

C. STOLLBERG.

ART OF MANUFACTURING ONE PIECE FOLDED SHEET METAL SAP RECEPTACLES.

APPLICATION FILED APR. 6, 1908.

1,048,754.

Patented Dec. 31, 1912.

2 SHEETS—SHEET 1.

Fig. 1

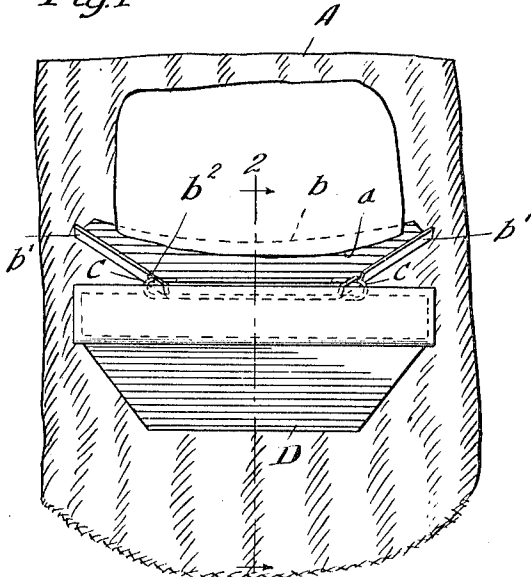


Fig. 2

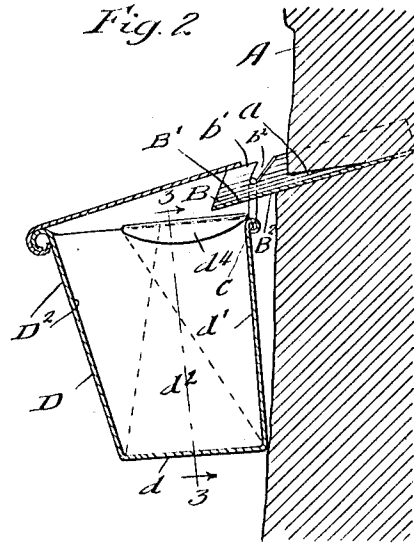


Fig. 3

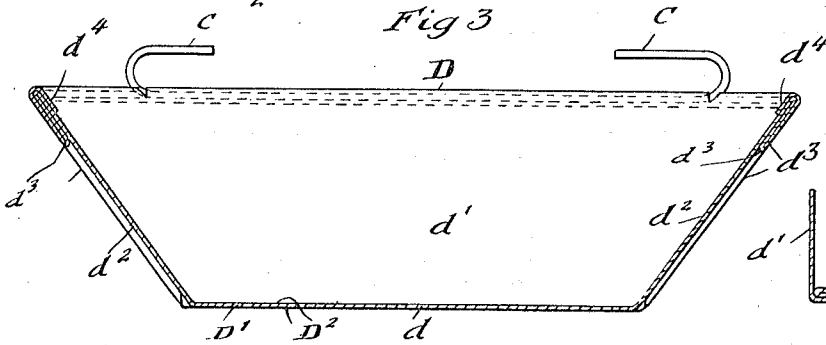


Fig. 5

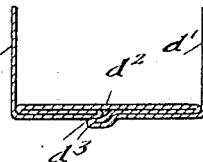


Fig. 4

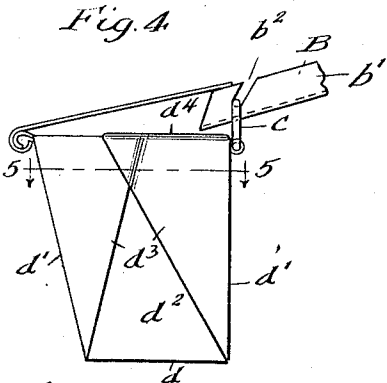
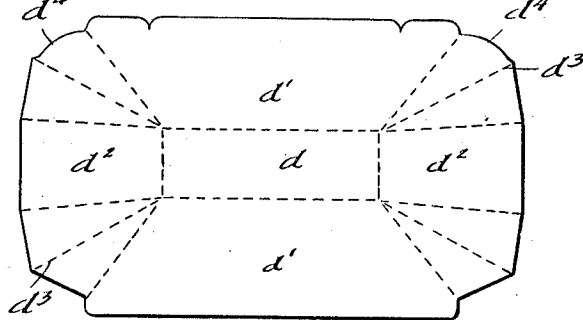


Fig. 6



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2 SHEETS—SHEET 2.

Fig. 7

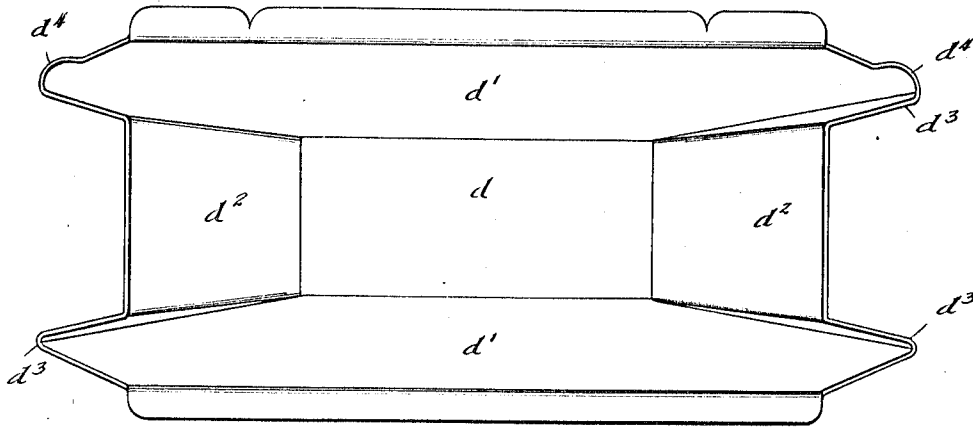


Fig. 8

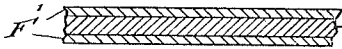


Fig. 9

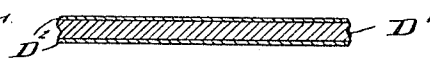


Fig. 10

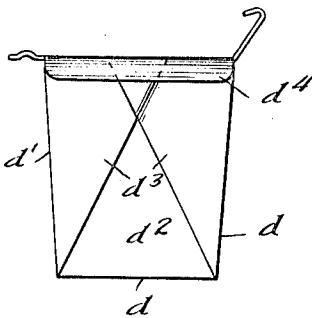
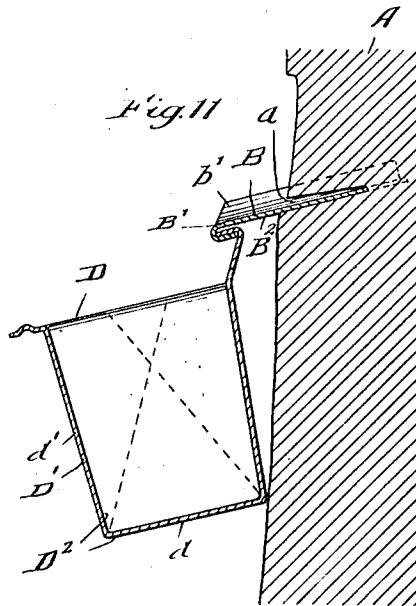


Fig. 11



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UNITED STATES PATENT OFFICE.

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ART OF MANUFACTURING ONE-PIECE FOLDED SHEET-METAL SAP-RECEPTACLES.

1,048,754.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed April 6, 1908. Serial No. 425,498.

To all whom it may concern:

Be it known that I, CHARLES STOLLBERG, a citizen of the United States, residing in Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Improvement in the Art of Manufacturing One-Piece Folded Sheet-Metal Sap-Receptacles, of which the following is a specification.

My invention relates to art of manufacturing one piece sheet metal folded turpentine collecting cups or sap receptacles.

Heretofore it has been impossible to make durable and satisfactory one piece folded sheet metal turpentine collecting cups of galvanized sheet iron or steel either out of previously or commercially galvanized sheets or out of plain black sheets and subsequently galvanizing the cup or vessel after it is folded and formed up into shape. Because, if on the one hand, it is attempted to make the cup of ordinary galvanized sheet iron or steel, the sharp bending and folding of the sheet causes the ordinary galvanizing coating or spelter to flake or scale off during the folding or forming operation at the sharp bends or folds, and especially at the bottom corners of the vessel where the angle folds come to a sharp point and where the stock receives more or less of a twist in addition to its sharp bends or folds, so that the vessel will speedily rust through on exposure to the weather in use, at the folds and corners where the spelter coating is flaked off, and thus become leaky and useless. And because, if on the other hand, it is attempted to make the cup of an ordinary black iron or steel sheet and do the galvanizing or spelter coating after the cup is folded and formed up into shape, the confined pockets produced by the angle folds and locking lips of the folded vessel will cause the interior surfaces of such folds or pockets to be imperfectly cleaned or brightened by the acid of the pickling bath, to be imperfectly washed free from the pickling acid in the subsequent washing step and to be imperfectly coated by the spelter in the final step of the galvanizing process; so that the galvanized folded cup thus produced will speedily rust through and become leaky and worthless, the destruction being doubtless chiefly due to the acid of the pickling bath (which is confined in or between the angle folds and impossible of complete removal,) attacking the iron or

steel and causing speedy rusting and destruction of the vessel.

The object of my invention is to provide an improved method or process of manufacturing one piece folded sheet metal sap receptacle of galvanized iron or steel in which all parts of the receptacle, inside and out, will have a galvanizing or spelter coating, and be efficient and durable and protected from rusting through or deterioration on exposure to the weather. I have discovered that this object or result can be practically accomplished by making the one piece folded sheet metal receptacle out of galvanized sheet iron or steel in which the galvanizing or spelter coating is extraordinarily thin, preferably less than half the thickness of the coating ordinarily found upon commercial galvanized sheet iron or steel, such thin spelter coating being applied to the sheets while they are in the flat and prior to the forming and folding of the receptacle therefrom.

I have discovered and demonstrated by experiment and practical use that a one piece folded sap receptacle of galvanized sheet iron or steel in which the galvanizing or spelter coating is reduced from the customary two and a half ounces to the square foot as ordinarily used, to one ounce or one and a quarter ounces per square foot, that all parts of the sheet after it is folded into the receptacle will remain fully and perfectly covered and coated by the spelter at the sharp corners and folds, as well as elsewhere, and without any tendency to flake off. And as in my invention the thin, bendable, non-flakeable galvanizing or spelter coating is applied to the black sheet prior to the formation of the receptacle, the angle folds and other confined pockets of the receptacles are not only fully and perfectly coated with the spelter, but the difficulty arising from the rusting through of these parts by reason of imperfect washing or removal of the pickling acid, is entirely done away with.

In the accompanying drawing forming a part of this specification, Figure 1 is a front elevation of a one piece folded galvanized sheet steel or iron sap receptacle manufactured by my invention, the same being shown as applied to the turpentine bearing tree. Fig. 2 is a vertical cross section on line 2—2 of Fig. 1. Fig. 3 is a section on line 3—3 of Fig. 2. Fig. 4 is an end elevation. Fig. 5

is a section on line 5—5 of Fig. 4. Fig. 6 is a detail view showing the sheet metal blank from which the one piece folded receptacle is formed. Fig. 7 shows the blank in a partially folded condition and Fig. 8 is an enlarged detail section showing the galvanizing coating or spelter on the iron or steel sheet and Fig. 9 is a cross sectional view showing the difference in thickness between the spelter coating which I employ, and that ordinarily found upon commercial galvanized sheet steel or iron. Fig. 10 is an end view and Fig. 11 a vertical cross section illustrating a modification in which the locking lips d^4 are located on the flaring ends d^2 instead of on one of the angle folds d^3 and in which the supporting hook is formed on one of the upright sides of the vessel and integral therewith.

In the drawing, A represents a portion of a turpentine bearing or other sap bearing tree in the cut or incision a of which is inserted a sheet metal apron B of any suitable kind or construction, and D is my improved galvanized sheet iron or steel one piece folded sap receptacle. The apron B is preferably of galvanized sheet steel, and is furnished with an upper concavely curved edge b adapted for insertion in the cut or incision a of the tree. At its ends the galvanized sheet steel apron B is provided with divergent upwardly projecting end flanges b^1 , each of which may be provided at its upper part with a downwardly extending inclined slot or notch b^2 to receive a wire or other hook C with which the receptacle D is or may be provided to removably support said vessel from the apron. The sheet metal apron B is composed of an iron or steel sheet B^1 having on both sides a galvanizing or spelter coating B^2 .

The one piece folded galvanized sheet steel receptacle D is preferably of a long, narrow, deep form, and consists of an integral flat rectangular bottom d , substantially upright, but slightly flaring sides d^1 and widely flaring ends d^2 and angle folds d^3 and locking lips d^4 for holding or clamping the angle folds snugly against the flaring ends of the vessel. The one piece folded sap receptacle D is composed of sheet steel or iron D^1 having upon both sides an extremely thin galvanizing or spelter coating D^2 , said coating being preferably in thickness or amount about one ounce to the square foot, although it may vary somewhat therefrom in extent. The galvanizing coating or spelter D^2 is applied to the sheet steel or blank in the flat and before it is formed or folded into shape, the extreme thinness or tenuity of the spelter coating enabling the required angle folds and bends to be formed without causing the

coating D^2 to flake or break off at the corners or folds. The receptacle D is provided with hooks or supporting devices C of any suitable form for engagement with the hooks or supporting devices b^2 on the apron B. The interengaging hooks or supporting devices on the apron and receptacle may be of any suitable kind or construction, and I have in the drawing simply illustrated one form of such hooks or supporting devices to enable my invention to be more fully understood.

The relative thickness of the galvanizing coating or spelter D^2 employed in my invention as compared with the ordinary spelter or galvanizing coating ordinarily found on galvanized sheet steel or iron, will be readily understood by those skilled in the art from Figs. 8 and 9 of the drawing. In Fig. 8, F represents an iron or steel sheet and F^1 the ordinary spelter or galvanizing coating thereon.

My spelter or galvanizing coating D^2 is a bendable, non-flakeable coating, and differs in this important respect, as well as in its extreme thinness from the spelter or galvanizing coatings heretofore found on galvanized iron or steel sheets.

I claim:—

1. The improvement in the art of manufacturing one piece folded sheet metal turpentine collecting cups, consisting in first providing steel sheets with a thin and bendable spelter or galvanizing coating, then cutting the sheet into cup blanks and then forming and folding the cup blank into a cup with integral bottom, sides, ends and angle folds turned flat against said ends, said forming and folding involving a twisting of the stock at the corners of the vessel and being done without flaking or peeling off said spelter coating, and the extreme thinness of such coating cooperating in the folding operation to accomplish this result, substantially as specified.

2. The process consisting in first galvanizing steel sheets with a thin coating of spelter of about one ounce to the square foot and then cutting cup blanks therefrom and forming and folding such blanks into cups or vessels, each having an integral bottom, sides, ends and angle folds turned flat against said ends, said forming and folding involving a twisting of the stock at the corners of the vessel and being done without flaking or peeling off said spelter coating, and the extreme thinness of such coating cooperating in the folding operation to accomplish this result, substantially as specified.

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