No. 769,817. PATENTED SEPT. 13, 1904.

# N. W. CRANDALL.

## KNOB ATTACHMENT.

APPLICATION FILED MAY 13, 1904.

NO MODEL.

Fig. 1.

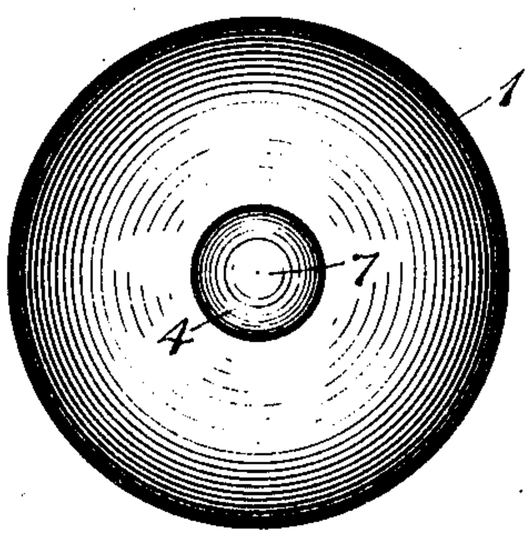



Fig. 2.

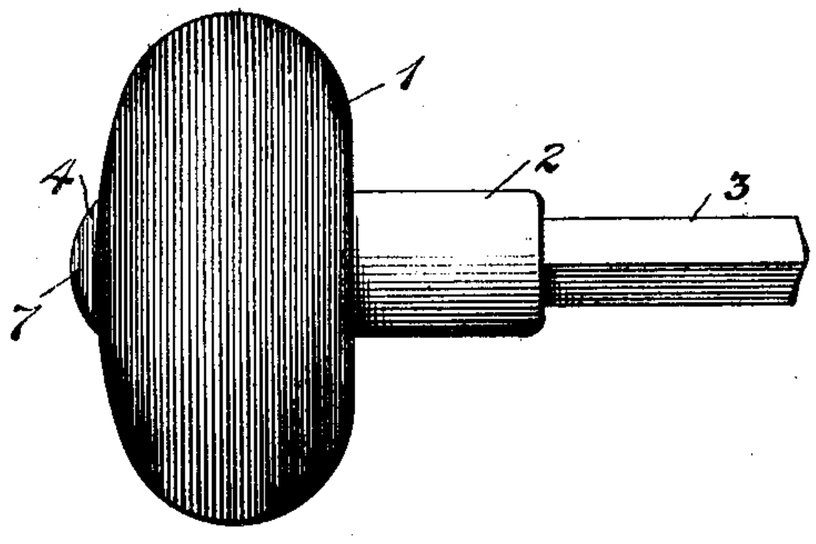



Fig. 3.

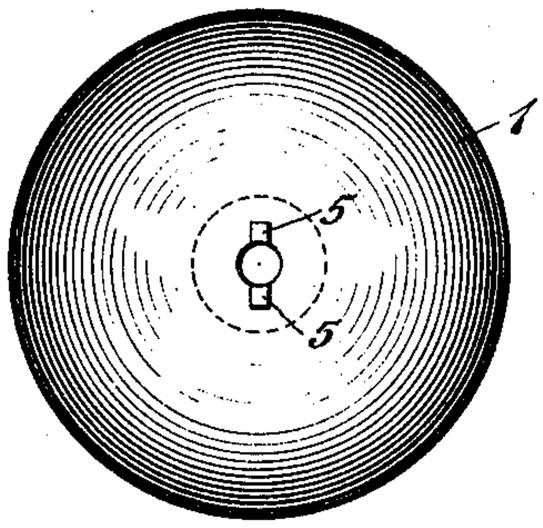



Fig. 4.

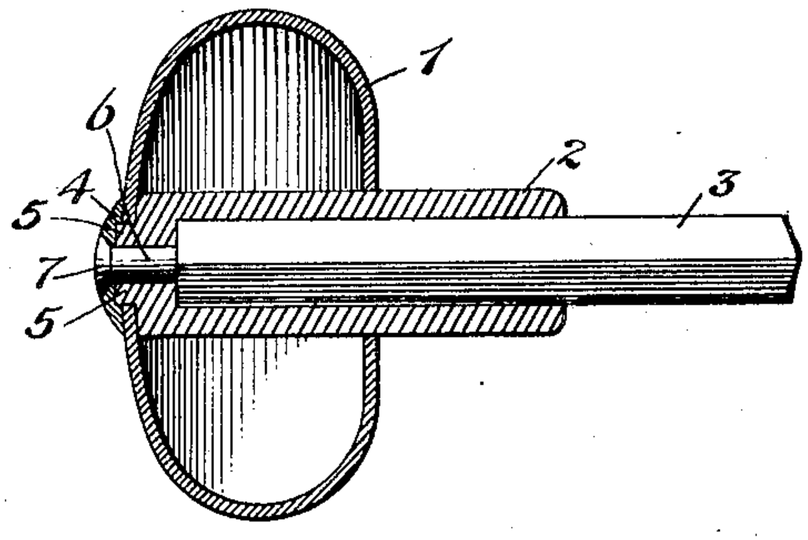
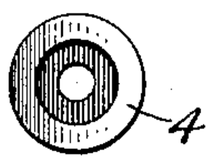



Fig. 5.


Fig. 6.




Witnesses
Geo. V. Rasmussen
[illegible]

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No. 769,817. Patented September 13, 1904.

# UNITED STATES PATENT OFFICE.

NATHAN W. CRANDALL, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO RUSSELL & ERWIN MANUFACTURING COMPANY, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

## KNOB ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 769,817, dated September 13, 1904.

Application filed May 13, 1904. Serial No. 207,783. (No model.)

*To all whom it may concern:*

Be it known that I, NATHAN W. CRANDALL, 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 Knob Attachments, of which the following is a full, clear, and exact description.

My invention relates to improvements in hardware, and particularly knob attachments.

The object of the invention is to effect a construction which will be strong and efficient and yet which may be manufactured very economically and on a commercial scale.

It consists in a construction embodying the principles illustrated in the accompanying single sheet of drawings.

It embodies a knob and a shank connected together and united by means of a spindle and locking members.

The details may be seen from the drawings.

Figure 1 is an end elevation of a knob embodying the improvements of my invention. Fig. 2 is a side elevation of the knob and spindle construction. Fig. 3 is a view similar to Fig. 1, but with the locking cap and spindle removed. Fig. 4 is a longitudinal section and vertical projection of the assembled parts. Fig. 5 is a section of one of the locking members. Fig. 6 is a rear view of the same.

1 is a knob, in the form herein shown of sheet metal.

2 is the knob-shank, which is surrounded at one end by the knob and reinforces the same.

3 is the spindle for operating a lock, latch, or similar construction.

4 is a cap-like member at the front of the knob.

5 5 are ears projecting from the front end of the knob-shank and extending through the knob-shell, as shown in Figs. 3 and 4. The knob-shank has a passage-way throughout the greater part of its length, into which the spindle fits. In the form herein shown this is square to correspond with the spindle; but it will be obvious that the recess and the spindle might be of any other irregular cross-section, so as to prevent relative rotary movement. The projection of the ears 5 5 through the knob-shell prevents relative rotary movement between the knob-shell and the shank, so that as thus far described the three parts all are held securely together against relative rotary movement.

The cap-piece 4 is formed with a recess in the rear and a central perforation, which is reamed out substantially as shown in Fig. 5. 6 is an extension from the spindle 3, which is formed of smaller diameter than the main body portion and extends through a passage in the knob-shank 2. 7 is an enlarged end which fills the reamed-out entrance-passage in the cap-piece 4. When the parts are thus assembled, the head 7 and the spindle 3 prevent the parts from separating longitudinally. The extension 6 is preferably formed integrally with the spindle 3 and has its outer end upset to fill the cavity in the cap-piece after assembling, so as to hold the parts permanently locked together.

The advantages of this construction will be apparent to those who are skilled in this art. The parts are securely fastened together and prevented from any accidental disengagement or loosening even if continuously operated.

What I claim is—

1. A construction of the character described comprising the combination of a shell, a shank having ears projecting through the outer surface of said shell preventing relative rotary movement, a spindle fitting in said shank, a cap-piece and a connecting member of smaller diameter extending from said spindle through said shank and having an enlarged head fitting in a recess in said cap-piece, substantially as described.

2. A construction of the character described comprising the combination of a knob-shell, a shank, a spindle, a cap-piece and a head at the outer end of said spindle arranged to simultaneously hold said shank in said shell and said spindle in said shank.

3. In a construction of the character described, the combination of a shell, a shank extending through one end of said shell and

abutting against the inner surface of the outer end, a spindle extending through said shank and having a shoulder abutting against a portion of said shank, a cap-piece and a member extending through said cap-piece, through a portion of said shank and secured to said spindle for holding the parts together.

4. In a construction of the character described, the combination of a knob-shell, a separate shank extending through said shell and having projecting members coacting with said shell to prevent relative rotary movement, a cap-piece and means for riveting said cap-piece and said shank together to prevent relative longitudinal movement.

Signed at New Britain, Connecticut, this 11th day of May, 1904.

NATHAN W. CRANDALL.

Witnesses:
M. S. WIARD,
F. E. SUNBURN.