2 Sheets--Sheet 1.

J. M. PATTERSON.

Method of Producing Flanged Lids and Collars for Sheet-Metal Cans.

No. 161,634. Patented April 6, 1875.

Fig. 1.

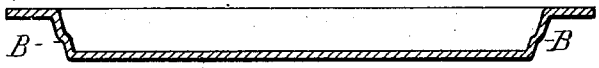


Fig 2

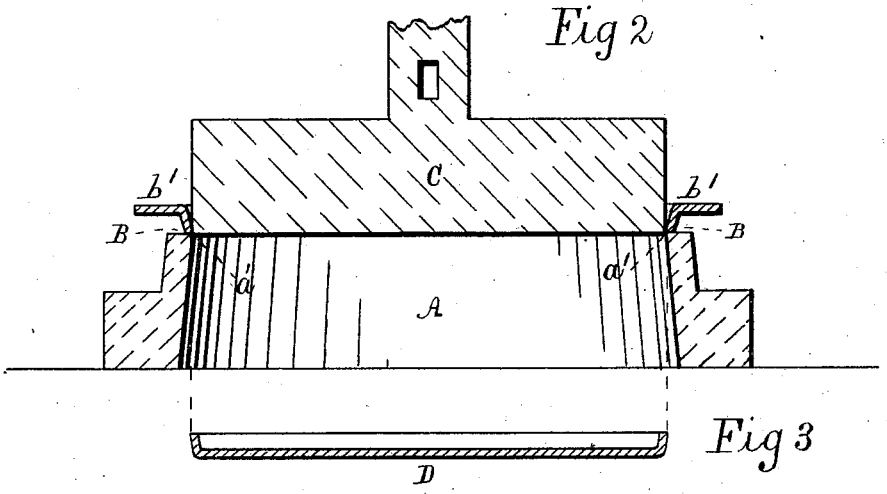
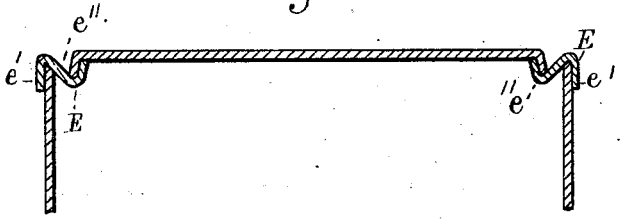


Fig 3

Fig 4



Witnesses:

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Wm H. Morison.

Inventor:

Jacob M. Patterson

2 Sheets--Sheet 2.

J. M. PATTERSON.

Method of Producing Flanged Lids and Collars for Sheet-Metal Cans.

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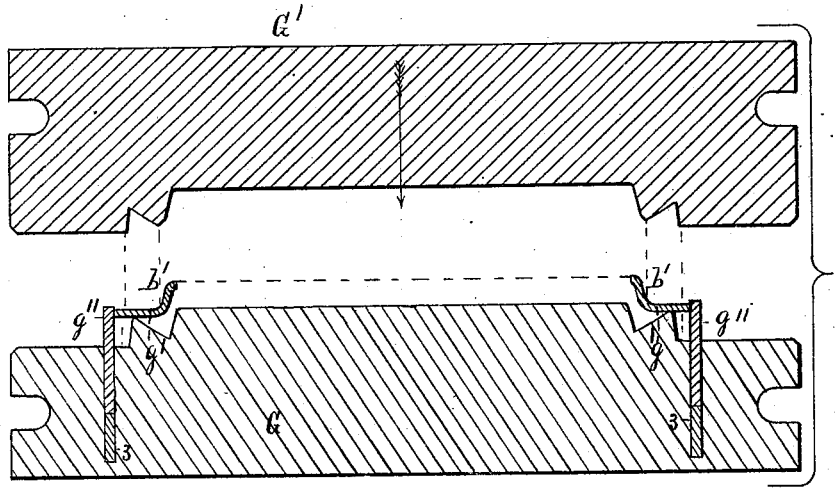
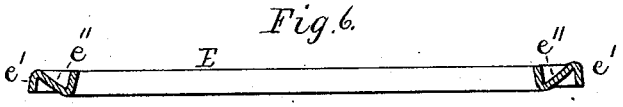


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

JACOB M. PATTERSON, OF WOODBURY, NEW JERSEY.

IMPROVEMENT IN METHODS OF PRODUCING FLANGED LIDS AND COLLARS FOR SHEET-METAL CANS.

Specification forming part of Letters Patent No. **161,634**, dated April 6, 1875; application filed February 8, 1875.

To all whom it may concern:

Be it known that I, JACOB M. PATTERSON, of Woodbury, in the county of Gloucester and State of New Jersey, have invented a Process of Constructing the Collars and Lids for Sheet-Metal Cans, of which the following is a specification:

The object of my invention is to render the flanged aperture left in the sheet metal, after punching out a flanged disk for the lid, sufficiently contracted to receive over and upon it the said flanged disk as a cover or lid for closing said aperture, and affording an annular groove for the reception of melted wax, stearine, or tallow, to make the joint air-tight without the use of solder; and my invention consists in so "stamping up" and punching the disk of sheet metal, out of which both the collar and lid for a can are produced, that the portion punched out of said disk will form the flanged lid for covering the flanged opening left in said collar, as will be fully explained hereinafter with reference to the accompanying drawing, in which—

Figure 1 is a central vertical section of the disk previously sunken or stamped to partly fit in the punching-die. Fig. 2 is a like section of the same disk as resting in the punching-die after the central portion or lid has been punched out; and Fig. 3 is the said central portion detached and dropping from the die. Fig. 4 is a vertical central section of the collar and of the lid laid thereon to cover the opening therein, after the horizontal flange of said collar has been turned partly downward to fit over the ends of the cylindrical body of the cam, and the opening in said collar slightly contracted to receive the lid. Fig. 5 is a vertical diametrical section of the stamping-die, whereby the ring left after the central portion of Fig. 1 has been cut loose or punched out (by the action of said die to produce the cover for the can) is transformed into the collar with a contracted opening—a diametrical section of the ring being also shown in said Fig. 5, as resting on its horizontal flange upon the lower portion of said die. Fig. 6 is a vertical diametrical section of the ring after it has been transformed by the die, Fig. 5, into the collar with a contracted opening.

In carrying out my invention I take a flat disk of sheet metal, and by means of suitably-shaped dies (not shown) stamp it into the form shown by Fig. 1. I then place the so-formed disk upon the mouth of the punching-die A, the diameter of the mouth of said die being such that the shoulder B of the stamped disk will rest accurately down upon the inner upper edge a' of the mouth of said lower die A, and then let the plunger or upper die C of the punching-machine drop, which operation cuts out and lets fall the outwardly-flaring flanged lid D. (See Figs. 2 and 3.) I now lift the flanged ring b' left in the die A and place it upon any suitable drop-press, provided with dies, (see Fig. 5,) which will stamp the said ring b' into the form required for the collar E.

By reference to the respective two parts of the die, Fig. 5, it will be seen that their faces are counterparts of each other, with the allowance between them of a sufficient space for the thickness of the sheet metal of the ring b', which, in the figure, is shown as resting with its horizontal flat flange directly down upon the angular projection g' of the stationary portion G of said die, and with its outer edge in contact with adjusting-pins g'' g'' to keep said ring concentric with the face of the said die. The moving part G of said die is shown as raised up preparatory to being dropped upon the lower part G; and it will be readily understood that when it is dropped it will compress the said ring b' into the form shown by the transverse section shown by Fig. 6—in other words, the opening in ring b' will be contracted sufficiently in the collar E to allow the flange of the cover D to fit closely around the outer side of the inner flange of said collar E, (see Fig. 4,) and thus, in connection with the groove e'', form the annular receptacle for the melted wax, stearine, or tallow, for closing the aperture of the can in an air-tight manner without the use of solder. The adjusting-pins g'' g'' in the fixed or lower half of the die G (see Fig. 5) rest in respective vertical holes, in the bottom or lower portion of which a piece of elastic gum, 3, is placed, which allows the respective pin to be pressed farther down into the hole by the descending portion G′ of the

die, and causes the said pin to rise to its former elevated position, as shown in Fig. 5, as the said part G′ ascends.

It will be seen, by reference to Fig. 1, that the sheet-metal plate, which is to afford the collar E and cover D, has been stamped in dies, (not shown,) which have produced a shoulder, B, which will just allow the part below it to fit into the mouth of the die A, (see Fig. 2,) and that when the plunger C descends it will cut out the flanged disk D, which is to be used as the lid or cover. It will also be seen on reference to Fig. 5 that, as the ring *b′* is kept by the pins *g″* from being moved out of its concentric position, only about one-third of the horizontal flange will be turned downward by the fall of the upper portion G′ of the die, while the remaining inner portion of the ring will be forced down upon the two sloping sides to form the groove *e″*, (shown in Figs. 4 and 5,) and consequently contracting the aperture of said ring *b′* sufficiently to allow the flange of the cover or lid D to fit down tightly around the outer surface of the inner flange of the collar E, substantially as shown in Fig. 4.

I am aware that a disk of tin has been corrugated in its middle, and the said middle portion afterward punched out and the corrugation flattened, for the purpose of increasing its diameter sufficiently to serve as a flat cover for the aperture by soldering it fast around the edges of the same, as in oyster-cans; but I am not aware that a flanged cover or lid has heretofore been made, which will fit around a flanged opening or aperture in the disk, out of which the said cover or lid has been punched, so as to produce, when applied to each other, a groove for the reception of melted wax, stearine, or tallow for making the joint air-tight, as hereinbefore set forth.

I claim as my invention—

The process or mode described and set forth, of producing the flanged and grooved collar E and the flanged lid or cover D, whereby the portion *b′*, which remains, (after the portion which forms the flanged lid or cover D has been punched out,) is grooved and its aperture contracted to receive the said flanged lid or cover over and upon the surrounding inner flange of the said collar, as and for the purpose described.

JACOB M. PATTERSON.

Witnesses:

BENJ. MORISON,

WM. H. MORISON.