

(No Model.)

F. A. WALSH.

ART OF CONSTRUCTING SEAMS OF SHEET METAL VESSELS.

No. 299,942.

Patented June 3, 1884.

Fig. 1

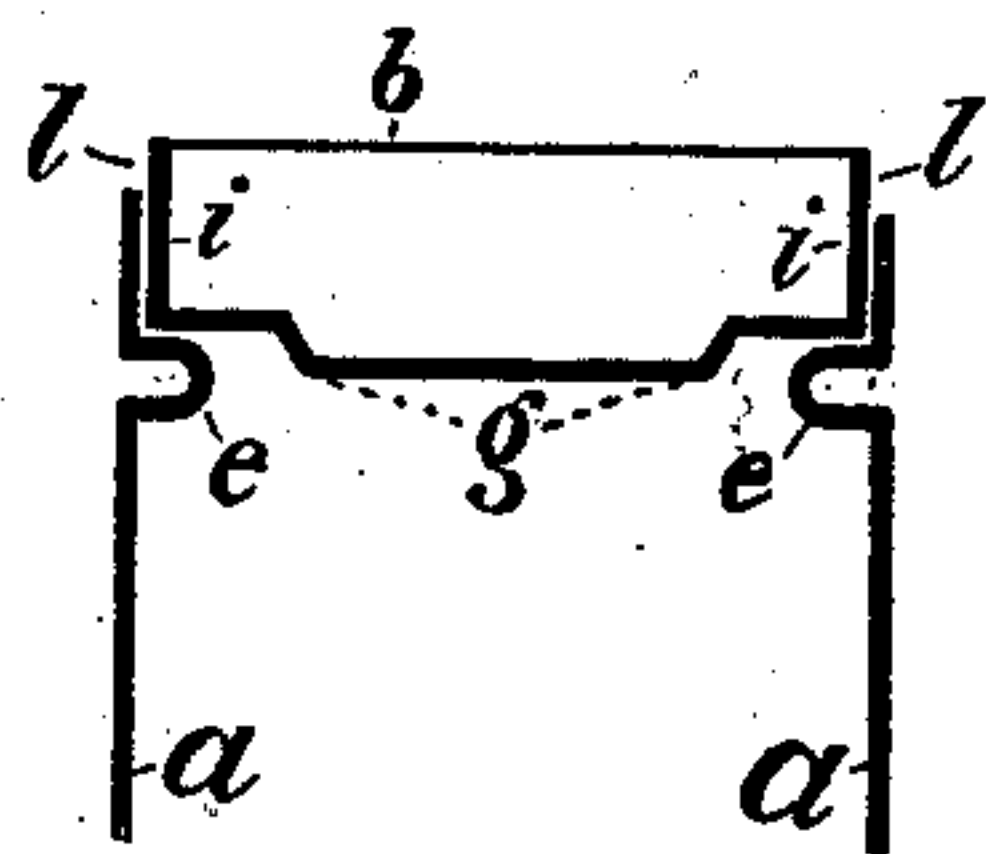


Fig. 2

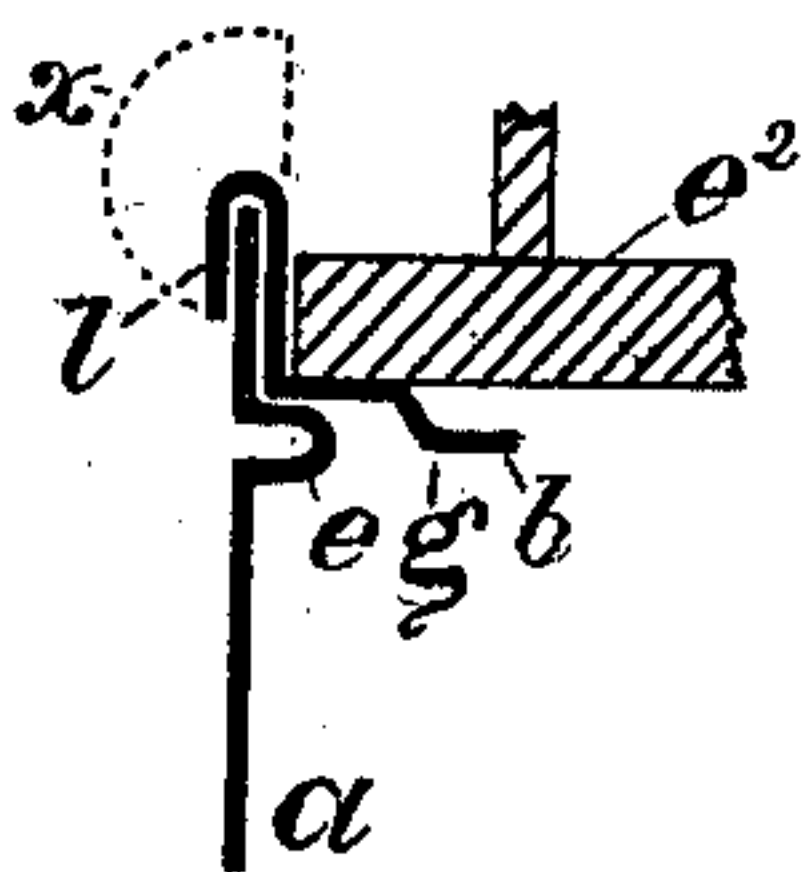


Fig. 3

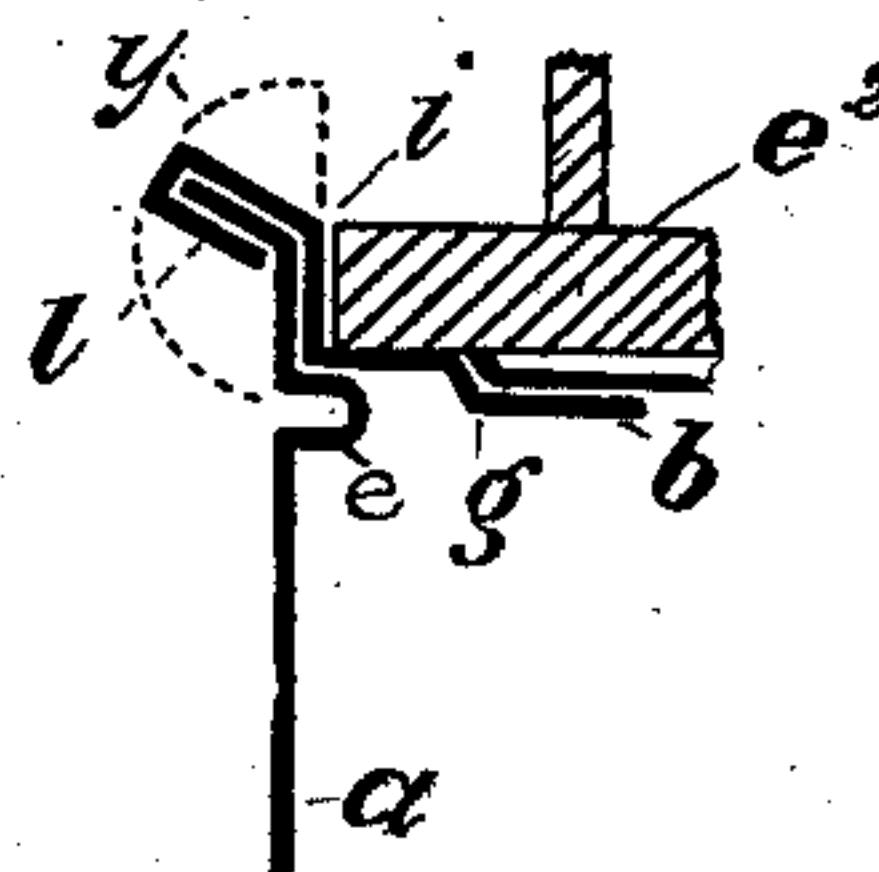


Fig. 4

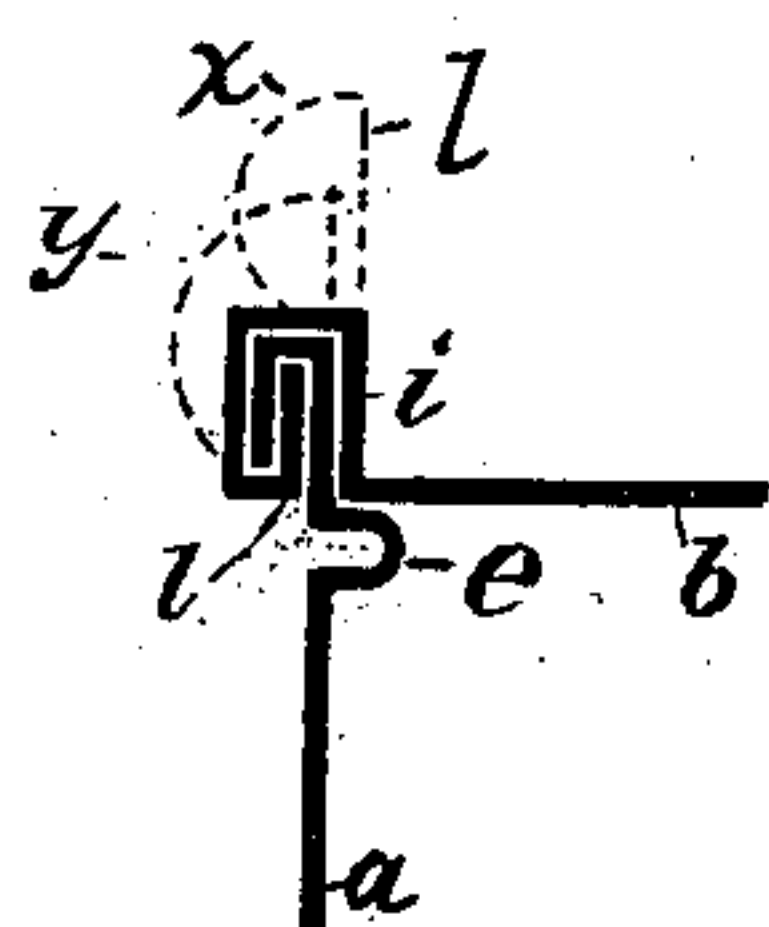
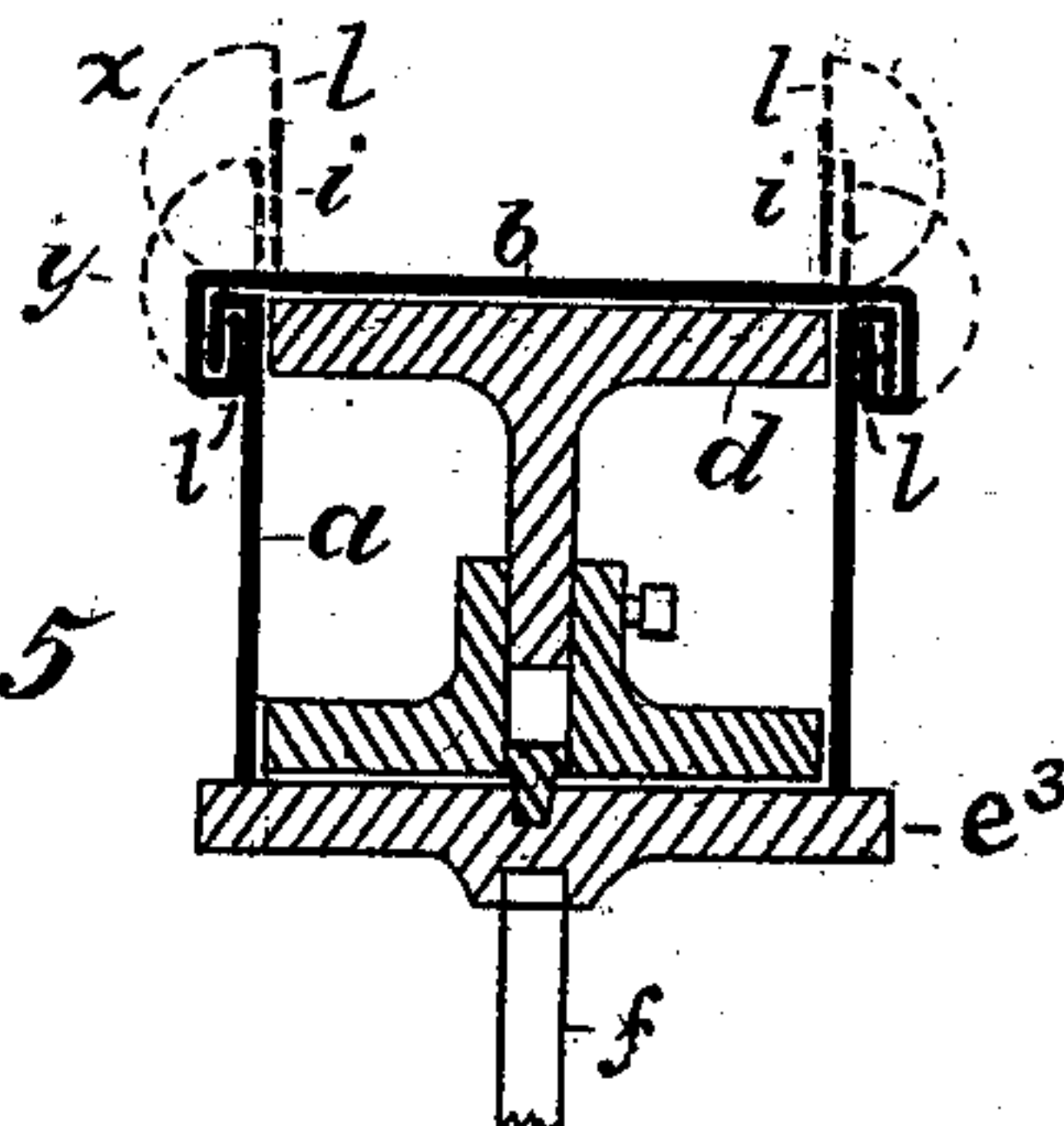


Fig. 5



Witnesses;

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FRANCIS A. WALSH, OF CHICAGO, ILLINOIS.

ART OF CONSTRUCTING SEAMS OF SHEET-METAL VESSELS.

SPECIFICATION forming part of Letters Patent No. 299,942, dated June 3, 1884.

Application filed June 11, 1883. (No model.) Patented in Canada August 4, 1883, No. 17,414.

To all whom it may concern:

Be it known that I, FRANCIS A. WALSH, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sheet-Metal Cans; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention relates to make and use the same, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 represents a central sectional elevation of a sheet-metal can ready to form a seam or joint. Fig. 2 illustrates the same with the first part of the process of forming the joint completed. Fig. 3 shows an intermediate stop, and Fig. 4 shows the joint or seam completed. Fig. 5 shows a can body and end in another form of can, in connection with a mandrel, necessary in such case, the parts beyond the head being shown dotted, and the seam finished on the sides of the can-body, turned over from the bottom of the wall *i*.

Like letters of reference indicate like parts in each figure.

The object of my invention is to form a seam for sheet-metal vessels without first flanging either the can or its countersunk end.

a represents the body of a can, and *b* a countersunk end, with wall *i* placed in its position and resting either upon the bead *e* or mandrel *d*, (see Fig. 5,) made to support said end in its desired position. Where an inside mandrel can be used, the bead or shoulder *e* becomes unnecessary. The mandrel *d* is placed centrally upon a plate, *e*², turning on a shaft, *f*, of a seaming-machine. Said mandrel may be made of permanent height, or, as shown, so that it may be adjusted to the height of the can. In some cases, as shown in Fig. 1, a shallow countersink, *g*, or annular raised bead is made in the end *b*, into which fits the upper plate or chuck, *e*², of a seaming-machine, to center and hold it in its place, and between which and the lower plate of a seaming-machine the can, with its cover, revolves on its axis. The cover *b* is stamped out with a rim or wall, *i*, and with or without the bead or shallow central countersink, *g*, as may be desired, and so that the wall *i* fits closely within the can-body, and, when in place, so that a portion, *l*, sufficient to turn over onto the can-body, projects above the can.

When all the parts are constructed and placed as just described, the successive turns

indicated by the dotted lines or curves *x y* may be made with dies, or, preferably, with a seaming-machine in which the can is revolved on its axis, and then a small roller or former is pressed against the edge of the part *l* with sufficient force to turn it over, outward from the position shown in Fig. 1 to that shown in Fig. 2, against the can-body, describing the curve *x*. After this first operation has been completed, the wall *i* and can-body are together bent at about the lower edge of the part *l*, made, in some constructions, to overlap only about one-half of the wall *i*, as seen in Figs. 2, 3, 4, and 5, so as to describe the curve *y*, until the parts above the center of said curve touch the side of the can-body, as shown in Fig. 4; or the part *l* may reach to about the bottom of the wall *i*, from which point as a center the curve *y* may be described, and the seam so formed rest wholly between the ends of the can, and by this last construction making the bottoms or ends flat. The seams so formed rest wholly between the ends or heads of the can, and the seam constructed as just stated will be supported in the process of construction on the internal mandrel, *d*, while in the former case an external mandrel is used to finish the seam; but the seams need not be entirely finished in this construction to become practically useful and answer for many purposes after the cans are filled, as is seen in Fig. 3. Where the seam is turned outward and stands at about right angles to the can-body, it will hold securely for many uses.

What I claim is—

1. The improvement in the art of constructing seams which consists in placing within the can-body an end provided with a wall, *i*, whereof a part, *l*, projecting beyond the can-body, is turned down in one or more successive steps, substantially as specified.

2. The improvement in the art of constructing a seam for sheet-metal vessels which consists in placing within the body an end provided with wall *i*, whereof a part, *l*, projects beyond the can-body, and then turning said part outward and down against the can-body, and then turning said part and a part or all of the wall *i* outward and down against the can-body, substantially as specified.

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Witnesses:

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