(No Model.)

J. SPRUCE.

SHEET METAL KNOB.

No. 302,046. Patented July 15, 1884.

Fig. 1

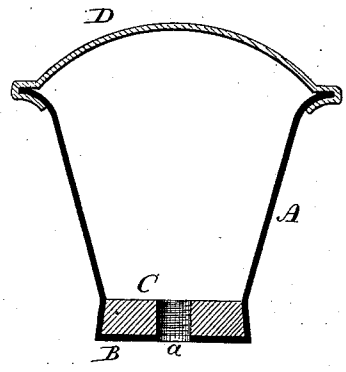


Fig. 2

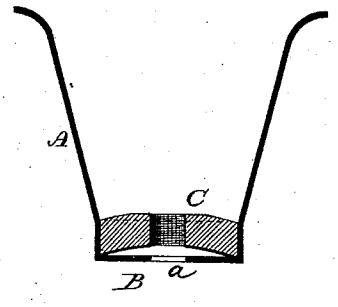
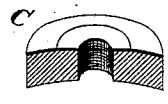


Fig. 3



Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES SPRUCE, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE SCOVILL MANUFACTURING COMPANY, OF SAME PLACE.

SHEET-METAL KNOB.

SPECIFICATION forming part of Letters Patent No. 302,046, dated July 15, 1884.

Application filed October 1, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES SPRUCE, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Improvement in Sheet-Metal Knobs; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a vertical central section of the knob complete; Fig. 2, a vertical central section of the body of the knob with the nut introduced; Fig. 3, a sectional perspective view of the nut.

This invention relates to an improvement in knobs which are made in parts struck up from sheet metal, the several parts secured together to form an ornamental knob, and such as used on stoves and for like purposes. These knobs are attached by means of a nut fixed in or made a part of the knob—that is to say, the knob is fitted with a female thread corresponding to a male thread attached to or made a part of the stove-door, or to whatever the knob is to be attached, or may be a screw introduced through a hole in the door and into the threaded hole in the knob. A common method of making this class of knobs is to construct a nut of polygonal shape, or having its edge irregular or roughened, and that introduced into the cup-shaped base part of the knob, and then the metal spun down onto the knob, the irregularities in the surface of the nut causing the metal of the knob to so engage the nut as to prevent the nut from turning within the knob. This construction necessitates the placing of the knob in the lathe for the purpose of spinning, which is an expensive operation.

The object of my invention is to so apply the nut that it may be done by a stamping operation; and the invention consists in constructing the nut with its under face concave, and of a diameter corresponding to the interior of the base end of the knob prepared to receive it, and when placed in the lower part of the knob the nut is struck to bring its under face into a horizontal plane, thereby extending the face and edges of the nut and correspondingly expanding the surrounding portion of the shell of the knob, whereby a firm attachment is made between the shell of the knob and the nut, so as to prevent the disengagement of the one from the other, as more fully hereinafter described.

A represents the body or shell of the knob, which is struck from sheet metal, preferably its lower or base end, B, closed, except as to a central hole, *a*. This part of the knob is struck in the usual manner for drawing up cup-shaped articles of sheet metal.

C is the nut. It is made cylindrical, and concave upon its under side, preferably convex on its opposite side, as shown, but may be flat upon that side, as indicated in broken lines, Fig. 2. The diameter of the nut corresponds to the internal diameter of the base end of the body of the knob and which it closely fits when set therein, as seen in Fig. 2. The nut having been placed within the body of the knob, as seen in Fig. 2, it is struck to bring its under surface flat and into a plane parallel with the base end of the knob, as seen in Fig. 1. This operation causes an expansion in diameter of the lower face of the nut, which forces it outward, carrying with it the ductile metal of the body of the knob, as seen in Fig. 1. The expansion of the body of the knob is at the extreme lower end, diminishing toward the top of the nut, and so that after the nut is thus struck down the interior of the body of the knob at the top of the nut is, like the nut, less in diameter than at the extreme bottom. This expansion of the extreme lower end of the knob without corresponding expansion above and corresponding expansion of the nut causes the two to interlock, so that no axial movement of the nut is permitted, and the expansion of the nut forcing a corresponding expansion of the body of the knob produces so great a friction between the adjacent surfaces of the body of the knob and nut that the nut cannot be turned within the knob under any ordinary usage.

The nut may be punched and threaded before it is placed within the knob, or the nut

may be drilled and tapped after it is in the knob.

The knob is completed by adding the cap D or other parts in the usual manner of making sheet-metal knobs.

I claim—

The herein-described improvement in the manufacture of sheet-metal knobs, consisting in striking up the body A from sheet metal, to produce substantially a cup-shaped base or lower end, then introducing a concave-surfaced nut into the base, concave side downward, the periphery of the nut corresponding in shape and size substantially to the interior of said cup-shaped base, then striking the nut to bring its previously-concaved surface into a flat plane within said base, substantially as described.

JAS. SPRUCE.

Witnesses:
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