

No. 756,406.

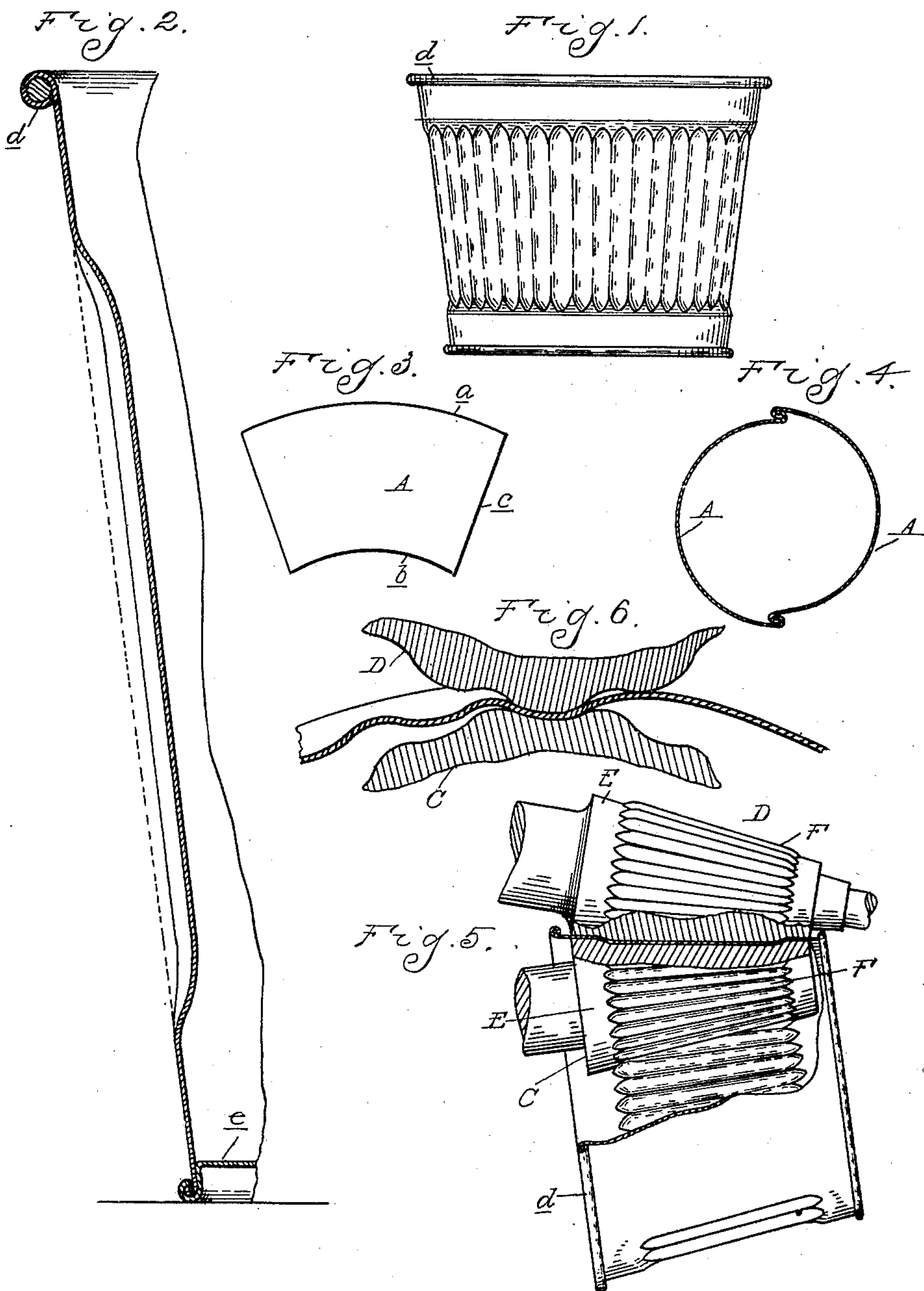
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C. PUDDEFOOT & B. BRISCOE.

PAIL.

APPLICATION FILED NOV. 14, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES PUDDFOOT AND BENJAMIN BRISCOE, OF DETROIT, MICHIGAN,
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PAIL.

SPECIFICATION forming part of Letters Patent No. 756,406, dated April 5, 1904.

Application filed November 14, 1903. Serial No. 181,170. (No model.)

To all whom it may concern:

Be it known that we, CHARLES PUDDFOOT and BENJAMIN BRISCOE, citizens of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Pails, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to the manufacture of vessels formed of sheet metal and having corrugated walls.

More particularly, the invention relates to the manufacture of sheet-metal buckets or pails having flaring walls which are corrugated.

It is the object of the invention to obtain a vessel of the character described and which is further characterized by having the walls thereof formed with plain zones at opposite ends and an intermediate corrugated portion, whereby great strength and rigidity is imparted to the vessel.

The invention consists in the peculiar construction of the vessel and in the novel method of manufacturing the same.

In the drawings, Figure 1 is an elevation of the vessel. Fig. 2 is a vertical section through the corrugated wall of the vessel. Fig. 3 is a plan of the sheet-metal blanks from which the walls of the vessel are formed. Fig. 4 is a horizontal section through a pair of blanks bent into half-round form and seamed together. Fig. 5 is a diagrammatic view illustrating the manner of corrugating the walls of the vessel and the rolls for forming the same. Fig. 6 is a horizontal section through a portion of the corrugated wall of the vessel.

A is a sheet-metal blank forming a segment, preferably one-half, of the wall for the vessel. This blank is formed with curved edges *a* and *b* and a tapering straight side *c*, so that when formed up and joined with its complementary blank a conical wall will be produced.

A pair of the blanks A being thus formed, the segments are joined as illustrated in Fig. 4. The upper end of the wall is then preferably beaded, as at *d*, and a bottom *e* is seamed to

the lower edge in any of the well-known methods of manufacturing sheet-metal vessels.

Heretofore sheet-metal vessels having corrugated walls have been formed by first corrugating the blank from which the wall is formed and afterward bending said blank into its round form. In the improved method which forms a part of the subject-matter of this invention the vessel with plain walls is first completely formed and subsequently is corrugated. This facilitates the manufacture of the wall from segmental blanks and permits of these blanks being seamed together, while at the same time the complete vessel may be corrugated in the seamed portion as well as the other portions of the walls. In the corrugation of the completed vessel a difficulty is encountered which is not present in the corrugation of the flat blank. This is due to the fact that it is desirable to retain plain zones above and below the corrugated portion of the wall, and the difficulty is to avoid crimping or distorting these plain zones during the operation of corrugating. We have overcome this difficulty by so forming the corrugated zone of the wall that every portion thereof is of substantially the same length of contour circumferentially as the corresponding portion of the plain wall. This necessitates the contraction in diameter of the circumscribing circle of each portion of the corrugated zone, and inasmuch as the wall is of conical or upwardly-flaring form each portion of the corrugated zone in vertical cross-section is differently contracted in diameter—that is, there is a progressive contraction which is proportionately greatest at the upper or large end of the vessel and least at the lower or smaller end. For producing this result we preferably employ a pair of corrugated conical rolls C and D. These are provided with plain portions E at opposite ends and intermediate fluted portions F. The roll D, which is designed to contact with the outer face of the wall of the vessel, has its fluted portion projecting beyond the line of its plain portions, while the roll C has its flutes depressed below the line of the plain portions. Thus the cor-

rugations formed in the sheet-metal wall will be bent inward, and the proportion of parts is such that this inward bending or contraction in diameter exactly compensates for the increase in length of the wavy line in comparison with a plain circle or arc, so that precisely the same length of contour is maintained. As a consequence the sheet metal is not either expanded or contracted circumferentially, and thus there is no tendency to exert a strain upon the plain zones which would tend to distort the latter. The ends of the corrugations are rounded off so as to gradually merge into the plain zones and the necessary expansion of the metal to produce these rounded ends is in the longitudinal direction and in the line of contact of the rolls with the wall. Thus no distortion of the metal in the plain zones is effected in either direction.

What we claim as our invention is—

1. A vessel provided with a flaring annular wall formed from sheet metal, having plain zones at opposite ends and an intermediate corrugated zone crimped to contract the diameter of the circumscribing circle.

2. A vessel provided with a flaring wall formed from sheet metal having plain zones at opposite ends and an intermediate corrugated zone crimped to progressively contract the diameter of the circumscribing circle so as to maintain substantially the same circumferential length of contour as before the crimping.

3. A vessel provided with a flaring annular wall formed from sheet metal having plain zones at opposite ends and an intermediate corrugated zone with rounded ends to the corrugations merging into the plain zones the diameter of the circumscribing circle for each portion of the corrugated zone being contracted to maintain the length of the wavy line substantially equal to the circumference of the uncorrugated blank.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES PUDDEFOOT.
BENJAMIN BRISCOE.

Witnesses:

FRANK BRISCOE,
LILLIE BROWNELL.