

(No Model.)

F. WESTERBECK.
HERMETIC SEAL FOR CANS.

No. 515,268.

Patented Feb. 20, 1894.

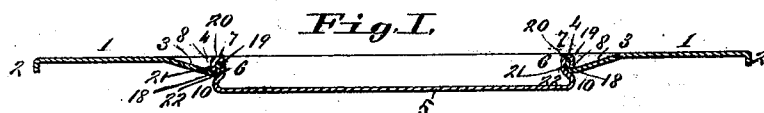


Fig. II.

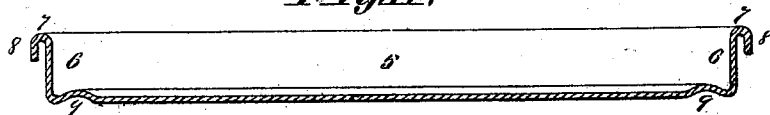


Fig. III.

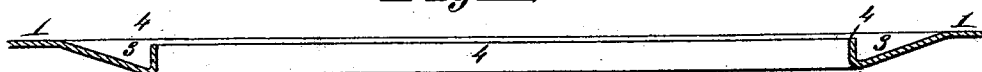
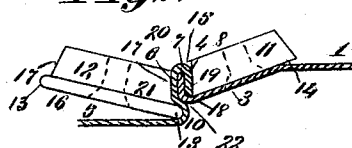


Fig. IV.



Fig. V.



Attest:

Benj^r. A. Knight.
Albert W. Oberole

Inventor:

Frederick Westerbeck.
By Knight Bros.
attys.

UNITED STATES PATENT OFFICE.

FREDERICK WESTERBECK, OF ST. LOUIS, MISSOURI.

HERMETIC SEAL FOR CANS.

SPECIFICATION forming part of Letters Patent No. 515,268, dated February 20, 1894.

Application filed March 3, 1893. Serial No. 464,611. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK WESTERBECK, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Hermetic Seals for Cans, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to the manufacture of multiple flange joints for hermetically sealing tin cans, in which said multiple joints are shaped and compactly pressed together by the rotary movement and conjoint pressure of two inclined coadjutory rollers, that effect a tight coupling joint of the lid to the can; thereby dispensing with the necessity of the intervention of rubber or the application of solder or wax to effect a hermetic seal, and the invention consists in features of novelty hereinafter fully described and pointed out in the claims.

Figure I is a vertical section and shows the hermetic direct tight pressure seal of the lid to the rim of the can. Fig. II is an enlarged, vertical section of the lid, and shows an upwardly projecting roll expansion bead adjacent to the base turn of its rim that allows latitude for the lock roll peripheral expansion of the lid, beneath the rim of the cover. Fig. III is an enlarged, detail vertical section of the top of the can minus its lid. Fig. IV is an enlarged, detail of the top of the can and lid in position, before the application of the hermetically sealing rollers; and Fig. V is an enlarged, detail section of said top and lid, in their hermetically sealed position, and shows the rolls in the act of hermetically sealing the joint, the expansion curve of the lid shown in Fig. II giving latitude for the peripheral lock expansion of the lid beneath the rim of the can, by means of the flange roller.

Referring to the drawings:—1 represents the top of the can, 2 is its peripheral pendent joint flange, 3 the bevel flange that inclines toward its lid, joint, and 4 is the vertical upturned circumferential flange or lip that surrounds the mouth of said top.

5 represents the lid of the can, 6 is its vertical upturned peripheral rim flange, 7 is

the surmounting head curve of said flange, which turns around outward and 8 is the vertical outward return flange or lip of said lid.

9 represents an upward circumferential expansion bead adjacent to and inside the peripheral rim-flange 6. The said expansion bead is stamped in said lid for the purpose of effecting a latitudinal means of extension of the lid plate, to increase the extensile capacity of the lid, to effect the under bent curve lip projection 10 at the peripheral base of the lid, that by means of the flange rollers thus effects a lock lip flange of said lid directly beneath the vertical mouth rim or lip 4 at the top of the can.

To effect the direct hermetic sealing of the can lid joint, without the use of solder, wax, or any other hermetic cement, I use my angle hung roll 11 and my coadjutory angle hung roll 12 with its underhung extensile flange lip 13. The said roll 11 revolves on a suitable stationary journal bearing, and works on an incline that adjusts the flat base 14 of said roll on line with the top surface of the bevel flange 3 of the can-top, and presents the angle inclined periphery 15 of the roll at an acute angle to that of its flat base 14, which places it at a right angle with the flat top surface of the lid 5. The pressure roll 12 is angle hung by its journal mounting on a pendent pivotally swung journal rod, its flat base surface 16 being located and working on an equivalent contrariwise incline to that of the roll 11, and its peripheral inclined edge face 17 presenting at an acute angle to that of its flat face 16, and at a right angle with the lid top 5. The extensile underhung curve lip 13 of said pressure pivoted hung roll, is forced while rotating, against the base of the upturned peripheral rim flange 6 of the lid, and thus acts as a former to force the same peripherally outward to constitute the extensile curve lip projection 10, that both forms the lock to the lid attachment and holds the combination flanges of said lid and can-top to their hermetic seal into which the twin coadjutory rolls 11 and 12 have tightly compressed them. Now it will be seen that the aforesaid coadjutory can-top and lid joint flanges and flange lock 4, 6, 8 and 10 are of exact counter-

part construction so as to exactly fit and tightly joint both the ends and parallel sides of said joint flanges and by the conjoint pressure of the rolls 11 and 12 as said rolls are quickly revolved a tight hermetic direct joint seal is formed, to avoid the use of solder, wax or other cement. It will also be seen that to effect the said direct hermetic joint, there is effected a five-fold tight contact joint, at the following named points: at 18, where the lower, pendent edge of the outward return flange 8 of the lid is forced into tight engagement with the foot of the incline of the bevel flange 3; at 19, where said pendent flange 8 is forced by the rolls into tight contact with the parallel upturned flange 4 of the can top; at 20, where the top of the flange 4 of the can top tightly presses against the surmounting head curve 7, that couples together the parallel flanges 8 and 6 of the lid, at 21, in the tight contact of said flange 6 of the lid to the intervening flange 4 of the can top; and lastly at 22, where the underhung lock lip 10 by the rotary pressure force of the extensile projecting rim 13 of the roll 12, is formed and forced into tight locking contact with the upward foot turn of the flange 4 of the can top, thus making the fifth member of the five-fold direct hermetic joint for the tight sealing of the lids of cans without the intervention of any cementing agent.

The use of the upper expansion bead 9 adjacent to the foot of the upturned flange 6 of the lid, which is stamped on the same in its original construction, is apparent, as by its means latitude is provided for the extensile projection of the underhung lock lip 10, when

forced outward by the projecting flange 13 of the pressure roll, which thus utilizes and takes up the said expansion bead 9, straightening out the same in the bottom of said lid while it utilizes its said expansive capacity in the formation of said projected lock lip; to aid in the formation and lock closure of my direct hermetic seal for can-lids.

I claim as my invention—

1. The method herein described for sealing cans which consists in taking a top having a vertical upturned circumferential flange, placing thereon a lid formed with an expansion bead projecting upwardly near its periphery, a vertical upturned flange, a head curve and a vertical downturned flange and straightening out the bead by pressing the lower portion of the vertical upturned flange into an underbent curved lip to a position directly beneath the vertical upturned flange of the top so as to form a tight joint thereunder; substantially as described.

2. The combination of the top formed with an inner vertical upturned circumferential flange, and the lid formed with a vertical upturned flange, a head curve, and vertical downturned flange inclosing the vertical upturned flange of the top, and the underbent curved lip located directly beneath the vertical upturned flange of the top so as to form a tight joint thereunder; substantially as described.

FREDERICK WESTERBECK.

In presence of—

BENJN. A. KNIGHT,
ALBERT M. EBERSOLE.