No. 829,244. PATENTED AUG. 21, 1906.

G. W. WEBER.

SHEET METAL VESSEL.

APPLICATION FILED DEC. 1, 1905.

Fig. 1

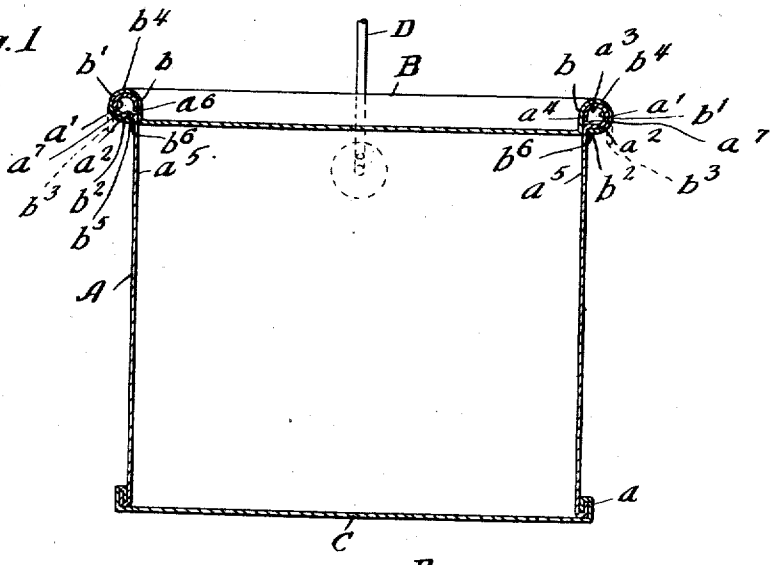



Fig. 2

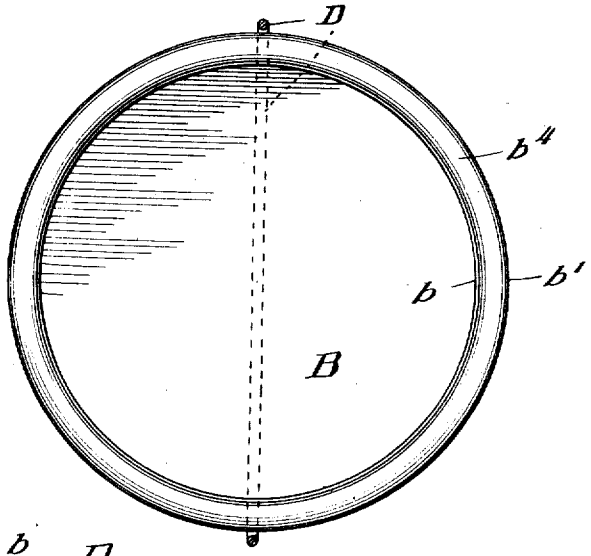
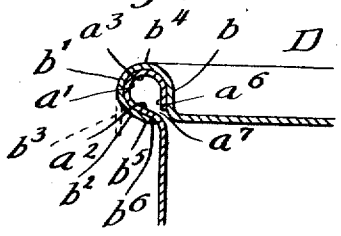



Fig. 3




Witnesses:

Wm. Geiger

A. W. Munday

Inventor:

George W. Weber

By Munday, Evarts & Adcock,

Attorneys

# UNITED STATES PATENT OFFICE.

GEORGE W. WEBER, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## SHEET-METAL VESSEL.

No. 829,244. Specification of Letters Patent. Patented Aug. 21, 1906.

Application filed December 1, 1905. Serial No. 289,918.

*To all whom it may concern:*

Be it known that I, GEORGE W. WEBER, a citizen of the United States, residing in the city of New York, in the county of New York and State of New York, have invented a new and useful Improvement in Sheet-Metal Vessels, of which the following is a specification.

My invention relates to improvements in sheet-metal cans, pails, or other vessels of the kind or class having what is commonly known as a "wire top"—that is, a curve or roll at the upper end of the body—and which are commonly used for packing and shipping paints, the roll at the upper end of the body being outwardly turned, so that the mouth or opening will be of the full diameter of the vessel, and the roll serving not only to stiffen and strengthen the body of the vessel at its upper end, but also affording a smooth surface to wipe the paint-brush upon, and an external shoulder under which the flange of the cover is crimped or turned to lock and hold it in place, the lower edge of the cover-flange being then soldered to the body to effect a tight closure. Heretofore in the practical use of these so-called "wire-top" or roll-top paint-cans considerable difficulty was experienced in forming perfect or hermetically-tight soldered seams between the cover and the body of the vessel, owing to the fact that during the soldering operation the air contained in the hollow roll at the top of the can-body expands and escapes in fine bubbles through the solder of the joint while it is molten or setting, thus producing pin-holes or leaks, and in addition to this the soldering of the joints is expensive, as the hole or cavity of the roll fills or partially fills with solder, and thus requires an unnecessary large amount of solder to form the joint.

The object of my invention is to provide an improved construction of these wire-top pails or vessels by which these difficulties may be overcome or avoided and the pail manufactured and soldered much more cheaply and perfectly, while at the same time retaining the external roll on the body of the vessel, the mouth of full diameter, and the other essential features of paint pails or vessels of this class.

My invention consists in the means I employ to practically accomplish this object or result—that is to say, it consists in providing the body of the pail or vessel at its top with an offset equaling in extent the diameter of the so-called "wire top" or roll to be formed at the top of the vessel and then providing this offset portion with an inwardly-curved roll, the inner wall of which is flush with the body of the vessel, and combining therewith a cover having an inner annular flange or wall which fits inside the can-body and the roll at the upper end thereof and an outer annular flange or wall, the lower edge of which is crimped or turned under the roll at the upper end of the can-body and soldered thereto at its lower edge. By this improved construction the solder is unable to enter the cavity of the hollow roll on the body of the vessel, as the slot at the edge of the curved flange of the roll is upon the inside of the vessel instead of upon the outside thereof, as in the old construction. As in my improved construction the solder cannot enter the cavity of the roll I am enabled to solder very cheaply with automatic machinery and with a great saving of solder.

My invention also consists in the novel devices and in the novel combinations of parts and devices herein shown and specified in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a central vertical sectional view of a so-called "wire-top" or roll-top paint pail or vessel embodying my invention. Fig. 2 is a top or plan view, and Fig. 3 is a detail view showing a slightly-modified construction.

In the drawings, A represents the body of a paint pail or vessel, B the top or cover, and C the bottom or lower head, the latter being preferably secured to the body by a double seam $a$. The body A of the vessel has at its upper end an offset portion $a'$, forming an external shoulder $a^2$ and inwardly curved into a roll $a^3$, preferably of substantially circular form in cross-section, the inner wall $a^4$ of the roll being flush with the inner surface $a^5$ of the body of the vessel, and thus constituting an upward extension thereof. The extreme edge $a^6$ of the curved or rolled offset portion is thus upon the inside of the vessel, and the only entrance to the cavity of the hollow roll is thus upon the inside of the vessel along the annular line where the edge or flange $a^6$ meets the main wall of the vessel.

The top or cover B of the vessel has an inner annular wall B snugly fitting within the

mouth of the vessel and engaging the inner annular wall $a^4$ of the annular roll $a^3$ and also an outer annular flange or wall $b'$, the lower portion $b^3$ of which is turned or crimped under the external shoulder $a^2$, formed on the body of the vessel by the annular roll $a^3$ at the upper end thereof. The dotted lines in Fig. 1 show at $b^3$ the form of the annular wall $b'$ before its lower portion $b^2$ is turned or crimped under and against the external annular roll $a^3$ of the body of the vessel. The upper intermediate portion $b^4$ of the cover-flange uniting the inner upwardly-projecting flange $b$ and the outer downwardly-extending flange $b'$ is curved to correspond to and fit the upper portion of the can-body roll $a^3$. The cover B thus has an annular roll conforming to and fitting and surrounding and embracing the annular roll at the upper end of the body of the vessel, the two annular rolls thus coacting with each other to stiffen and strengthen the upper end of the vessel and prevent any tendency to spring inward or collapse when it is lifted by the bail D, however heavy may be the paint or material the vessel contains. This prevents all danger of breaking the solder joint $b^6$, which unites the extreme inner and lower edge $b^5$ of the cover-flange with the body of the vessel at the lower portion of the roll $a^3$. As the opening $a^7$ into the cavity of the roll at the extreme edge $a^8$ thereof is upon the inside of the vessel, the solder cannot enter the cavity of the roll in the soldering operation, so that the soldering may be done with a very small amount of solder and so that the expansion of the air in the cavity of the roll by the heat of the soldering operation cannot cause bubbles of air to be forced through the solder of the joint while it is molten, partially molten, or setting, and thus cause leaks or defects in the soldered joint, and as the soldered joint $b^6$ is upon the outside of the vessel and at the base or lower portion of the roll $a^3$ the construction is such that the soldering may be conveniently done by automatic soldering-machines very rapidly and cheaply.

In the modification illustrated in Fig. 3 the external shoulder $a^2$ on the body of the vessel at the offset portion thereof is upwardly inclined instead of substantially at right angles, as in Fig. 1. This form I find more convenient for soldering upon automatic soldering-machines having rotary cylindrical wipers, as the angle between the shoulder $a^2$ and the body of the vessel being not so sharp affords better access to the wiper.

I claim—

1. In a "wire-top" sheet-metal pail or vessel, the combination with a sheet-metal body having an externally-offset portion at its upper end curved inwardly into an annular roll, of a sheet-metal cover therefor fitting within said annular roll at the upper end of said body, and provided with a flange curved into an annular roll, fitting and embracing said annular roll on said body, and furnished with a soldered joint uniting its lower edge to the body of the vessel, substantially as specified.

2. In a sheet-metal vessel, the combination with a body having an external annular roll at its upper end, of a cover fitting within said wall and having inner and outer annular flanges, the outer flange being turned or crimped at its lower portion under said external roll on the body and united thereto by a soldered joint, substantially as specified.

GEORGE W. WEBER.

Witnesses:
L. A. WELLES,
W. P. PALMER.