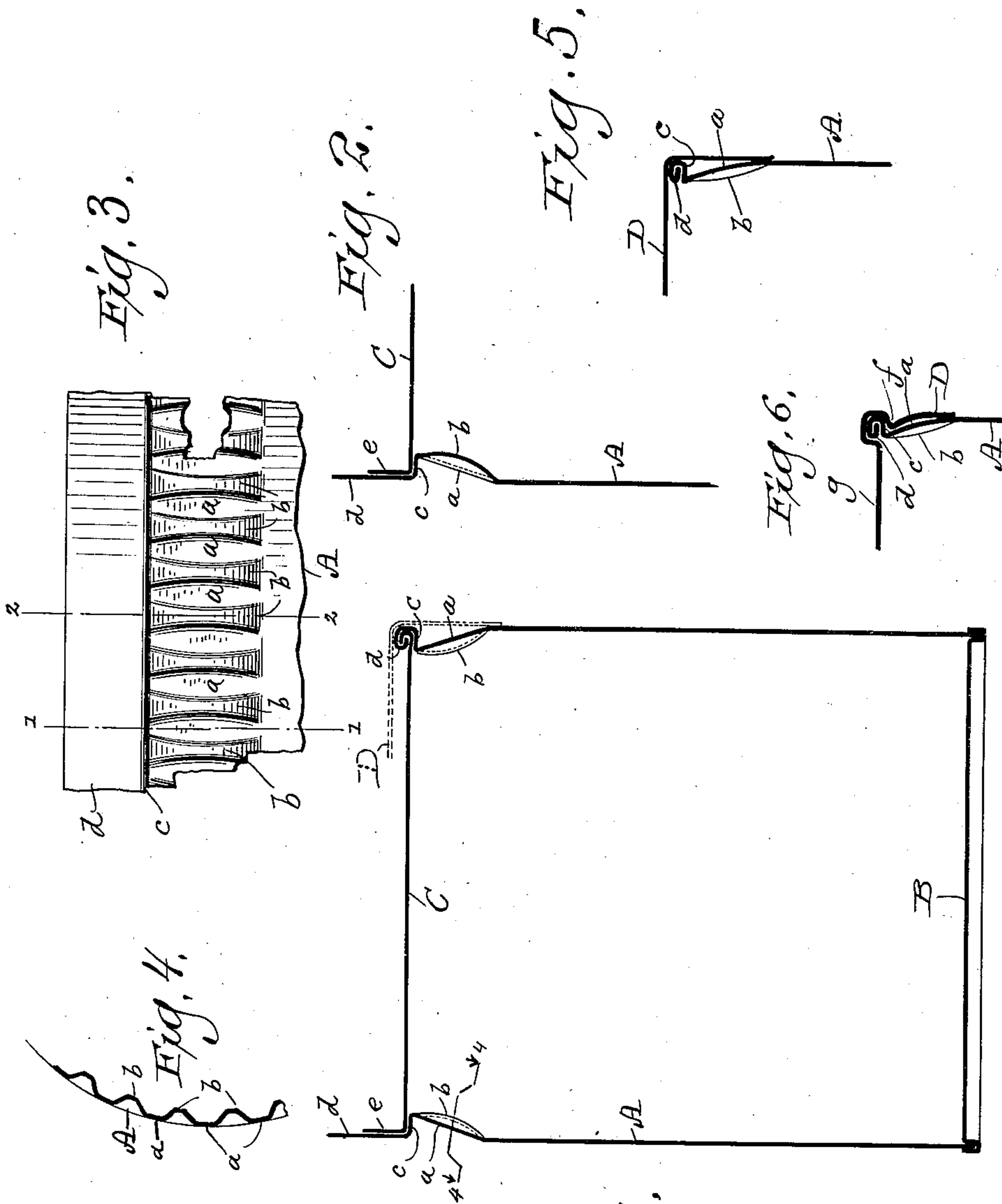


(No Model.)

F. A. WALSH.  
SHEET METAL VESSEL.

No. 485,851.

Patented Nov. 8, 1892.



Witnesses  
Geo W. Young  
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Fig. 1.  
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# UNITED STATES PATENT OFFICE.

FRANCIS A. WALSH, OF MILWAUKEE, WISCONSIN.

## SHEET-METAL VESSEL.

SPECIFICATION forming part of Letters Patent No. 485,851, dated November 8, 1892.

Application filed May 9, 1892. Serial No. 432,315. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS A. WALSH, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Sheet-Metal Vessels; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to sheet-metal vessels; and it consists in certain peculiarities of construction, as will be fully set forth hereinafter and subsequently claimed.

In the drawings, Figure 1 is a vertical sectional view illustrating one form of a sheet-metal vessel constructed according to my present invention, taken on the line 1 1 of Fig. 3. Fig. 2 is a like sectional view of a portion thereof, taken on the line 2 2 of Fig. 3. Fig. 3 is a detail elevation of a portion of a vessel constructed in accordance with said invention. Fig. 4 is a detail sectional view taken on the line 4 4 of Fig. 1. Fig. 5 is a detail sectional view illustrating another form of the invention. Fig. 6 is another like detail view.

The object of my present invention is to strengthen or stiffen the top or end of a sheet-metal vessel by corrugations or variations in the plane surface of said metal adjacent to said top or end to resist the strain incident to the subsequent closure of the vessel or the forming of a seam or beaded edge at said head or end.

A represents the wall or body of said vessel, which latter may be either a complete vessel, as shown in Fig. 1, or a breast or collar designed to be secured to a vessel-body and which, further, may be either round or square or of other shape, as preferred. The vessel shown in Fig. 1 is constructed with a vertical annular wall; but said vessel may taper in any direction, if desired.

B represents the bottom of the vessel, made and secured to the body in any way desired.

C represents a sealing-cover, of any suitable material—such as thin or soft sheet metal—and which may be, if preferred, considerably thinner than the material of which the body of the vessel is composed. At the upper left-hand side of Fig. 1 there is shown

the appearance of this form of the vessel before the top closure is made and on the other side of said figure its appearance after said closure is made.

In the illustration given the upper part of the wall A is provided with a series of corrugations (which may be of any shape, length, or projection desired) extending all around the vessel-body and inclining inward and upward to form braces for resisting pressure, which braces should be in the general direction of the strain and which are here shown as a series of depressions *b*, alternated with the portions *a*, which latter are shown in Figs. 1 to 4 as being practically on a straight inclined line and in Fig. 5 as rounded or swelled outward. Above the top of the band or series of corrugations the wall A is flanged outward, as shown at *c*, to form a seat for the sealing-cover C, from whence said wall extends upward in a vertical flange *d*. The sealing-cover C is provided with a vertical flange *e*, and when the vessel is ready for closure this flange *e* is brought over and interlocked in the process of seaming with the flange *d* of the wall A, as shown at the upper right-hand corner of Fig. 1. If desired, a slip-cover D (shown in dotted lines in Fig. 1) may be employed. In Fig. 5 the sealing-cover C is omitted and only the slip-cover D used, but the flange *d* is formed over the seat *c* in precisely the same manner, producing a beaded edge to the vessel. These vessels are especially designed for holding paints or colors ground in oil or japan, and in the latter case a slip-cover is a necessity after the sealing-cover has been cut away. They are also designed for containing lard, butter, and analogous materials which are required to be sealed after the vessels are filled. In some cases the sealing-cover may be made without the described flange *e* and simply rest on the described seat and be secured thereto by forming over the flange *d* into a bead, as already described, retaining the said sealing-cover between said seat and bead, and, further, if desired, the slip-cover D may have an inward bead *f* formed in its vertical wall for engagement with the under side of the seat or support *c*, as shown in Fig. 6, the top of the said slip-cover being either depressed, as shown at *g*, or straight, as in Fig. 5, this slip-



cover being used either with or without the sealing-cover already described.

It will be observed that in my present invention the outward projection of the described strengthening corrugations or variations from a plane surface is preferably always and everywhere within the extreme external line of projection of the wall of said body or breast, the said series of variations inclining inwardly toward the adjacent end of the vessel, and this is a marked advantage of my construction, as thereby it is possible to effect a close union of the vessel-wall and slip-cover, when such is employed, and to readily remove and replace said slip-cover without impairing its efficiency, and, further, in the operations of closing the vessel and in forming a bead or seam, as described, a much firmer and stronger support is afforded by reason of the construction stated than if the external projection of the series of corrugations or variations referred to was beyond the extreme external line of projection of the said wall. The seat for the bead or seam on the vessel-wall is formed directly at the termination of said corrugations, so as to better resist the strain in forming said bead or seam.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a sheet-metal vessel, a body or breast portion having a series of corrugations or variations from a plane surface formed around its wall adjacent to one end thereof, the said wall being formed with a practically-horizontal flange directly at the termination of said corrugations or variations, substantially as set forth.

2. In a sheet-metal vessel, a body or breast portion having a series of corrugations or variations from a plane surface formed around its wall adjacent to one end thereof and inclined inwardly toward said end, the outward projections of said variations being everywhere within the extreme external line of projection of the said wall, substantially as set forth.

3. A sheet-metal vessel comprising a body or breast portion having a series of corrugations or variations from a plane surface formed around its wall adjacent to one end thereof and inclined inwardly toward said end, the said wall thence extending outwardly

and terminating in a flange formed into a bead or seam, substantially as set forth.

4. A sheet-metal vessel comprising a body or breast portion having a series of corrugations or variations from a plane surface formed around its wall adjacent to one end thereof and inclined inwardly toward said end, the said wall thence extending outwardly, forming a seat, and terminating in a flange, and a sealing-cover resting on said seat and provided with a like flange interlocked into a seam with the flange of the vessel-wall, substantially as set forth.

5. A sheet-metal vessel comprising a body or breast portion having a series of corrugations or variations from a plane surface formed around its wall adjacent to an end thereof and inclined inwardly toward said end, the said wall thence extending outwardly, forming a seat, and terminating in a flange, and a sealing-cover resting on said seat and secured to the same by a bead or seam formed from the said flange, substantially as set forth.

6. A sheet-metal vessel comprising a body or breast portion having a series of corrugations or variations from a plane surface formed around its wall adjacent to an end thereof and inclined inwardly toward said end, the said wall thence extending outwardly, forming a seat or support, and terminating in a flange formed into a bead or seam, and a slip-cover fitting over said vessel and secured thereto by an inward bead engaging the under surface of said seat or support, substantially as set forth.

7. A sheet-metal vessel comprising a body or breast portion having a series of corrugations or variations from a plane surface formed around its wall adjacent to one end thereof, said wall having a smooth continuous surface next said corrugations or variations, in combination with a slip-cover extending over said corrugations or variations and having frictional contact with said smooth continuous surface, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

FRANCIS A. WALSH.

Witnesses:

H. G. UNDERWOOD,  
C. W. SCOTT.