(No Model.)

W. A. TURNER.

SHEET METAL KNOB.

No. 547,305. Patented Oct. 1, 1895.

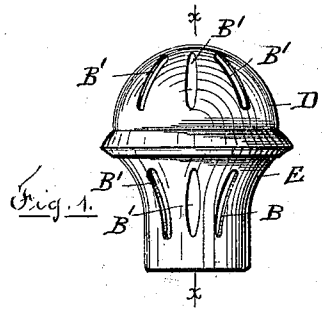

Fig. 1.

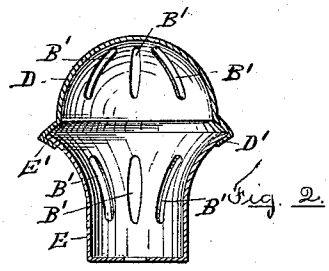

Fig. 2.

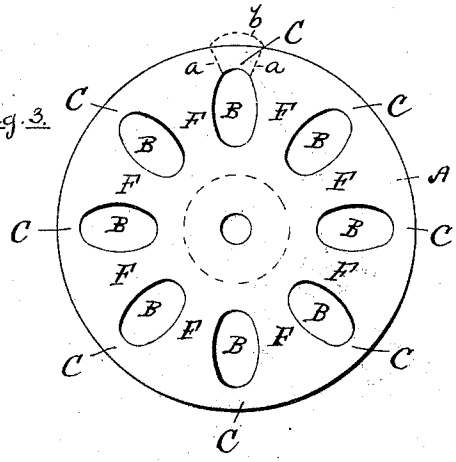

Fig. 3.

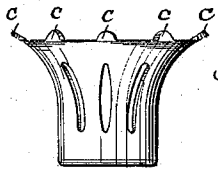

Fig. 4.

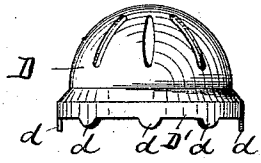

Fig. 5.

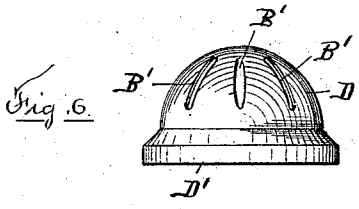

Fig. 6.

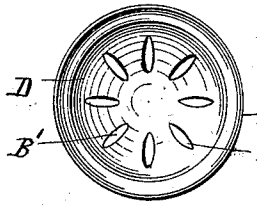

Fig. 8.

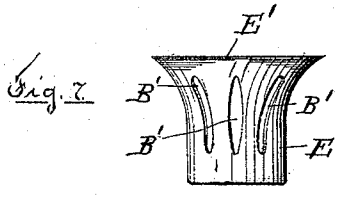

Fig. 7.

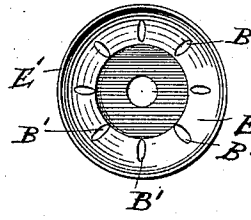

Fig. 9.

Witnesses
Walter S. Bowen
Edmund Conroe

Inventor
William A. Turner
By his Attorney
Rufus B. Fowler

UNITED STATES PATENT OFFICE.

WILLIAM A. TURNER, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO EDMUND CONVERSE, OF SAME PLACE.

SHEET-METAL KNOB.

SPECIFICATION forming part of Letters Patent No. 547,305, dated October 1, 1895.

Application filed June 6, 1890. Serial No. 354,522. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. TURNER, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Sheet-Metal Knobs, of which the following is a specification, reference being had to the accompanying drawings, forming a part of the same, and representing a sheet-metal knob embodying my invention.

Figure 1 represents one of my improved knobs. Fig. 2 is a central sectional view on line X X, Fig. 1. Fig. 3 is a view of the blank from which the base of the knob is formed. Fig. 4 represents a base as it formed from the blank shown in Fig. 3. Fig. 5 is a view of the top as formed from a blank similar in form to that represented in Fig. 3. Fig. 6 is a view of the top in its completed form before it is united with the base. Fig. 7 is a similar view of the base; and Figs. 8 and 9 represent interior views of the top and base, as shown in Figs. 6 and 7.

Similar letters refer to similar parts in the different figures.

My invention relates to a sheet-metal knob designed for use upon stoves, furnaces, ranges, metal ware, and other uses for which a knob formed of metal is desirable; and it consists in certain improvements in the construction of the knob, as hereinafter described, and set forth in the claims.

The knob embodying my invention, and as represented in the accompanying drawings, is composed of two parts, known as the "top" and the "base," with their edges united together by seaming, forming a completed knob. As the top is formed of a blank possessing the same features of novelty and in substantially the same manner as the base is formed, I will describe the method of forming the base of the knob.

In making knobs of this class it has been customary to form the top and the base from circular blanks by the use of appropriate dies and punches, and it has been customary, also, to cut pieces from the edges of such circular blanks, the edges formed by the removal of such being brought toward each other in the operation of forming the base or top, as the case might be. Openings were thereby formed in the sides of the base or top, in order to allow air to circulate throughout the interior of the knob and prevent the undue heating of the knob by its contact with the surface of the stove or other heated body.

It is desirable in knobs of this class which are thus provided with holes or openings in their sides to form a continuous edge where the top and base are united, and a method of securing this object was illustrated and described in the application filed by me on the 20th day of March, 1890, Serial No. 344,682, for an improvement in sheet-metal knobs. The method therein shown consisted in so providing the blank from which the base was formed with opposing edges that were brought into contact in the operation of forming the base that they were made to abut and form a continuous edge.

The method by which a continuous edge was secured by the means of the above-described method was applicable to the construction of the base of the knob only, for the reason that while the edge was continuous it was not integral, having seams or slits at intervals, so that a top made in the manner described would be liable to pull off the edge of the base. To obviate this disadvantage is the object of my present invention, and to accomplish this purpose I form the blank of a circular piece, (represented at A in Fig. 3,) and in the circular blank I place a series of holes B in an annular row equidistant from each other and considerably larger than the desired holes in the sides of the top or base of the knob. The outer ends of the holes B in the blank are brought near to the outer edge of the blank, so that the metal between the holes is connected by a narrow strip of metal C C. As the blank is pressed into the form shown in Fig. 4, the metal in the connecting-strip of metal C will be upset in the space inclosed by the broken lines *a a*, Fig. 3, and the metal expanded into the space included by the edge of the blank and the

broken line *b*, Fig. 3. This expansion of the metal forms in the completed shape of the base, as represented in Fig. 4, the projecting ears *c c c*, which are cut off, leaving a straight edge, as represented in Fig. 7.

The operation of forming the top is the same as already described with reference to the base, the expansion of the metal at each of the openings B B forming the projecting ears *d d d*, Fig. 5, which are afterward cut off, leaving a straight edge, as represented in Fig. 6. The edges of the top D and the base E are then united, as represented in sectional view in Fig. 2, by inclosing the edge E′ of the base in the edge D′ of the top. By forming the enlarged openings B in the blank A the sides of the top or base are formed without the compression of the metal at F or between the openings, the flaring shape of the sides of the base or top being formed by the contraction of the openings B, which in their contracted form constitute the holes B′ in the sides of the knob. The edges E′ and D′ are thus formed in a single piece without seam or slit, which greatly strengthens the edge of the base, but more especially that of the top D, which incloses the edge E′ of the base E.

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

A knob formed from a disk of sheet metal provided with holes arranged concentrically therein and near its edge so as to leave narrow strips of metal between them and the said edge, the said disk being pressed or drawn so as to form said knob and to crowd out beyond the periphery of the disk the narrow strips of metal aforesaid, without crowding together the sides of the holes, said narrow strips of metal being wide enough to allow the edge of the disk to be straightened with cutting into said holes, thereby forming a continuous edge, substantially as described.

Dated at Worcester, in the county of Worcester and State of Massachusetts, this 28th day of May, 1890.

WILLIAM A. TURNER.

Witnesses:
EDMUND CONVERSE,
RUFUS B. FOWLER.