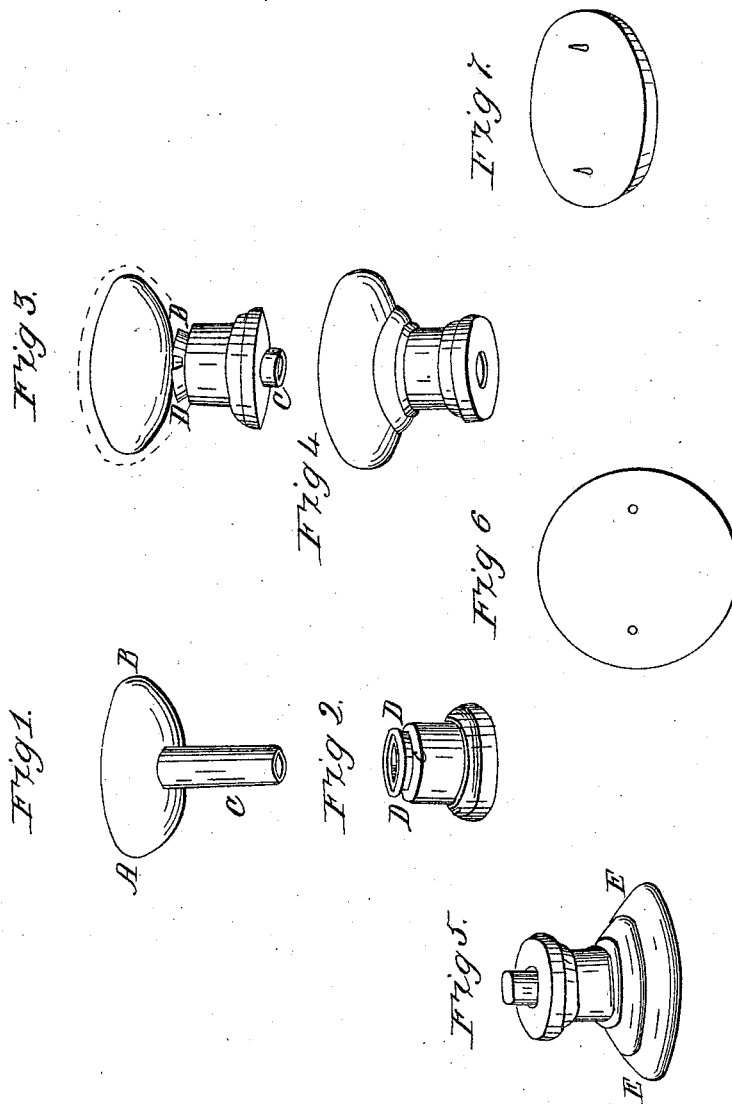


*W. Higgs,
Door Knob.*

No 4,884.

Patented Dec. 10, 1846.



UNITED STATES PATENT OFFICE.

WILLIAM HIGGS, OF UTICA, NEW YORK.

CASTING DOOR-KNOBS UPON THEIR COLLARS.

Specification of Letters Patent No. 4,884, dated December 10, 1846.

To all whom it may concern:

Be it known that I, WILLIAM HIGGS, of the city of Utica, in the State of New York, have invented a new and Improved Mode of Casting Door-Knobs; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in contriving the means of casting said knobs whole and yet hollow, avoiding the necessity of brazing the two halves together, after being cast separate; or of closing an opening in the head, or front of the knob after cast, as has heretofore been done.

To enable others skilled in the art, to make and use my invention, I will proceed to describe its construction, and the manner of molding and casting the same; reference being had to the drawings hereto annexed, making a part of this specification.

Figure 1 of the said drawings is a core around which to cast the knob. The light colored part A B is made of sand, in the usual mode of making sand cores, and is of a size, and shape corresponding to the cavity intended in the interior of the knob. C is a cylindrical tube of sheet iron, and is inserted in the sand core when the latter is made, and before it is dry, so that when the core is dried, the tube is firmly fixed in it. This tube serves to give vent to the gases and vapor issuing from the core when the melted metal is cast around it, and at the same time to hold the core in its proper position.

Fig. 2 is the neck of the knob and is first cast separately. It is cast hollow by the use of a cylindrical sand core, the pattern for the same being in two parts in the ordinary way, the hollow through the center being just large enough to slip over the tube C, Fig. 1, and to screw on the spindle in the usual way when put in use. Its outward form may be of any figure as heretofore made, but its upper end is cast in a dovetailed shape as seen at D D Fig. 2 with a notch in opposite sides as seen at e, to hold the knob firmly when cast around it. When the knob is cast around it, the tube C is inserted in this brazen neck, as seen in Fig. 3, and the metal cast around the sand core fills the space seen between it and the dotted line. The process of molding and of casting the metal around this sand core and this dovetailed neck is as follows: Fig. 5 represents the first pattern used in this process. It consists of the neck of the knob

already cast (Fig. 2) with the upper, or dovetailed end, inserted in a cavity suited to it, in the upper side of the half pattern of wood, or metal, E E Fig. 5. The other half of this wood pattern, being seen in Fig. 7. The whole wood pattern, when put together being the form intended for the knob, and bisected for the convenience of molding, in the usual way through the center. This compound pattern Fig. 5, is set upright, as seen in the figure, on a plain molding board, and the molder's flask being placed around it, the sand is embedded around it in the usual way. The flask and contents are then turned over, and being laid upon the molding board with the reverse side upward, a section of the wooden pattern E E is seen making an even plane with the surface of the sand, as shown in Fig. 6; the brass neck connected with it, being out of sight in the sand beneath. The other half of the knob pattern Fig. 7, with its plane side down, is then laid upon its fellow, Fig. 6, the pins or dowels seen in its surface being inserted in corresponding holes seen in the surface of Fig. 6. The whole forming the perfect shape of the intended knob. Parting sand is then dusted over the whole surface, and the other half of the flask being laid down surrounding it, the sand is again rammed around the pattern in the usual way. The upper part of the flask, with the sand contained in it is then lifted, and the two halves, one after the other of the wooden knob pattern are taken out, leaving the brass neck still in the sand below. The core and tube Fig. 1, are then set in the cavity thus made, the tube C standing in the hollow of the brass neck below, and the sand core sustained by it, is held within the elliptical space in such a position as to allow the metal to pass around it, and to fasten to its dovetailed neck. For it is plain that when the other half of the flask is replaced ready for casting, the cavity to be filled by the melted metal, is a space corresponding to that seen between the sand core and the dotted line, Fig. 3. In this manner a complete and perfect knob is cast, entire and solid, which when fitted up presents the appearance of the finished knob seen in Fig. 4, without the trouble of brazing the two halves together, after being cast separate or of closing an aperture left in the front of the knob as has heretofore been done. For, as before stated, the tube C Figs. 1 and 3,

serves to convey off the vapor arising from the sand core when the hot metal surrounds it, and thus prevents what is termed blowing of the metal thereby. And when the casting
5 is completed, as above described the tube C is easily withdrawn, and the dried sand of the core easily follows, leaving an entire and perfect knob.

What I claim as my invention, and desire
10 to secure by Letters Patent is,

1. The mode herein described of producing the entire hollow knob in casting through the use of the dovetailed neck Fig. 2, the sand core and tube connected as above de-

scribed, and shown in Fig. 1, and the plac- 15
ing of these in conjunction for the reception of the metal in casting the knob as shown in Fig. 3, the whole being molded arranged and performed substantially in the manner
above set forth and described. 20

2. I also claim the combination of the metal tube C with the sand core A B Fig. 1, and the dovetailing of the neck D D Fig. 2, in the manner and for the purpose set forth.

WILLIAM HIGGS.

Witnesses:

WILLIAM BAKER,
W. C. JOHNSON.