to permit the knob to turn freely and yet be held securely in position.

The yielding end of the compensating structure makes it possible to use one of these devices and have it operate satisfactorily even with spindles of slightly-varying lengths, so as to prevent side play and chattering or annoying looseness in the adjustment.

What I claim is—

1. In a device of the character described, a stationary support, a spindle, a yielding compensating device surrounding the spindle and abutting against the support and having an antifriction-bearing and a knob-shank secured in place abutting against the outer end of the compensating structure.

2. A device of the character described including a support; a spindle, a knob-shank mounted on said spindle and a compensating device located between one portion of the sup-



port and the knob-shank, comprising a collar, spring-arms cooperating therewith, a pair of washers surrounding said collar, antifric-  
tion-balls located between said washers, said  
5 washers being held securely to said collar.

3. In a device of the character described, a support, a spindle, a knob-shank secured to said spindle, a compensating device located between the support and the knob-shank com-  
10 prising a collar having integral spring-arms, an antifriction device carried by said collar, the said support extending over and surround-  
ing the compensating device.

4. A device of the character described in-  
15 cluding a support, a spindle extending longi-  
tudinally therefrom, a knob-shank secured to said spindle and a compensating device surrounding said spindle and located between

the support and the end of the knob-shank comprising a collar having three integral 20  
spring-arms extending from one edge thereof and adapted to coact between the knob-shank and the support for the purpose specified, said  
spring-arms forming a substantially complete  
annular bearing when compressed, said sup- 25  
port having an extension from one side sur-  
rounding the compensating structure, and  
antifriction-balls surrounding said collar be-  
tween the support and the knob-shank.

Signed at New Britain, Connecticut, this 30  
22d day of July, 1903.

CHAS. J. CALEY.

Witnesses:

M. S. WIARD,  
WM. E. DIEHL.