N. A. RANSOM.

ATTACHING KNOBS TO DOORS.

No. 186,018. Patented Jan. 9, 1877.

Fig. 2.

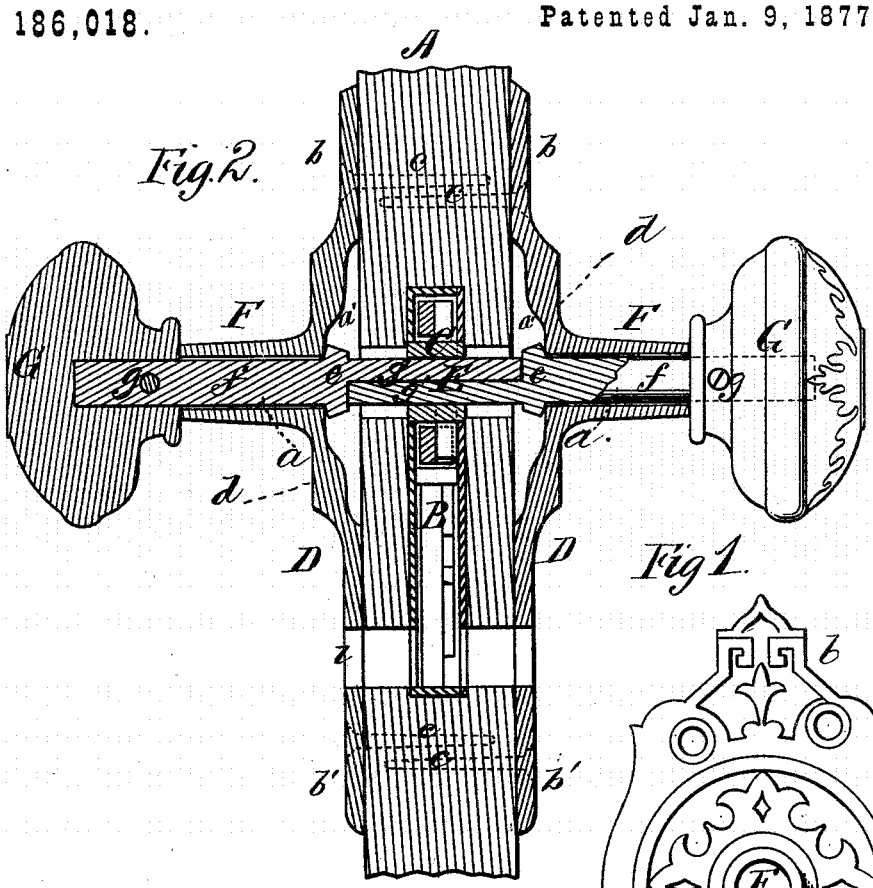

Fig 1.

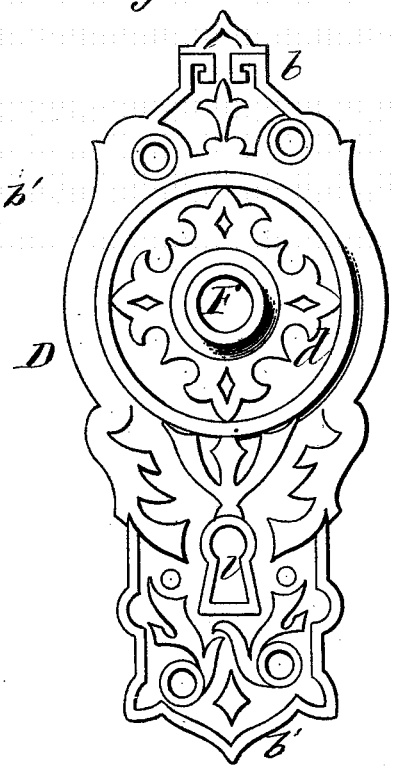

Fig 3

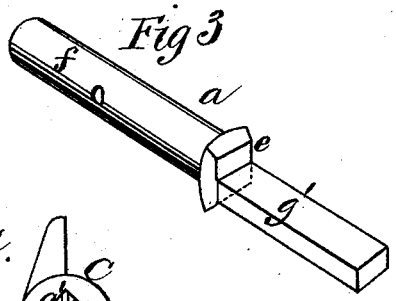

Fig 4.

WITNESSES.

Villette Anderson

Francis J. Masi

INVENTOR.

Newman A. Ransom,

by E. M. Anderson,

ATTORNEY

UNITED STATES PATENT OFFICE.

NEWMAN A. RANSOM, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO A. N. BEARD, OF SAME PLACE.

IMPROVEMENT IN ATTACHING KNOBS TO DOORS.

Specification forming part of Letters Patent No. **186,018**, dated January 9, 1877; application filed April 29, 1876.

To all whom it may concern:

Be it known that I, NEWMAN A. RANSOM, of Chicago, in the county of Cook and State of Illinois, have invented a new and valuable Improvement in Locks; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a front view of the escutcheon-shaft bearing. Fig. 2 is a vertical transverse section of the lock, showing the shafts and bearings in place. Figs. 3 and 4 are detail views of shaft-sections and tumbler.

This invention has relation to improvements in door-locks; and it consists in forming the operating-shaft in two sections, of sufficient length to overlap each other when inserted from opposite directions into the lock, the said overlapping ends being of rectangular form, and fitting into an aperture of corresponding shape in the tumbler, in combination with escutcheon-plates, rigidly secured to the door, and provided with projecting tubular carriers, through which the ends of the shaft-sections extend, which shaft-sections are provided with enlarged shoulders or collars for the purpose of preventing them from being drawn through the said carriers, whereby the said shaft is capable of elongation, or of being shortened, to adapt itself to doors of different thicknesses, and the strain of opening the door is transferred to and borne by the escutcheon-plates, as will be hereinafter more fully explained.

In the annexed drawings, the letter A designates an ordinary door, having a lock, B, recessed into its free vertical edge, and provided with the usual centrally-perforated tumbler C, by the rotation of which the latch is retracted. D indicates the escutcheon-plate, which is arched, as shown at *d*, and perforated over the opening of the lock, for the admission of the operating-shaft E. This plate is preferably of oblong shape, and its upper and lower ends *b b'* extend, respectively, above and below the top and bottom edges of the lock, thus enabling me to use long screws *c* in fastening the said plates to the door, and thus to secure the stability of its attachment thereto. It is also provided with a key-hole, *l*. The screws on opposite sides of the door will be out of line with each other; consequently, they will not come in contact. The arched part *d* of the escutcheon-plate D is provided with a projecting tubular carrier or supporter, F, the bore of which is circular, in cross-section, and, preferably, slightly larger at its inner than at its outer end. The bore may, however, be cylindrical, the object of the former construction being to prevent all possibility of the shaft binding in the carrier or supporter. This shaft E, cursorily alluded to above, is composed of two sections, *a*, each having a cylindrical end, *f*, upon which the knob G is received, and confined by means of a rivet, *g*, and a rectangular rabbeted end, *g'*, passing through and filling one-half of the space of the aperture in the tumbler, the remaining half being occupied by the corresponding end of the other section, as shown in Figs. 2 and 4. These sections *a* are passed into the tubular carrier F from the concave side of the arched part *d* of the escutcheon D, and are each provided with an enlarged collar, *e*, which prevents them from being drawn through the bore of the carrier. In this position the said collar is held against the inner end of the tubular carrier by means of a strong rivet, *g*, which not only confines the said collar against the rear end of the carrier, but also secures the knob to the operating-shaft *a*.

It is evident that nothing but the breaking off of the collars will cause the separation of either section of the operating-shaft from the lock, which is not apt to occur; also, that the rectangular ends of the said sections, not being secured together, will slide the one upon the other, thus lengthening or shortening the shaft, as the case may be, and adapting the said shaft within certain limits to be used in connection with doors of different thicknesses.

The escutcheon-plate will be made of any suitable metal, and may be either plain or ornamented, as I may elect.

The entire strain of opening a door, requir-

ing considerable effort when it is badly hung, is sustained by the escutcheon-plates, and on this account the necessity of using long screws in securing it to the door is the more apparent. This additional support can only be obtained by extending the ends of the plate above and below the lock. The supporters or carriers F afford adequate support to the shaft-sections *a*, and will effectually prevent them from sagging or having undue play, and their rabbeted ends from becoming bent thereby.

I am aware that a sectional shaft for door-locks, the overlapping ends of which are transversely grooved, and connected together by a locking-plate actuated to engage with the said grooves by a set-screw, is not new, as shown in the English Patent to B. Pitt, No. 2,889, of 1865; hence I do not claim such devices.

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

The operating-shaft sections *a*, each provided with a smooth rabbeted end, *g'*, and an enlarged collar, *e*, in combination with the escutcheon-plates D, having each a raised arched part, *d*, and a tubular projecting carrier, F, the collar on the sections being of greater diameter than the bore of the carriers, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

NEWMAN A. RANSOM.

Witnesses:
LYMAN P. CONVERSE,
WILLIAM H. REED.