(No Model.)

# G. H. PERKINS.

## BUNG FOR CANS.

No. 355,025. Patented Dec. 28, 1886.

Fig. 1.

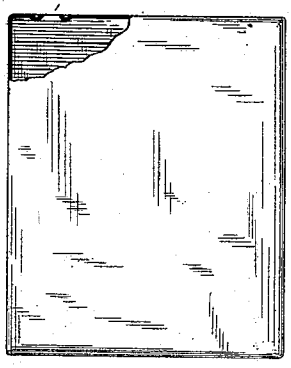



Fig. 2.

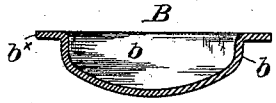



Fig. 3.

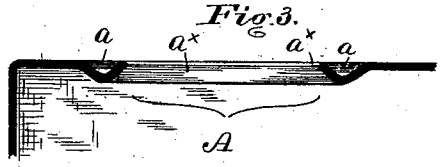



Fig. 8.

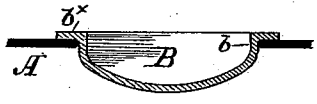



Fig. 9.

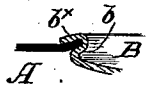



Fig. 4.

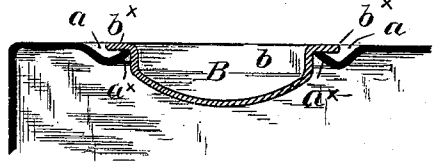



Fig. 5.

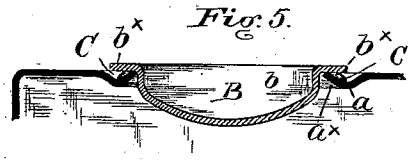



Fig. 6.

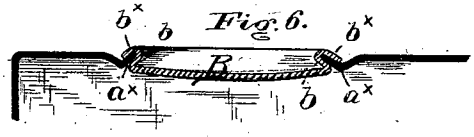
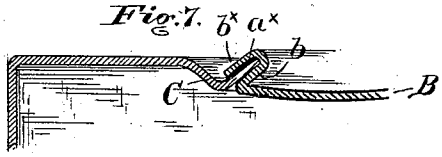



Fig. 7.

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# UNITED STATES PATENT OFFICE.

GEORGE H. PERKINS, OF PHILADELPHIA, PENNSYLVANIA.

## BUNG FOR CANS.

SPECIFICATION forming part of Letters Patent No. 355,025, dated December 28, 1886.

Application filed May 17, 1886. Serial No. 202,413. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. PERKINS, a citizen of the United States, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented an Improvement in Bungs for Cans, of which the following is a specification.

My invention relates to sheet-metal vessels in general, but is especially designed for employment in connection with quadrangular tinned-iron cans of the character employed for the storage and transportation of crude petroleum.

Heretofore in the packing of crude petroleum in cans of the foregoing character it has been a desideratum to avoid the employment of solder for sealing or securing the bung or cap employed to close the bung-hole or orifice through which the oil is poured into the can, the employment of the heated soldering-iron being dangerous. It has also been a desideratum to provide a bung which could be secured entirely from the outside of the can, and without the use of dies or tools requiring to be inserted within the can, and after the latter has been filled.

The object of my invention is the provision of means for tightly closing and sealing the orifice or bung-hole of a can without the employment of solder or other sealing material requiring heat in its application, and without the introduction of dies or other tools within the interior of a previously-filled can. This object I attain in a manner hereinafter set forth, the particular subject-matter which I claim as novel being hereinafter definitely specified.

In the accompanying drawings, which form a part of this specification, Figure 1 represents in side elevation, partially sectional, a quadrangular petroleum-can of the character usually employed for the transportation of crude petroleum. Figs. 2, 3, 4, 5, 6, and 7 are fragmentary central sectional details, to which specific reference is hereinafter made. Figs. 8 and 9 are similar views of a can the bung-hole of which is formed without a circumscribing bead or channel, in Fig. 8 the bung being shown in place, but not secured, while in Fig. 9 it is shown secured.

Similar letters of reference indicate corresponding parts.

Referring now to the first seven figures of the drawings, A, Figs. 1 and 3, represents a can bung-hole or orifice, preferably circular or oval in outline and circumscribed by a channel or bead, *a*, the convexity of which faces the interior of the can, and the inner member of which is an upwardly-angled lip, $a^{\times}$.

B, Fig. 2, is a cup-shaped cap or bung, which is struck up by dies or otherwise conveniently formed from sheet-lead or other inelastic, pliant, flexible, or extensible sheet metal. The cap as originally struck is formed with sides or walls *b*, of a predetermined depth, preferably correspondent with the breadth of the lip $a^{\times}$ of the bead of the bung-hole, and with a circumferentially-extending outwardly-projecting flange, $b^{\times}$. The exterior diameter of the cap or bung is such as to adapt it to be fitted snugly into the bung-hole, as shown in Fig. 4.

The can having been filled and the bung so as above formed dropped into the bung-hole, after the manner represented in Fig. 4, the flange of the cap is bent over into the channel or bead surrounding the bung-hole so as to lie flat against the upper surface of the lip, and the wall of the bung is forced circumferentially outward, so as to draw up or take the bulge out of the convex bottom of the bung and rest closely in contact with the under surface of the lip, so that the latter is upon both of its faces or surfaces embraced by the metal of the bung, which forms a circumferential fold embracing it, as clearly represented in Figs. 6 and 7. This manipulation of the metal of the bung may be accomplished by any means well known to sheet-metal workers, but is preferably effectuated by a tool which I and George E. Transom, of Philadelphia, have jointly devised, and which forms the subject-matter of an application for patent filed May 17, 1886, as Serial No. 202,398.

Where absolute hermetical tightness is desirable, a packing composed of any suitable material, but preferably of equal parts of common glue and sugar, or of sugar and glycerine, or of glycerine and glue, may, as shown in Fig. 5, be, in a plastic or liquid condition, applied to the channel or the upper surface of its lip before or after the bung is introduced, so that when the flange of the bung is crimped over the lip the said packing shall make an oil-

tight joint between their facing surfaces. Other materials may be employed to form the packing or cement, it being, however, essential that they should not be soluble in petroleum or its products. To open the can the bung is removed by being cut through or by being drawn out, which its malleable character permits.

The foregoing construction of the can with a bead surrounding its bung-hole is that to which I prefer to resort. It is manifest, however, that the bung-hole may, as shown in Fig. 8, have a flat lip or edge and no bead, the bung being adapted to be secured as in Fig. 9, and in securing it the edge of the bung-hole being slightly angled up, as shown. It is also obvious that the bottom of the bung, instead of being slightly convex, may be flat, it being, however, more economical and better to make it slightly convex, as represented and described.

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

1. As an article of manufacture, a sheet-metal can having a cup-shaped sheet-metal bung provided with an outwardly-projecting edge flange, which is bent down upon the lip of the can bung-hole, and also provided with side walls which are extended outwardly beneath the bung-hole lip in such manner that the latter is tightly embraced by a single fold of the metal of the bung, substantially as shown and described.

2. As an article of manufacture, a sheet-metal can having a cup-shaped sheet-metal bung provided with an outwardly-projecting edge flange which is bent down upon the lip of the can bung-hole, and also provided with side walls which are extended outwardly beneath the bung-hole lip in such manner that the latter is tightly embraced by a single fold of the metal of the bung, and also having a packing or sealing material interposed between the bung-flange and the lip or edge of the bung-hole, substantially as shown and described.

3. As an article of manufacture, a sheet-metal can having a bung-hole or orifice formed with a circumscribing bead or channel having an upwardly-inclined lip or edge, and also having a cup-shaped sheet-metal bung provided with an outwardly-projecting edge flange, which latter is bent down upon the upwardly-inclined lip of the bung-hole, and also provided with side walls which are extended outwardly beneath said inclined lip or edge and parallel therewith in such manner that the lip is tightly embraced by a single fold of the metal of the bung, substantially as shown and described.

4. As an article of manufacture, a sheet-metal bung for a can having a concave convex bottom, walls or side portions, and an outwardly-projecting flange, substantially as set forth.

In testimony whereof I have hereunto signed my name this 15th day of May, A. D. 1886.

GEORGE H. PERKINS.

In presence of—
J. BONSALL TAYLOR,
W. C. STRAWBRIDGE.

Corrections in Letters Patent No. 355,025.

It is hereby certified that in Letters Patent No. 355,025, granted December 28, 1886, upon the application of George H. Perkins, of Philadelphia, Pennsylvania, for an improvement in "Bungs for Cans," errors appear in the printed specification requiring correction as follows: On page 2, line 25, a comma should be inserted after the word "can;" on line 27 the comma after the word "flange" should be stricken out; in line 35 a comma should be inserted after the word "can," and in line 48 a comma should be inserted after the word "can;" and that the Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 11th day of January, A. D. 1887.

[SEAL.]

D. L. HAWKINS,
*Acting Secretary of the Interior.*

Countersigned:

R. B. VANCE,
*Acting Commissioner of Patents.*