(No Model.)

F. A. WALSH.

SEAM FOR SHEET METAL VESSELS.

No. 294,167. Patented Feb. 26, 1884.

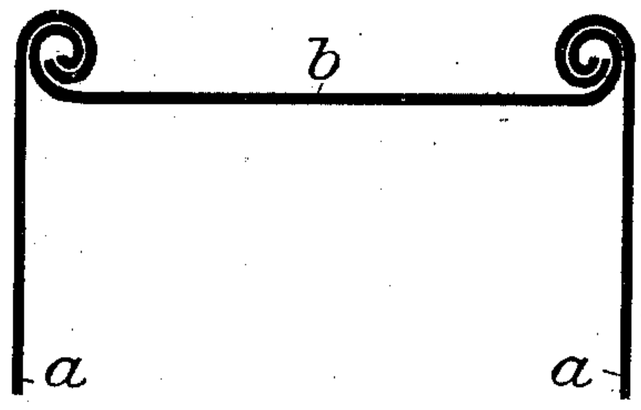

Fig. 1

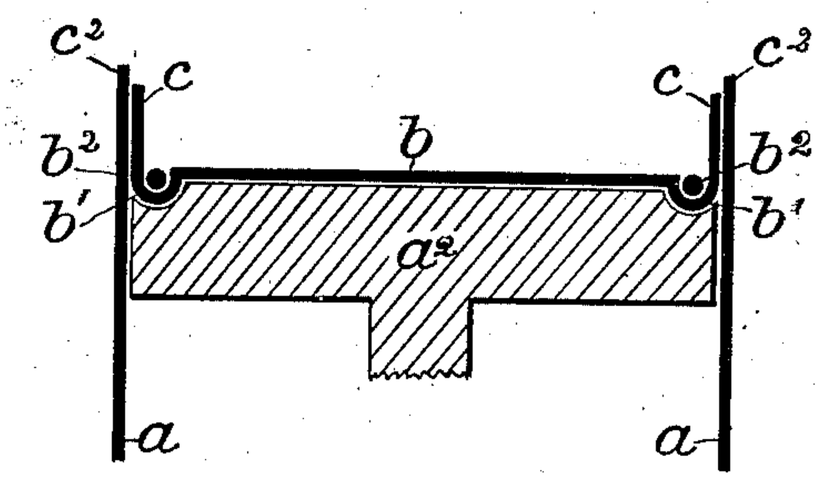

Fig. 2

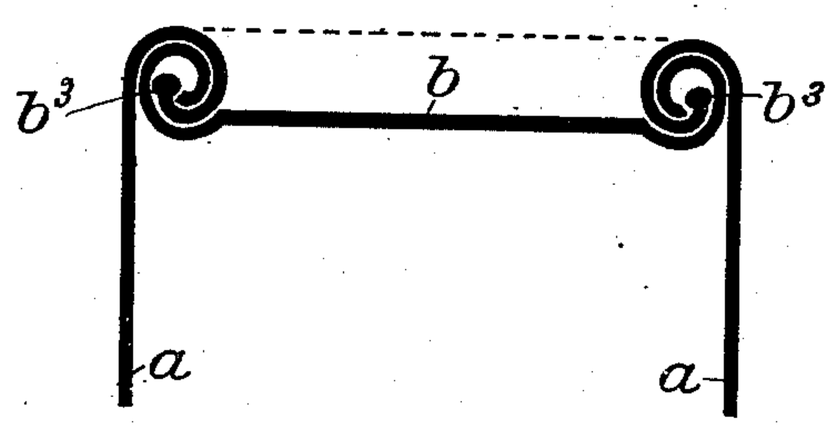

Fig. 3

Witnesses;
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UNITED STATES PATENT OFFICE.

FRANCIS A. WALSH, OF CHICAGO, ILLINOIS.

SEAM FOR SHEET-METAL VESSELS.

SPECIFICATION forming part of Letters Patent No. 294,167, dated February 26, 1884.

Application filed July 2, 1883. (No model.)

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 Seams for Sheet-Metal Vessels; 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 is a vertical sectional elevation of a can, showing a plain or flat end. Fig. 2 is a vertical sectional elevation of a modification of a can with its end as made and placed in position ready to unite by the held of an internal mandrel. Fig. 3 is a vertical sectional elevation of a can and end united, showing the end in different positions relative to the joint.

Like letters of reference indicate like parts.

The object of my invention is to construct a seam for joining the heads or ends and bodies of sheet-metal vessels, wherein the metal has not been subjected to alternate extension and compression, but to simple compression only, nor to being bent at sharp angles, but turned so that the joint will form a roll or scroll in cross-section, as shown, and which said seam shall lie on the top or ends of the vessel, instead of upon the sides, and which will also admit of a packing or filling being used in the joint without being liable to escape from the seam while being formed. As heretofore constructed, such seams have always been rolled or turned outwardly against the sides of the can-body, and consequently caused the metal to be stretched at the beginning and compressed at the end of the operation, thereby causing great strain, requiring metal of superior quality to prevent leaks, and, in fact, a joint can consequently never be made so tight as by this construction. It also requires more time and complicated machinery to make seams as heretofore constructed than by this construction.

a represents the can-body, and *b* the end. The can-body is preferably a straight cylindrical vessel; but the seam is equally applicable to flat-sided or other forms of vessels. The end *b* is countersunk, or is a disk with a wall or rim, *c*, which is placed within the body *a*, so that the upper edge of the rim *c* and end of the can-body are about in the same plane, or nearly so, but so as to turn together after the operation of forming the seam has begun.

In Fig. 2 the head *b* is held by a mandrel, a^2, while the seam is being formed. In this case the head is provided with a groove, *b'*, the object of which is to form a receptacle for a packing, as a gasket or cord, or wire of solder, or rubber b^2, or paint or cement, which, as the parts c^2 *c* turn upon each other, will press the packing inward and retain it in the center of the involute seam, thus effectually preventing the escape of the packing and making a securely-packed joint; or the packing may consist of solder b^3, attached to the end of the can-body.

The end *b* may be made to lie in the same plane as the top of the seam, as shown by the dotted line in Fig. 3, which would be necessary for heating-vessels.

I am aware that inturned seams have heretofore been made for the purpose of joining the ends to the bodies of sheet-metal vessels; but for reasons above stated, and also for the reason that stock of inferior quality may be used, and still form a tight and substantial joint, which may also be made much more rapidly and with far less complicated machinery, I construct my seam as here shown.

Within these limits my improvement is superior to joints made with flat sides and sharp angles.

What I claim is—

1. A seam or joint for uniting the bodies and ends of sheet-metal vessels, wherein the body and flange of the end are rolled inward upon the end of the can, substantially as specified.

2. In combination with a straight can body and end united by an involute seam, a packing applied substantially as specified.

3. A sheet-metal vessel formed of the straight-sided body *a* and head or end *b*, provided with a groove, *b'*, the body and end being united by an involute seam, substantially as specified.

FRANCIS A. WALSH.

Witnesses:

WM. ZIMMERMAN,

JOS. CHICOINE.