(Model.) 2 Sheets—Sheet 1.

E. PARKER.

KNOB ATTACHMENT.

No. 327,820. Patented Oct. 6, 1885.

Fig. 1

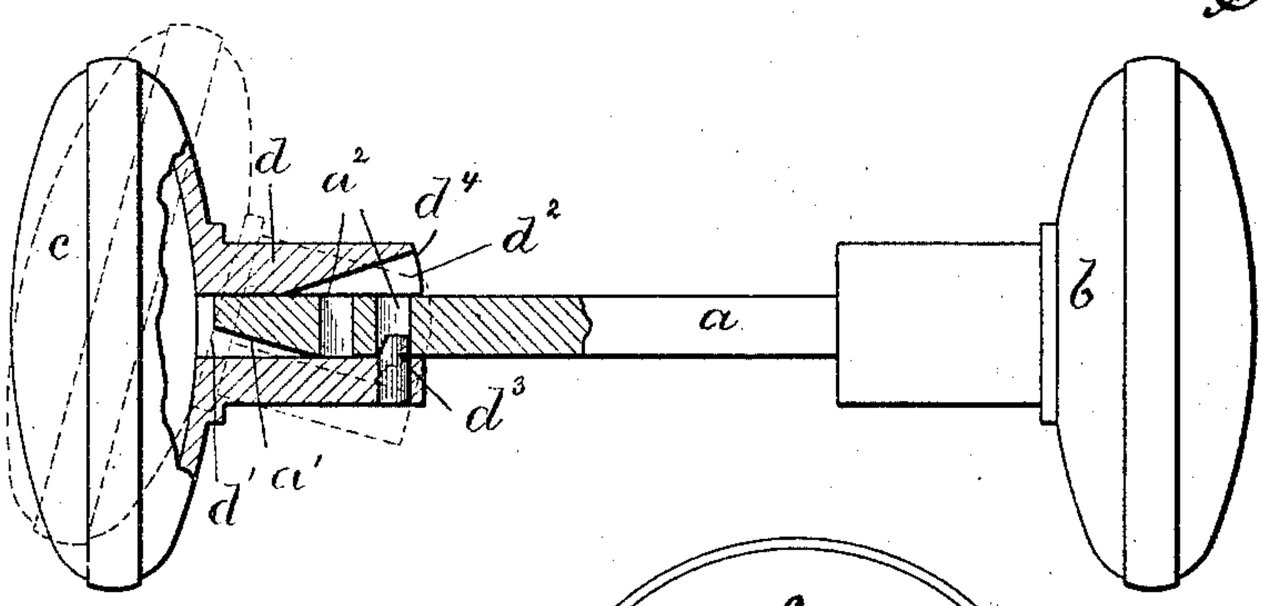


Fig. 2

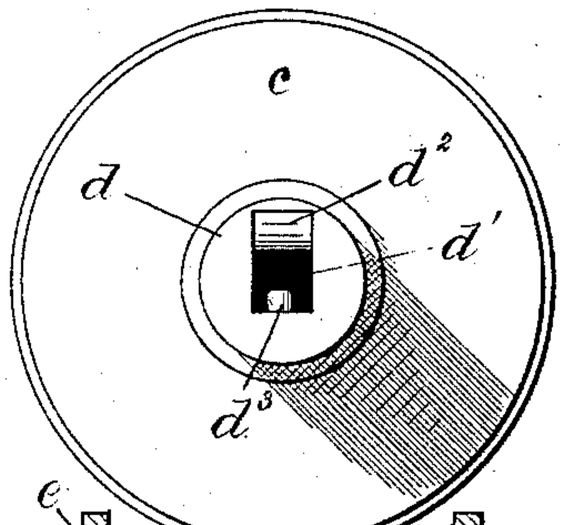


Fig. 3

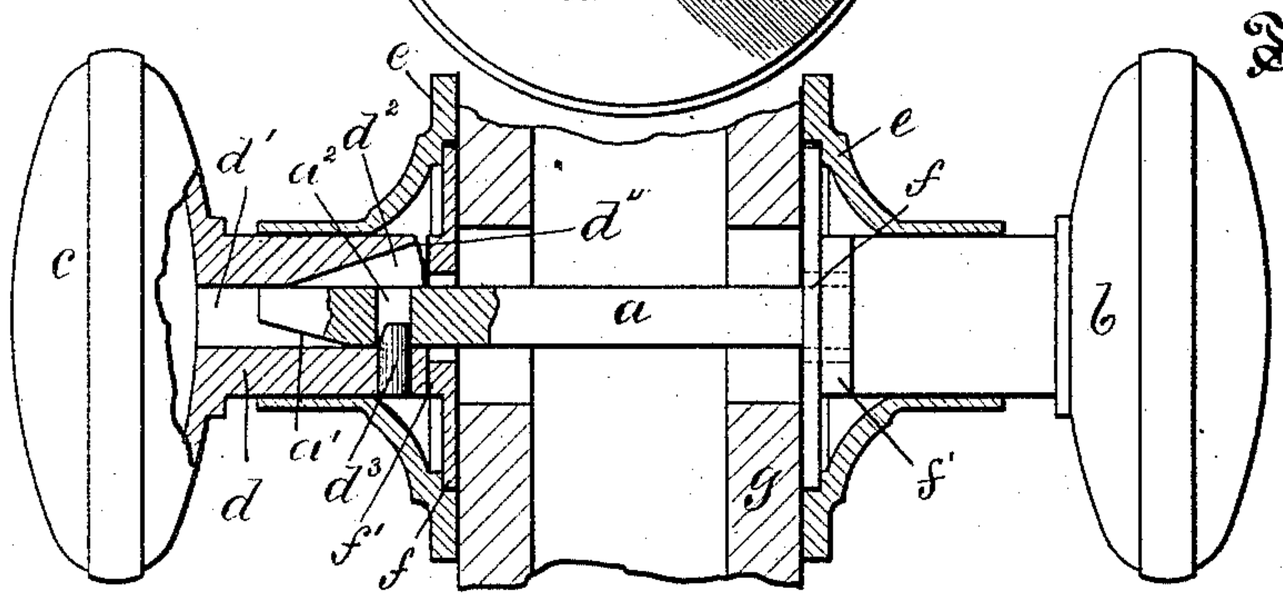
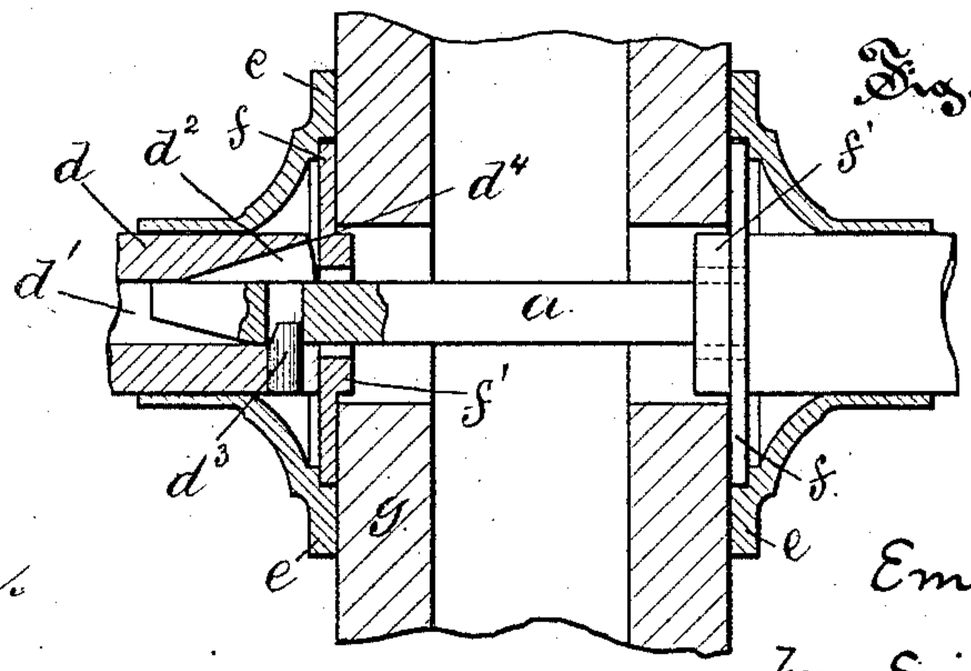


Fig. 4



Witnesses
W. M. Sporhmann
H. R. Williams

Inventor
Emery Parker
by Simonds & Burdett,
attys.

(Model.) 2 Sheets—Sheet 2.

E. PARKER.

KNOB ATTACHMENT.

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Fig. 5

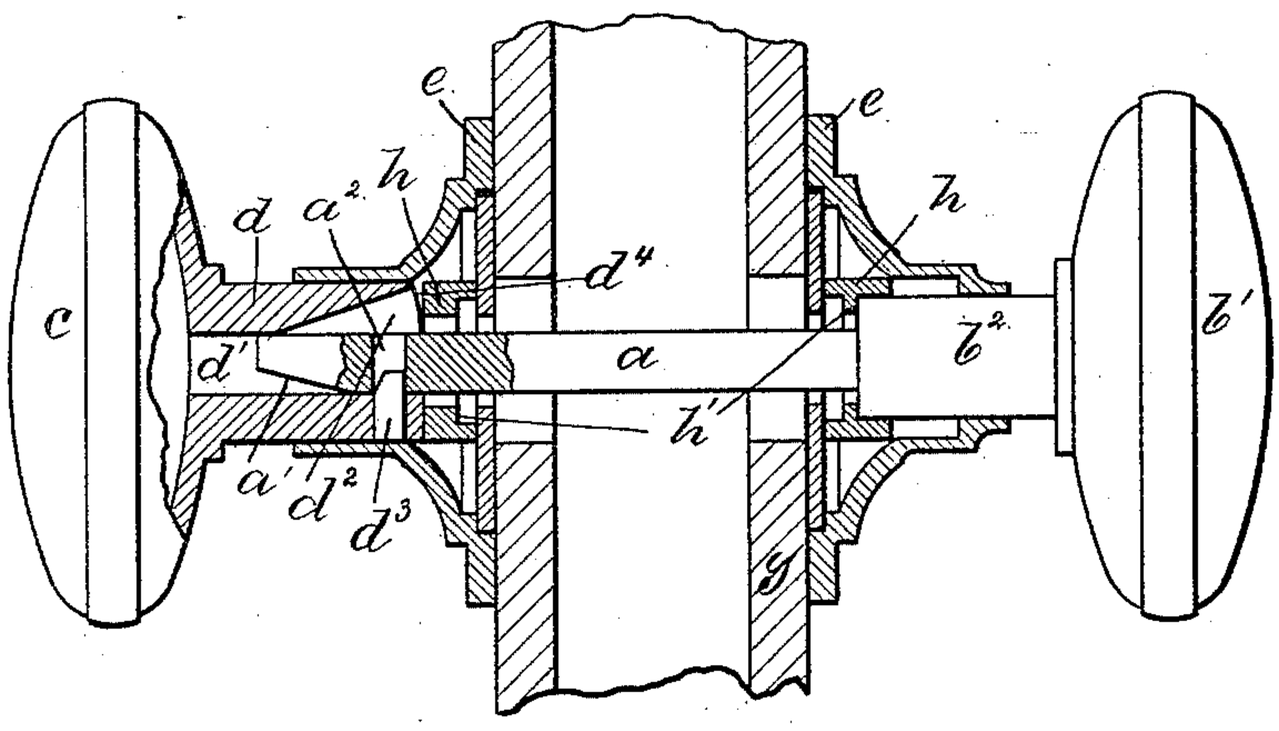


Fig. 6

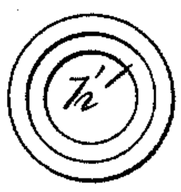


Fig. 8

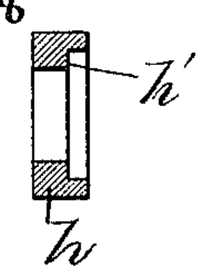
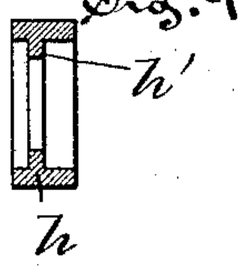


Fig. 7

Fig. 9



Witnesses
Wm. Sperkman.
H. R. Williams.

Inventor
Emery Parker
by Simonds & Burdett,
Attys.

UNITED STATES PATENT OFFICE.

EMERY PARKER, OF NEW BRITAIN, CONNECTICUT.

KNOB ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 327,820, dated October 6, 1885.

Application filed July 17, 1884. Serial No. 137,920. (Model.)

To all whom it may concern:

Be it known that I, EMERY PARKER, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Knob Attachments; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

Figure 1 is a side view of a spindle and a pair of knobs. A part of the spindle and one of the knobs is shown in section to show details of construction. Fig. 2 is a face view of the removable knob, showing the chambered shank. Fig. 3 is a detail view of the spindle and pair of knobs as attached to a door, with parts in section and broken away to show construction. Fig. 4 is a detail view of the spindle and shanks of the knobs which are shown in Fig. 3, but with parts reversed to show their method of application to a wider door than that shown in Fig. 3. Fig. 5 is a detail view of a pair of knobs of different sizes of shank, shown in section and with parts broken away to illustrate the method of using my improved packing. Fig. 6 is a plan view of one of my improved packings. Fig. 7 is a view of an alternate form of same. Fig. 8 is a view in longitudinal central section of the packing shown in Fig. 6. Fig. 9 is a view in longitudinal central section of an alternate form of the packing shown in Fig. 7.

The object of my invention is to provide a simple, cheap, and efficient means for securing knobs to the spindles in locks and latches, and particularly to do away with the side screws, which are the most objectionable feature used in the common form of knob and spindle.

My improvement consists in certain details in the construction and combination of the spindle and knob, and in devices for readily adapting them for use on doors of different thickness, as more particularly hereinafter described.

In the accompanying drawings, the letter *a* denotes a knob-spindle of ordinary material and such outline of cross-section as adapts it to fit the opening in the hub of the average lock or latch.

The knob *b* is fast to one end of the spindle, and may be made integral with it, if desired, and the opposite end of the spindle preferably has on one edge a bevel, a', and also near this end one or more openings, a^2, that may be holes drilled through the spindle, as shown, or mere indentations made in any convenient way, so long as each affords a shoulder that serves as a means of engaging a lug on the shank of the other knob. This latter knob, *c*, has a hollow shank, *d*, the central opening, d', in which conforms to the spindle in outline and size in cross-section, except at the end of the shank, where the opening has an enlargement, d^2, on one side. On the side of the opening within the shank, and opposite the enlargement d^2, an inward-projecting pin or lug, d^3, is secured or formed on the wall of the opening.

In Figs. 1 and 2 the relative position of these parts is illustrated, and the method of attaching the knob *c* to the shank is as follows: The spindle having been thrust through the hub of a lock or latch (not shown in the drawings) from one side, the removable knob *c* is held in the oblique position indicated by the dotted outline and placed upon the end of the spindle, the enlargement d^2 affording the spindle room to enter past the pin d^3 until opposite an opening, a^2, in the spindle, and into which the pin is slipped by moving the knob *c* until its axis is in line with that of the spindle.

When my improved knob and spindle are used on a door, it is necessary to hold the removable knob *c* so that it cannot be moved into an oblique position with regard to the spindle, and this is done by means of a rose, *e*, which may be of ordinary material and construction. This rose is placed upon the shank of the knob *c* before it is attached to the spindle, and after such attachment it is then secured to the door by means of screws, in the ordinary manner, and in position as indicated in Fig. 3.

When a single opening in the spindle is used, it is necessary to provide some means of attaching the combined knobs and spindle for use on doors of different thickness, and one of the means used by me for doing this is illustrated in Figs. 3 and 4.

The letter *f* denotes an inner rose of disk shape, having upon one side a central projecting boss, f', of any desired height, but prefer-

ably of such height that the thickness of the rose and boss shall be some definite fraction of an inch—as one-fourth, one-eighth, three-sixteenths, &c. An inner rose of this description is slipped upon the spindle after a rose, *e*, has been placed upon the shank, (as of knob *b* in Fig. 3,) and it forms a flange, which, coming in contact with the side of the door *g*, prevents the further introduction of the spindle. On the opposite end of the spindle a similar inner rose, *f*, is placed, which is of the requisite thickness to furnish a close bearing for the inner end of the shank of the movable knob when the latter has been attached to the spindle in the manner described.

In order to make a close fit between the parts the inner end of the shank on the side opposite to that bearing the lug has a rounded surface, d^4, and the lug d^3 is also slightly beveled on the back side, to enable the parts to more readily pass each other and come to a firm bearing.

When the rose *e* has been fastened to the door, the knobs will be held firmly in place, and the pull on the knobs, when the inner rose is used, comes upon the door and not upon the lock-case. In the drawings in this case the lock has been omitted as not needed to illustrate the working of my improvements.

To adapt the same parts illustrated in Fig. 3 to a door of increased thickness, the inner roses are placed in a reversed position upon the spindle, as illustrated in Fig. 4, and it is evident that the two inner roses with bosses of different thickness, as shown, may be so used as to enable one to fit the knobs and spindle upon doors of four different thicknesses by simply changing the position of the roses upon the spindle.

The parts thus far described have been adapted for use with knobs having each a shank of the same diameter; but to adapt the device to a cheaper class of goods having shanks of smaller diameter, a packing of peculiar construction is used, and it is illustrated in Figs. 5 to 9, in which the letter b' denotes a knob having a shank, b^2, smaller in diameter than the shank of the removable knob *c*; *h*, an annular packing larger in diameter than the shank b^2, and having one or both faces countersunk, so as to leave a flange, h', the latter forming a bearing for the end of the shank b^2 upon either of the faces of the flange that may be presented to the shank, depending on the position in which it is placed upon the spindle.

The distance from the outer face of the packing to the face of the flange upon the chambered face is preferably some fraction of an inch, and by reversing the packing upon the spindle the knobs and spindle are fitted to doors of different thickness in like manner as when the inner rose with connected boss is used. An inner rose is used with the packing, however, as well as in the former case.

When the packing *h* is used with the larger size of shank, its outer face forms the bearing for the inner end of the shank, and when it is used with the smaller size of shank the bearing of the latter is upon the flange forming the bottom of the counterbored surface.

Both of the knobs may be made removable, if desired, and attachable to the spindle by means of intermeshing parts, formed substantially as described; and it is evident that the spindle, instead of having the opening to engage a lug in the socket of the shank of the knob, may have a projecting pin that will engage an opening in the wall of the shank; but this latter construction is objectionable, as it would require each spindle-hub to have a groove or channel to permit the introduction of the spindle, whereas when the spindle is provided with the opening it is adapted to fit any of the present common forms of hub without requiring any change, and is therefore preferable.

I claim as my invention—

1. A knob with a connected spindle, the latter having near its free end an engaging shoulder or opening, in combination with a removable knob having a shank with a spindle-socket, and an inward-projecting lug or pin within the socket, the latter having an enlargement opposite the lug, all substantially as described.

2. In combination with a knob and connected spindle having the engaging shoulder or opening, a removable knob having a shank with a spindle-socket, a rounded end on the shank, an engaging lug within the socket, and an enlargement opposite the lug, all substantially as described.

3. In combination with a knob and connected spindle having the engaging shoulder or opening and a beveled end, a removable knob having a shank with a spindle-socket, an engaging lug within the socket, and an enlargement of the socket, all substantially as described.

4. In combination with a lock or latch, a knob with a connected spindle and the removable knob, each provided with means for connecting the parts, substantially as described, a door, a rose, and an inner rose bearing a central projecting boss, all substantially as described.

5. In combination with a lock-hub having a spindle-hole, a spindle adapted to fit loosely within said hole and bearing near its free end an engaging shoulder or opening, and a removable knob having a shank with a spindle-socket, and an engaging shoulder within the socket, whereby the said spindle and knob may be removably connected to each other, and the rose or like means for holding said knob and spindle in alignment with each other, all substantially as described.

EMERY PARKER.

Witnesses:
E. F. DIMOCK,
H. R. WILLIAMS.