C. F. POTTER.

DOUBLE WALLED CONTAINER.

APPLICATION FILED JUNE 24, 1912.

1,093,648. Patented Apr. 21, 1914.

Fig. 1.

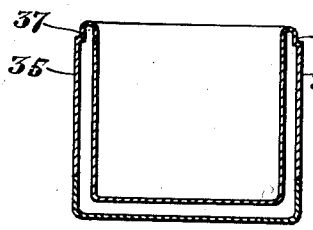


Fig. 2.

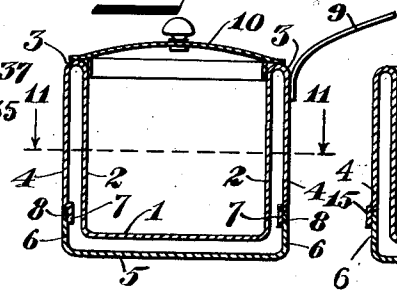


Fig. 3.

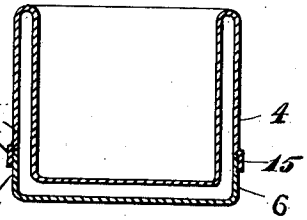


Fig. 4.

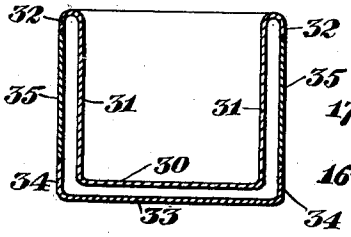


Fig. 5.

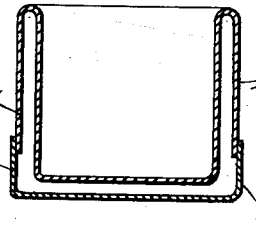


Fig. 6.

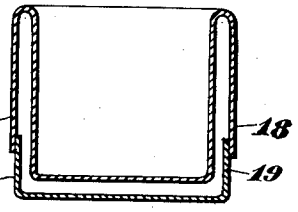


Fig. 7.

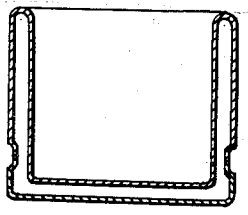


Fig. 8.

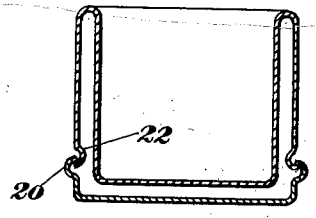


Fig. 9.

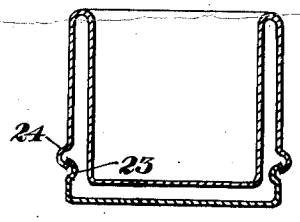


Fig. 10.

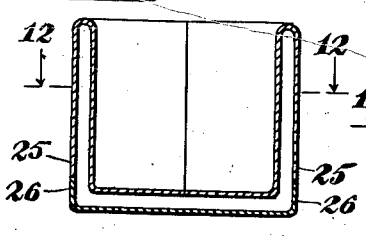


Fig. 12.

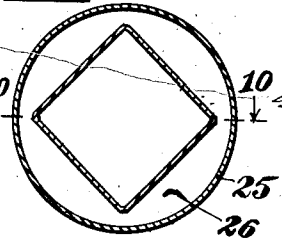
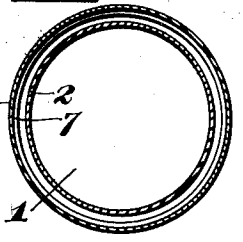


Fig. 11.



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UNITED STATES PATENT OFFICE.

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DOUBLE-WALLED CONTAINER.

1,093,648. Specification of Letters Patent. Patented Apr. 21, 1914.

Application filed June 24, 1912. Serial No. 705,454.

To all whom it may concern:

Be it known that I, CHARLES F. POTTER, a citizen of the United States, residing in Woodhaven, in the county of Queens and State of New York, have invented certain new and useful Improvements in Double-Walled Containers, of which the following is a specification.

The objects of my invention are to facilitate and cheapen the construction of unital, double-walled containers or vessels substantially cylindrical or prismatic in form,—these terms being used in their ordinary and limited meanings *i. e.*, to mean forms parallel cross-sections of which are all substantially similar and equal, and relate especially to containers formed of pressed or drawn elements and tubular elements welded, brazed or otherwise secured together, especially containers of considerable depth relatively to their diameter: to provide stiff, strong and smoothly-finished elements free from blemishes and tool-marks, which, when united, will make a handsome, satisfactory and durable container, and to these ends to form the tubular elements thereof integral with the discoid, polygonal or torus-shaped elements into which they merge.

The accompanying drawings show a number of variants of my invention. All the figures are axial sections of different variants except Figure 11 which is a transverse section in the line 11—11 of Fig. 2, and shows cylindrical tubular elements, and Fig. 12, which is a transverse section on the line 12—12 of Fig. 10 and shows a cylindrical outer and a polygonal (square) inner tubular element. It may be remarked that, so far as relates to the hatched portions of Figs. 10 and 12, they represent sections of any of the other figures and that Figs. 1 to 9 inclusive might be sections of vessels having either cylindrical or polygonal tubular elements, as would Fig. 10, which is specifically a section on line 10—10 of Fig. 12, if the axial line therein were omitted.

In the following description, the word "disk" means a discoidal or polygonal element; "tube" means a cylindrical or prismatic tubular element; and "torus" means a semi-torical element such as is illustrated uniting tubular elements; and "welded" means welded, brazed or otherwise joined.

That variant of my invention which produces the cheapest deep containers, withal strong and handsome, is illustrated in Fig. 4, in which, an inner member constituting an assembling unit is pressed or drawn integral, with a disk 30, tube 31 and torus 32, the outer member and assembling unit is similarly formed with a disk 33 and a short tube 34, long enough to make a rigid unit and substantially equal in diameter to the torus 32, and a supplementary tube 35 of the same diameter is welded to and unites the tube 34 and torus 32, thus forming a strong, smoothly-finished, handsome container with an air space contained within its hollow walls.

The supplementary tube 35 may be drawn seamless, rolled out of a sheet of metal, or otherwise cheaply formed, and its use enables me to draw the disk 33 and the short tube 34 integral with it, of low grade, cheap metal, without annealing it; whereas deep forms require fine metal and one or several annealings. This type of construction is obviously generally applicable in the manufacture of discoidal and tubular members of my container, and the cheapest mode of producing them.

Fig. 1 illustrates a variant in which the outer tube 38 is offset adjacent to the torus to form an exterior shoulder 37, useful in some cases for supporting a lid and for other purposes.

Fig. 2 illustrates the strongest vessel possible to build with perfectly smooth exterior. It is made of two integral members with a lapped joint. The simpler members, which are made without annealing of low-grade metal, comprises the outer disk 5 and a short tube 6. The other members, which require good metal and annealing, comprises the inner disk 1 and tube 2, the torus 3, outer tube 4, and a short offest end tube 8 which enters and fits the tube 4 of the other member, to make the lapped joint 7.

The variant illustrated in Fig. 3 varies slightly from that shown in Fig. 2 in that the lapped joint has the appearance of a band or molding, and the weld is concealed, a short offset tube 15 being formed on and larger than the outer tube 4 of the main member, into which the tube 6 of the bottom member slips to make the lapped joint.

It is obvious that the tubes 8 and 15 of Figs. 2 and 3, respectively, might be separate hoops.

Figs. 5 and 6, illustrate variants in which the lapped joint is formed without an offset member, the outer tube, 17, of the main

member (in Fig. 5) slipping into the short tube 16 of the bottom member, and Fig. 6 a variant from the above in which short tube 19 of the bottom member slips into the outer tube 18 of the main member, the weld in the first case being inconspicuous and in the second concealed, when the container is in use.

Fig. 7 illustrates a variant in which the main member is like that illustrated in Fig. 2, and the tube of the bottom member is inwardly offset so that when assembled the edges of said offset tubes meet and are welded, and a recess or concave molding is thus formed in the outer skin of the container, which, in some cases, is very advantageous and useful as a seat in which to secure the strap of a handle or yoke by means of which the container and its contents can be lifted and transported.

Figs. 8 and 9 illustrate variants in which the members have reversely-curved and located tori at their meeting edges, which, when assembled, give the appearance of half-round or ogee moldings, and conceal the weld, are handsome and make places for attaching a yoke or handle for lifting and transporting the containers and their contents. In the variant of Fig. 8, the exterior, outwardly-convex, extended torus 20 is formed on the bottom member, and the interior, outwardly-concave, inset torus 22 on the main member, while in that of Fig. 9 these locations of the complementary tori are reversed, the extended torus 24 being on the main, and the inset torus 23 on the bottom member; and the members are assembled by slipping or springing the edges of the tori one into the other and welding them together.

I may provide suitable covers, 10, as shown in Fig. 2, for my containers, with knobs or handles to lift them by and tubular and annular flanges to properly retain them in position; and I may provide small containers with handles 9 as shown in Fig. 2.

It will be noted that the hollow walls of my container and the contained air space insulate their inner members and adapt them for use as receptacles for substances which it is desirable to preserve at a uniform temperature and that hot substances will remain hot and cold substances cold for long periods when stored in them. Further, the variants in which a convex or concave annulus is formed in the outer tube, by which a yoke or double-ended handle can be securely attached, are peculiarly suited for hand ladles for the transportation of melted metal in foundries and elsewhere, because they are light, strong and do not conduct heat rapidly. Where my containers may be subjected to great variations of temperature, which would cause undue expansion of the air contained in the air-space within its hollow walls, I may perforate their outer walls, so that said heated air will not strain or burst them. My containers are also admirably adapted for use as double boilers, for rice, oatmeal and similar foods, and for the baking and roasting bread, cake, meat and other foods, which can be cooked in them without danger of being scorched; but their most important use is for hand ladles in foundries.

It would obviously be within the scope of my invention to flatten the torus, 32, into a ring with short tubular inner and outer walls united by a flat annulus; but such a shape would be more difficult to make and less sightly.

Having thus described my invention, I claim:

1. A double walled container comprising merging inner discoid and tubular elements and a torus, an outer tubular element united to said torus, merging outer discoid and tubular elements and a concavo-convex circumferential element formed on one of said outer tubular elements and adapted to form a molding on the assembled container, said outer tubular members being welded together.

2. A double-walled container comprising merging inner discoid and tubular elements and a torus, an outer tubular element united to said torus, merging outer discoid and tubular elements and complementary concavo-convex circumferential elements formed on said outer tubular elements, and adapted to form concavo-convex molding on the assembled container, said outer tubular members being welded together.

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