

B. H. LARKIN.

VACUUM SEALED AND SEAMED KEY OPENING CAN.

(Application filed Aug. 8, 1900.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

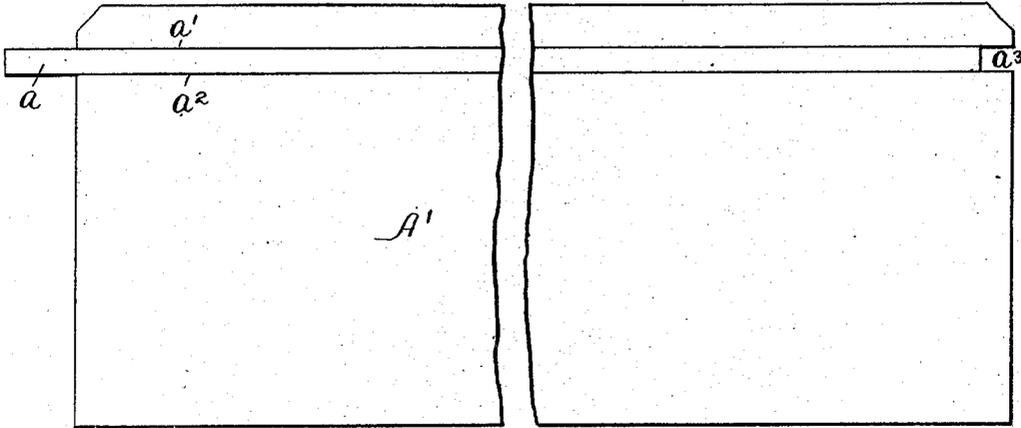


FIG. 2.

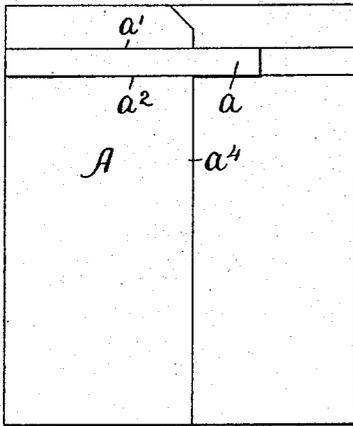


FIG. 3.

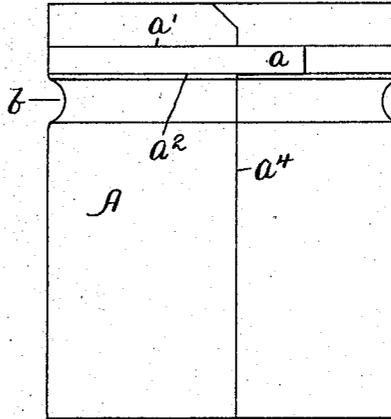


FIG. 4.

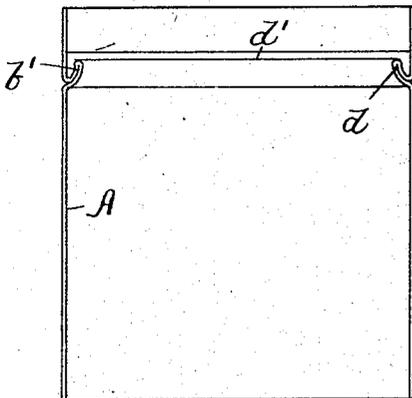
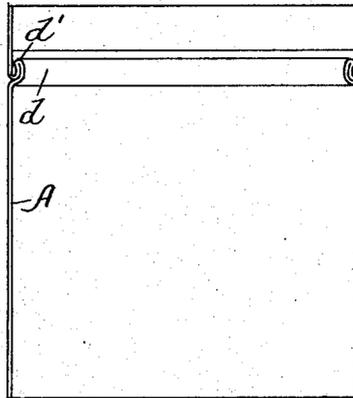


FIG. 5.



WITNESSES:

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A. W. Munday,

INVENTOR:
BARNARD H. LARKIN

BY *Munday, Curtis & Lovelock,*
HIS ATTORNEYS.

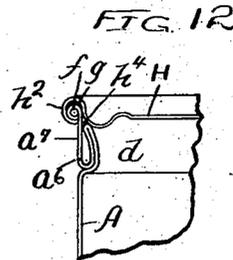
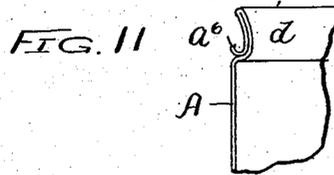
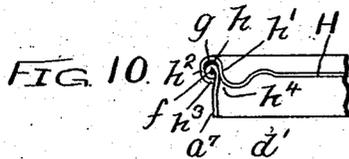
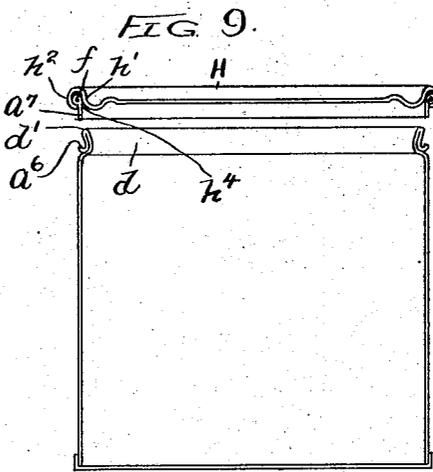
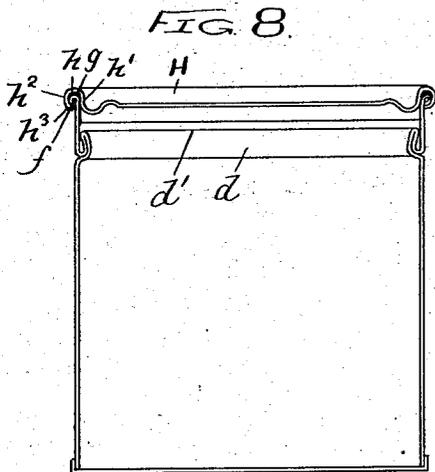
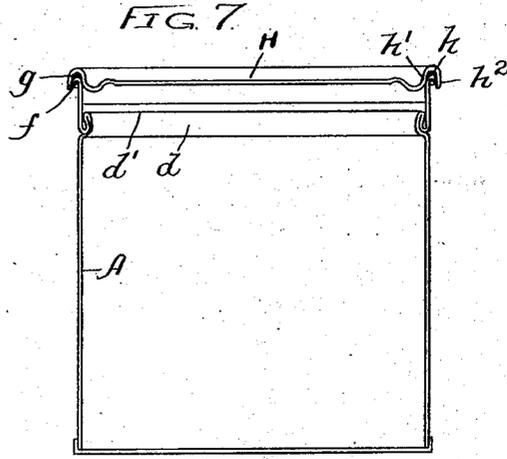
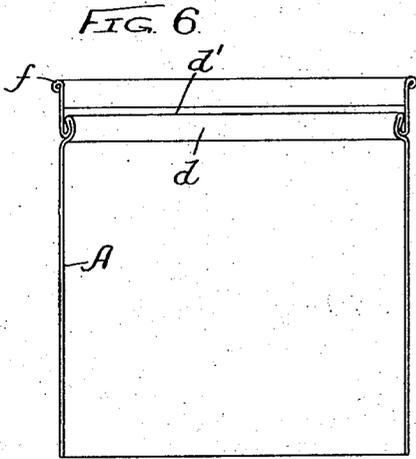
B. H. LARKIN.

VACUUM SEALED AND SEALED KEY OPENING CAN.

(Application filed Aug. 8, 1900.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:
Levi E. Curtis
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INVENTOR:
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 HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

BERNARD H. LARKIN, OF RIVER FOREST, ILLINOIS, ASSIGNOR TO THE
AUTOMATIC VACUUM CANNING COMPANY, OF CHICAGO, ILLINOIS, A
CORPORATION OF ILLINOIS.

VACUUM-SEALED AND SEAMED KEY-OPENING CAN.

SPECIFICATION forming part of Letters Patent No. 693,282, dated February 11, 1902.

Application filed August 8, 1900. Serial No. 26,203. (No model.)

To all whom it may concern:

Be it known that I, BERNARD H. LARKIN, a citizen of the United States, residing in River Forest, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Vacuum-Sealed and Seamed Key-Opening Cans, of which the following is a specification.

My invention relates to improvements in sheet-metal cans.

The object of my invention is to provide a sheet-metal can which is at once adapted to have its cover hermetically sealed to its body by a vacuum or atmospheric pressure seal and additionally secured thereto by a mechanical lock or seam and adapted to be opened by a tongued tearing-strip and to be again closed by a slip-cover, substantially air-tight, and which after being once opened by the removal of the tearing-strip will have a smooth upper edge at its mouth.

In the accompanying drawings, forming a part of this specification, and in which similar letters of reference indicate like parts throughout all the figures, I have illustrated a sheet-metal can embodying my invention and also its successive steps or stages of manufacture.

In said drawings, Figure 1 shows the blank of which the can-body is formed in the flat, with the tongued tearing-strip marked off by scores or weakened lines. Fig. 2 is a can-body formed from the blank; Fig. 3, the can-body provided with a wide internally-projecting bead; Fig. 4, the same in the next step with the walls of the bead compressed together to form an internal fold in the stock of the can-body. Fig. 5 shows the same in the next step after this internal fold has been stamped or pressed up against the cylindrical wall of the can-body. Fig. 6 shows the same in the next step with the upper edge of the can-body furnished with a turn or roll to form a smooth shoulder for the packing-ring to enable the cover to be sealed and secured to the can-body by the vacuum or atmospheric pressure seal. Fig. 7 shows the can with cover loosely in place thereon ready to have the air exhausted from the can and the

cover sealed or secured thereto by a vacuum or atmospheric pressure seal. Fig. 8 shows the can after the cover has been mechanically locked, seamed, or secured on the can-body. Fig. 9 shows the can after the same has been opened by winding the tongued tearing-strip around a key. Figs. 10 and 11 are enlarged detail views of the slip-cover and of the can having a smooth-edged mouth formed by removing the tearing-strip. Fig. 12 is a similar view showing the can again closed by the slip-cover.

In the drawings, A represents a can-body, the same being formed of a rectangular blank A', which in the flat, as illustrated in Fig. 1, is provided with a tongued tearing-strip a, marked off by scored or weakened lines a' a² and with a notch a³ at the lapped side seam a⁴. After the can-body has been formed into cylindrical shape, as illustrated in Fig. 2, and its side seam soldered a wide internally-projecting bead b is formed in the can-body with its upper edge just below the lower scored or weakened line a² of the tongued tearing-strip. The next step is to stamp or compress the walls b' of the bead b together, as illustrated in Fig. 4, thus forming an internal fold d in the stock or wall of the can-body itself. After this has been done the next step is to turn, stamp, or compress this internal fold d upwardly and outwardly firmly against the wall of the can-body, thus giving it a curved shape, so that the upper portion or edge d' of this now upright curved or semitubular fold d will fit snug against and support, brace, and stiffen the can-body wall at the tearing-strip portion a thereof, as illustrated in Fig. 5. The upper edge of the can-body is next provided with a flange, turn, or roll f, as illustrated in Fig. 6, to form a smooth shoulder or bearing for the packing-ring g and also as a means for mechanically uniting, seaming, or locking the cover H to the can-body. The cover H has an annular groove or channel h, formed by and between its inner flange h' and its outer flange h², to receive the packing-ring g. After the cover H has been loosely put on the can, as illustrated in Fig. 7, the can being filled and the packing-ring g in place, the can is placed

in the receiver of an air-pump and the air exhausted therefrom and from the can, and then the atmospheric pressure being suddenly restored to the receiver the cover H is hermetically sealed and secured to the can-body by a vacuum or atmospheric pressure seal. As this step or operation makes no change in the shape of the can or its cover, excepting, of course, a slight collapsing of the bottom and the cover of the can, I have not in the drawings repeated Fig. 7, and Fig. 7 may consequently be considered as also representing the condition of the can after the vacuum-sealing operation. The next step is to mechanically lock, seam, crimp, or secure the cover on and to the can-body. This may be most conveniently and cheaply done by simply turning or crimping the lower edge h^3 of the outer flange h^2 of the cover H under the shoulder formed by the flange, turn, or roll f at the upper edge of the can-body, as illustrated in Fig. 8.

To open the can, the tongued tearing-strip a is wound around a key in the usual manner, thus leaving the upright fold d with its smooth upper edge or surface d' projecting above the lower torn edge a^6 , formed by the removal of the tearing-strip, and thus giving the can-body a perfectly-smooth upper edge or mouth after it has been opened and also leaving the portion a^7 of the original can-body above the upper score a' firmly attached to the can-cover H, and thus forming a slip-cover flange therefor, and the slip-cover flange a^7 , being a portion of the original can-body, is of course a tight and accurate fit for the upright fold d , which, as before stated, was firmly stamped or pressed outward against the can-body. As the upright fold d has a slight outward inclination and a smooth beveled upper edge produced by the fold in the stock and as the slip-cover flange a^7 has a slight inward inclination from its lower edge to its point of union with the cover H produced by the action of the crimping-tools in turning the flange h^2 inward, the slip-cover is given a very tight wedging fit on the can-body, so that the can may be closed practically air-tight after it has been once opened. The tight fit of the slip-cover on the can-body is further produced or aided by the wedging annular crevice h^4 , formed between the cover H and its slip-cover flange a^7 , as will be readily understood from Figs. 9, 10, 11, and 12.

As the internal upright fold d has a curved or semitubular form in cross-section, it gives great strength and stiffness to the mouth of the can and affords a firm support to the tear-

ing-strip, so that the tearing-strip will separate easily and uniformly and with certainty when it is wound upon the key in opening the can.

I claim—

1. The combined slip-cover, seaming and vacuum-sealing key-opening can, consisting in a can-body A furnished with a tongued tearing-strip a , and provided with an internal upright fold d in the stock of the can-body, said fold projecting above the lower score of the tearing-strip, and having a smooth upper edge, a cover H having inner and outer flanges h^1 h^2 , and annular channel h , furnished with a packing-ring g , said can-body having at its upper edge a flange, turn or roll mechanically secured or united to said cover, said cover being also sealed and secured to said can-body by a vacuum or atmospheric pressure seal, and said can-body having a slip-cover-flange portion a^7 projecting above the upper score of the tearing-strip, and adapted to tightly fit, when the tearing-strip is removed, said upright fold d of the can-body, substantially as specified.

2. The combined vacuum-sealed and mechanically sealed or seamed key-opening can consisting in a can-body provided with an outwardly-turned seaming flange or roll at its upper end forming also a smooth seat or bearing for a packing and provided with a tongued tearing-strip below said seaming-flange, a cover having inner and outer flanges and a packing between said flanges and sealed and secured to said can-body by a vacuum or atmospheric seal, said cover having its outer flange crimped or turned under said external seaming flange or roll on the can-body and mechanically sealing or seaming the cover on the can, substantially as specified.

3. The combination in a vacuum-sealed and mechanically sealed or seamed can, of a can-body having an external seaming flange or roll at its upper end and forming also a smooth seat or bearing for a packing, of a cover having a packing and a packing seat or channel and sealed and secured to said can-body by a vacuum or atmospheric pressure seal compressing and holding compressed the packing and provided with an external downturned seaming-flange having its lower portion crimped or turned under the said seaming flange or roll on the can-body, substantially as specified.

BERNARD H. LARKIN.

Witnesses:

EDMUND ADCOCK,
H. M. MUNDAY.