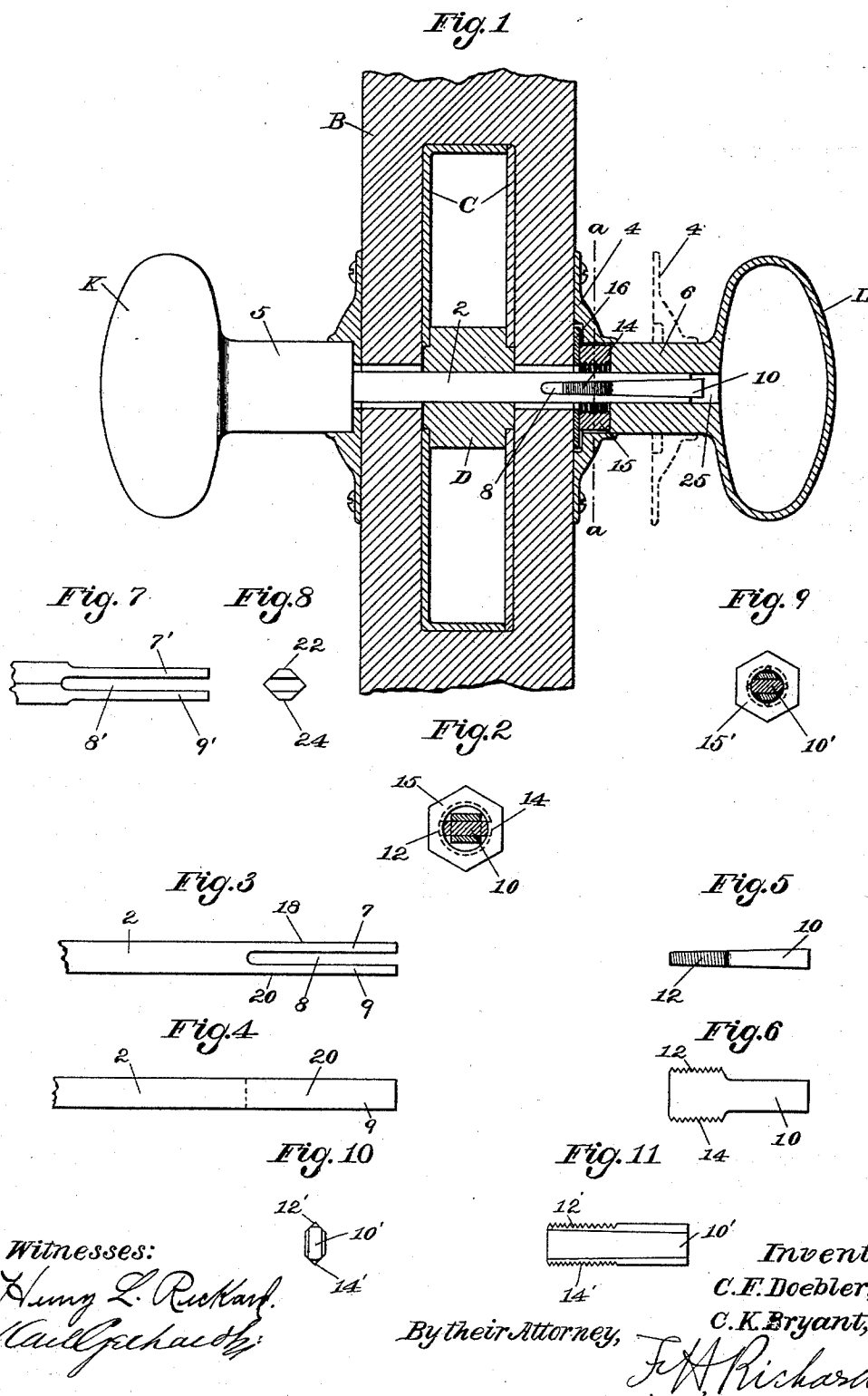


(No Model.)

C. F. DOEBLER & C. K. BRYANT.
KNOB ATTACHMENT.

No. 485,154.

Patented Oct. 25, 1892.



UNITED STATES PATENT OFFICE.

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KNOB ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 485,154, dated October 25, 1892.

Application filed February 16, 1892. Serial No. 421,676. (No model.)

To all whom it may concern:

Be it known that we, CHARLES F. DOEBLER and CHARLES K. BRYANT, citizens of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Knob Attachments, of which the following is a specification.

This invention relates to that class of adjustable knob attachments commonly known as "screwless knobs," the object being to provide a knob attachment of this class which may be readily removed and replaced and which shall at the same time be simple and effective in operation.

In the drawings accompanying and forming a part of this specification, Figure 1 is a sectional elevation of a knob attachment embodying our present improvements. Fig. 2 is a partial sectional view in line *a a*, Fig. 1, showing the spindle and wedge in section and the wedge-actuating nut in side view. Fig. 3 is a detail view showing one end of the spindle in the same position as in Fig. 1. Fig. 4 is a side view of the spindle as seen from above in Figs. 1, 2, and 3. Fig. 5 is an edge view of the wedge. Fig. 6 is a side view of the wedge. Fig. 7 is a view similar to Fig. 3 of a modified form of the knob-spindle. Fig. 8 is an end view of the spindle shown in Fig. 7. Fig. 9 is a view similar to Fig. 2, illustrating the arrangement and operation of the modification. Figs. 10 and 11 are an end and a side view, respectively, of the form of wedge used in said modification.

Similar characters designate like parts in all the figures.

For the purpose of illustrating the mode of applying our improved screwless knob attachment we have shown the same applied to a door B, Fig. 1, having therein the usual lock-case C, furnished with the usual cam or hub D for actuating the mechanism (not shown) of the lock. Said hub D is actuated through a spindle, usually provided with two knobs K and L, whose knob-stems 5 and 6, respectively, are perforated longitudinally for receiving the respective ends of the squared or polygonal spindle. One of the knobs, as K, may be secured by its stem 5 to the left-hand end

of the spindle in any convenient manner—as, for instance, by means of our present improvements or otherwise. The spindle 2, as shown in Figs. 1 to 4, inclusive, is of the usual squared cross-sectional form. At its right-hand end the spindle is shown bifurcated, and in the space 8 between the two sides 7 and 9 of the spindle there is fitted a spindle-expander or wedge 10, whose width throughout that portion of its length which lies within the knob-stem is substantially the same as the width of the spindle. That portion of the wedge projecting from the knob-stem when the parts are assembled is threaded, as illustrated at 12 and 14, Figs. 1, 2, 5, and 6, to engage within the wedge-actuating nut 15, as will be understood by comparison of Figs. 1 and 2. A suitable washer, as 16, should be ordinarily placed against the surface of the door, as shown in Fig. 1, the aforesaid nut 15 occupying the space intermediate to said washer and the knob-stem. For covering the nut 15 and giving a neat appearance to the whole structure the usual rose 4 is provided, this being secured to the door by screws in the ordinary manner and furnishing the bearing usually required for the stem 6.

For adjusting the stem on its spindle or for removing the knob therefrom the rose is first unfastened from the door and moved out on the stem to the position shown in dotted lines in Fig. 1. The nut 15, being then accessible, is turned to force the wedge 10 outward (toward the right hand in Fig. 1) sufficiently to free the spindle from its engagement with the knob-stem 6, when this may be withdrawn or adjusted longitudinally of said stem, as the case may require. The knob-stem having been properly located longitudinally of the spindle 2, the nut 15 is turned on the threaded end of the wedge against the end of said stem to draw the wedge toward the left hand in Fig. 1, and thus forcibly expand the two sides 7 and 9 of the spindle to firmly fix the spindle within the stem. In practice the ordinary semi-smooth surfaces usually found on this class of manufactures are sufficiently adhesive under pressure to hold the parts firmly together; but in some cases, if so desired, the surfaces 18 and 20, Figs. 3 and 4, of the spin-

dle may be roughened or serrated, so as to engage more firmly with the internal surface of the stem 6, which may or may not be similarly roughened, as the case may require.

5 In the form of the invention illustrated in Figs. 7, 8, and 9 the wedge-receiving slot 8' is made in the spindle diagonally thereof, and the intermediate corners are flattened, as at 22 and 24, to allow the passage over them of
10 the nut 15', Fig. 9, which, it will be observed, is of a smaller diameter internally than the corresponding nut in Fig. 2. By means of this modification the threaded portion of the spindle-expanding wedge may enter within the
15 squared bore 25 of the knob-stem, the thread on the wedge being formed on the right-angled edges thereof, as will be understood by comparison of Figs. 9, 10, and 11 in view of the preceding illustrations.

20 The manner of using this form of the invention is the same as that described in connection with Figs. 1 to 6, inclusive.

Having thus described our invention, we claim—

1. In a knob attachment, the combination, 25 with the knob-stem and the wedge-receiving spindle, of the wedge within said spindle and stem and a wedge-actuating nut engaging the wedge and drawing against the stem, substantially as described.

2. In a knob attachment, the combination, 30 with the knob-stem and with the knob-spindle slotted diagonally thereof, of the spindle-expanding wedge in the spindle-slot and threaded on the projecting angles thereof and 35 a nut engaging the threaded angles of the wedge for drawing the same longitudinally of the spindle, substantially as described.

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