L. V. SONE.

SHEET-METAL CANS.

No. 190,094. Patented April 24, 1877.

Fig. 1.

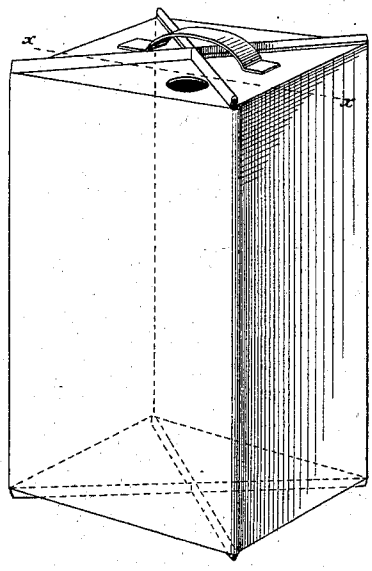


Fig. 2.

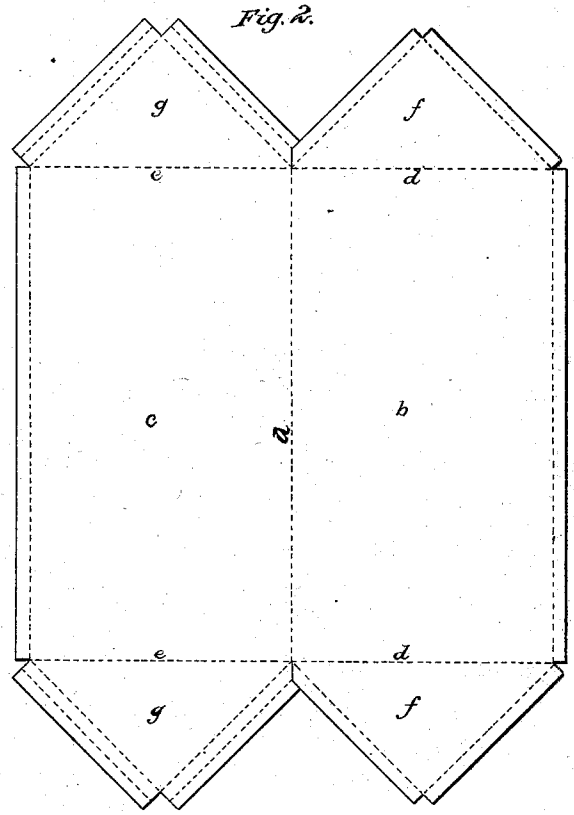


Fig. 3.

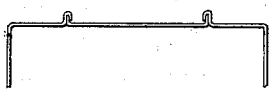


Fig. 4.

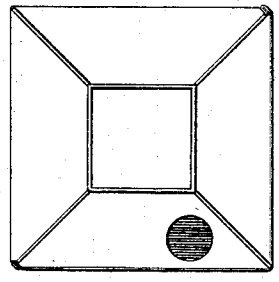
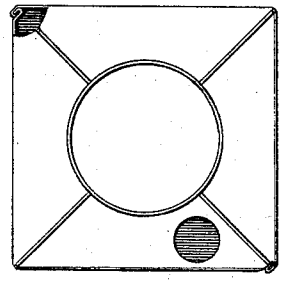


Fig. 5.



WITNESSES

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IMPROVEMENT IN SHEET-METAL CANS.

Specification forming part of Letters Patent No. **190,094**, dated April 24, 1877; application filed April 5, 1877.

To all whom it may concern:

Be it known that I, LOUIS V. SONE, of the city, county, and State of New York, have invented a new and useful Improvement in Sheet-Metal Cans, of which the following is a specification:

Heretofore, in making sheet-metal cans, the body and the two heads (the top and the bottom) have usually been formed separately, and subsequently united at their edges. This mode of construction forms seams, which, by reason of their position on the most prominent parts of the can, are necessarily much exposed to injury by blows from and against objects with which they come in contact.

It is one object of the present invention to remedy this defect in sheet-metal cans, and likewise to brace or strengthen the heads.

The mode of accomplishing this is shown in the accompanying drawing, in which—

Figure 1 is a perspective view of a four-sided can embodying the invention. Fig. 2 is a blank from which one-half of the can shown in Fig. 1 can be formed. Fig. 3 is a cross-section of one of the heads of the can through the line *x x* of Fig. 1. Figs. 4 and 5 are plan views, showing modifications in the mode of forming the head.

The dotted lines in Fig. 2 show where the blank is to be bent in forming it up for the finished can. It is to be bent along the line *a*, so that the two sides *b* and *c* of the can will stand at right angles to each other, and along the lines *d d* and *e e*, so that the triangular parts *f f* and *g g* will stand at right angles to the sides *b* and *c*. The edges of the triangular parts *f f* are to be turned up into a flange along the dotted line near the margin, while the edges of the triangular parts *g g* are to be bent into a U form, (along the double dotted lines,) so as to overlap the flange formed on the parts *f f*. The outer margins of the parts *b* and *c* are to be bent into simple hook form, so as to engage with the hooked edges of the adjacent sides of the can, forming, with them, the ordinary tinner's joint. A similar blank, similarly manipulated, will complete the four sides and the two heads of the can, after which the seams may be soldered in any convenient mode.

In a similar way the entire can may be made from a single blank; or, if preferred, one blank may be used for each of the sides; and the body, instead of being rectangular in section, may be triangular, or hexagonal, or of any desired number of sides.

To aid in shaping the blank up into form, the lines *d d* and *e e* may, if preferred, be slightly scored.

It is to be observed that by shaping the edges of the triangular parts of the blanks in the manner above described, these parts are stiffened, so that when they are bent over the edges will unite readily and uniformly, without the necessity of using an internal mandrel or rest to support the parts during the manipulation; and, consequently, both heads of the can may be formed in the same way. This would be impracticable if the edges of these triangular parts were left plain, so as to form in their union a simple lap-joint.

It is to be observed, further, that by shaping the edges of these parts of the blanks as above set forth they will interlock, and form seams standing out at right angles to the face or plane of the head. Seams thus formed will give such strength to the heads traversed by them that the heads may, if desired, be formed at right angles with the body of the can, while the simple lap-seam, under similar circumstances, would be found greatly deficient in strength.

One great advantage of being able thus to form the head at right angles with the body is, that the seams, if made upright or outstanding from the face of the head, may be readily dipped in a reservoir of melted solder without involving other parts of the can. The flat-headed cans, also, are far more economical in packing and in storage.

After the edges of the head parts of the blank or blanks have been engaged with each other, as above described, the seams formed thereby can be dipped all the more readily because standing up from the plane of the adjoining parts; and this even though the head should be made slightly crowning, provided its swell does not exceed the depth of the outstanding seam. It is by no means necessary that these lock-seams be exactly at right angles with the adjoining surface. In setting the seams together, preparatory to soldering,

they may be slightly turned over or inclined. This will aid in holding the parts in position during the soldering process.

As shown in Fig. 1 of the drawing, the seams formed upon the heads of the can run from the corners inward toward a central point; but it is not intended to limit the invention to this special relation of the seams to each other, either as regards their direction or their length. The blanks may be so cut as to form a part of the head—that is to say, to leave in the head a central aperture of any desired shape, to be closed by a similarly-shaped piece seamed onto the surrounding edges, thus giving additional strength. This construction is shown in plan in Figs. 4 and 5.

Among the advantages of the invention above described are the following:

First, cheapness of construction in the following particulars: First, the machine now used for cutting out the heads, as well as the panel-presses for stamping the heads, and the skilled labor necessary to operate these machines, may be dispensed with. Second, this can has nearly one-third less length of seam to be secured with solder than the ordinary can, and this saving of solder is an important item in a large manufacture. Third, the can may be made from a comparatively cheap grade of metal, as there are no sharp corners (as in many constructions) around which the metal must be drawn. Fourth, the machinery required for compressing the seams and for soldering them is of the simplest character. Fifth, less labor will be required than in the manufacture of the ordinary can, as the improved can is made from fewer pieces, and thus the expense of handling is materially reduced.

Second, its great strength. This results from the fact that the heads are cross-braced with outstanding seams, which give it great power of resisting either external or internal strain.

Third, by this improved construction, whereby the heads are made continuous with the vertical walls, the usual seams formed by the union of the walls with the periphery of the heads are entirely obviated. These seams are the most exposed parts of the ordinary can, and it is along these seams that it generally gives way first.

Fourth, this invention is specially valuable in connection with the bottom of the can, the central part of which is by this means firmly supported, so that its vibration and strain under the movements and weight of the contents of the can (which, with the ordinary countersunk head, is a prolific source of injury) is almost wholly prevented.

Not only does this supporting of the bottom upon the diagonal seams increase durability by preventing vibration and sagging, but it also provides a means of keeping the bottom up from contact with damp surfaces upon which otherwise it might be set, and thus it greatly aids in keeping the metal from corrosion.

What is claimed as new is—

1. A sheet-metal can one or both heads of which are composed of bent-over parts of the blank or blanks which form the body, the edges of the bent-over parts being united into lock-seams traversing the face of the head, substantially as set forth.

2. A sheet-metal can both heads of which are composed, either wholly or in part, of bent-over parts of the blank or blanks which form the body, the edges of the bent-over parts being united into seams traversing the face of the heads, substantially as and for the purpose set forth.

3. A sheet-metal can the head or heads of which are composed of a blank or blanks the edges of which are united into upright seams, or seams which stand out substantially at right angles with the surface of the heads, as set forth.

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