L. R. STEEL.

HEAT INSULATED CAN.

APPLICATION FILED MAR. 4, 1911.

1,048,368.

Patented Dec. 24, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

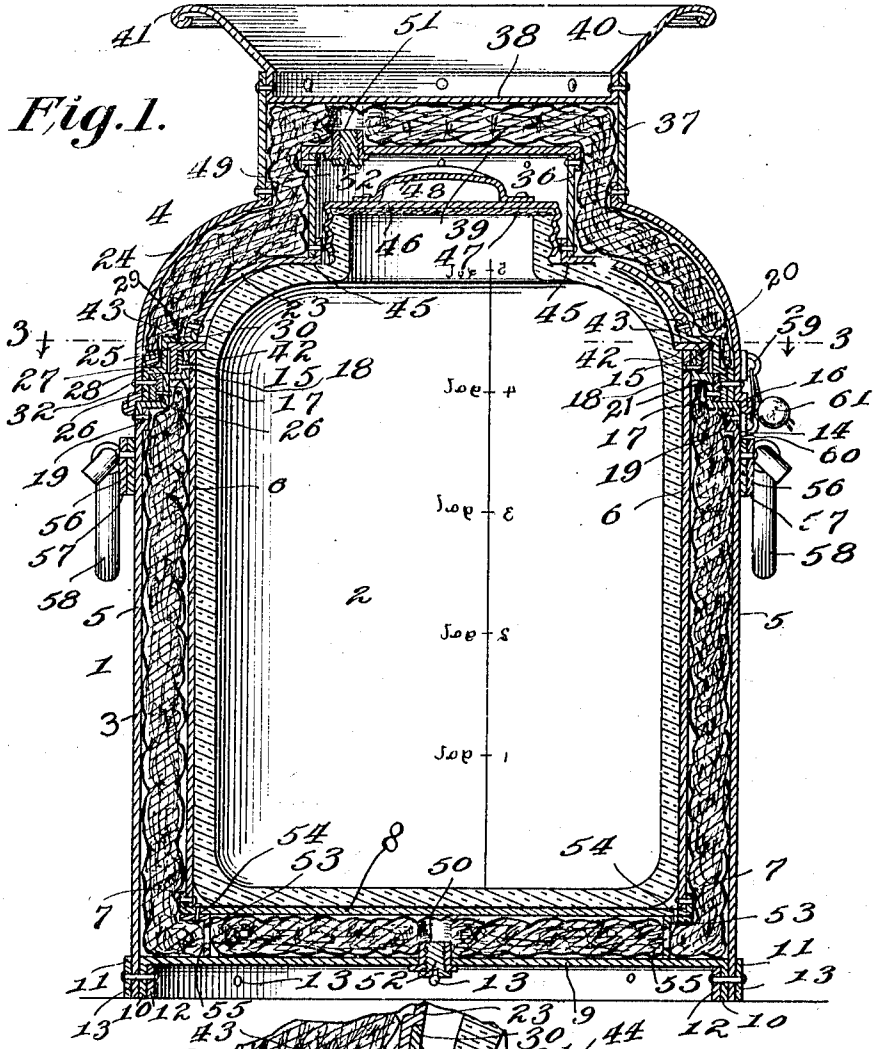

Fig. 2.

Witnesses

Inventor

Leonard R. Steel

By Victor J. Evans

Attorney

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2 SHEETS—SHEET 2.

Fig. 3.

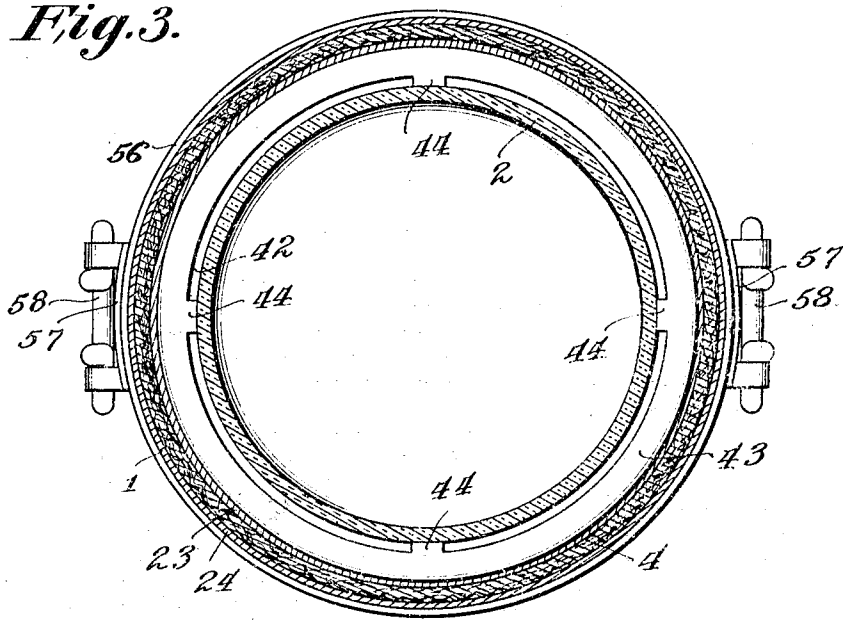
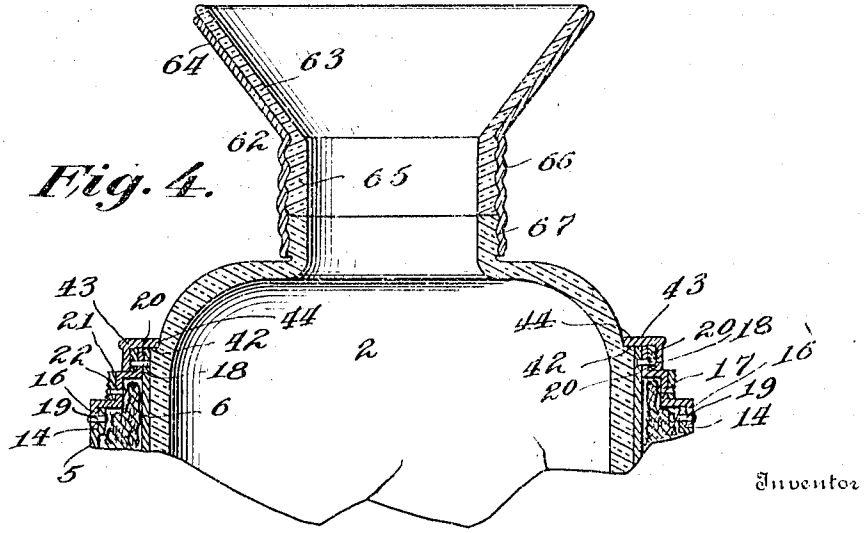


Fig. 4.



Witnesses

W. A. Lybrand

James A. Keene

Inventor

Leonard R. Steel

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

LEONARD R. STEEL, OF CLEVELAND, OHIO.

HEAT-INSULATED CAN.

1,048,368. Specification of Letters Patent. Patented Dec. 24, 1912.

Application filed March 4, 1911. Serial No. 612,209.

To all whom it may concern:

Be it known that I, LEONARD R. STEEL, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Heat-Insulated Cans, of which the following is a specification.

This invention relates to insulated milk cans.

An object of the invention is to provide an improved construction of can of this character including an outer double walled jacket filled with insulating material and an inner vessel of glass, porcelain, china, or other non-corrosive material, the insulating jacket embodying separable sections so arranged with respect to each other and with the inner vessel as to insure against movement of the inner vessel longitudinally in the jacket.

In the drawings, forming a portion of this specification and in which like numerals of reference indicate similar parts in the several views:—Figure 1 is a vertical section through my improved can. Fig. 2 is an enlarged view through a portion of the same. Fig. 3 is a horizontal section on line 3—3 of Fig. 1. Fig. 4 is a view similar to Fig. 1 showing the funnel attachment applied to the neck of the inner vessel.

The can comprises an outer insulating jacket 1 and an inner vessel 2, which latter is preferably constructed of glass, porcelain, china, or other non-corrosive material. The insulating jacket includes a lower section 3 and an upper section 4 which are detachably connected with each other as will be hereinafter fully explained. The lower section embodies an outer wall 5 and an inner wall 6. The bottom of the inner wall is disposed above the plane of the bottom of the outer wall and embracing the same exteriorly is the flange 7 of an inner bottom member 8. An outer bottom member 9 is located beneath the bottom 8 and in spaced relation thereto and it is formed with a depending outer flange 10 which is embraced by the lower end of the wall 5. The lower end of the wall 5 is embraced by an exterior clamping band 11. The flange 10 embraces an inner clamping band 12. The bands 11 and 12 and the flange 10 are secured to the lower end of the wall 5 by rivets 13. The upper end of the outer wall 5 is disposed below the plane of the upper end of the wall 6, and as illustrated, it is offset inwardly so as to form a peripheral recess 14. A substantially stepped member connects the walls 5 and 6 with each other. This member is provided with the upper and lower vertical flanges 15 and 16 and an intermediate vertical flange 17. The flange 15 is secured to the wall 6, at 18. The lower flange 16 extends into the recess 14 and is secured to the offset portion of the wall 5, by rivets 19. An exteriorly threaded ring 20 embraces the flange 15 and is secured thereto by the rivets 18. A similar exteriorly threaded ring 21 is secured by rivets 22 to the flange 17. In addition to the rivets 18 and 19 which secures the stepped connecting member with the walls 5 and 6, solder may be used so as to form a perfect air tight joint.

The top section 4 of the insulating jacket includes an inner wall 23 and an outer wall 24. These walls are connected with each other by the member 25. This member is stepped and is substantially of identical configuration with the hereinbefore described stepped connecting member, and as shown, it is provided with the vertical flanges 26 and 27 and the horizontal flanges 28 and 29. An attaching flange 30 is formed on the member 25 at the upper end thereof and secured by rivets 31 to the lower edge of the wall 23. The vertical flange 26 of the member is secured by rivets 32 to the wall 24. This wall 24 is formed to provide a horizontal shoulder 33 which is designed to rest upon the lower horizontal wall 34 of the stepped connecting member hereinbefore described as connecting the walls 5 and 6 with each other. The flange 26 has secured thereto an interiorly threaded ring 35 which is designed for attachment to the ring 21 so as to securely hold the sections 4 and 5 closed against each other. The wall 23 has secured thereto a vertical collar 36 which is spaced throughout from a similar collar 37 which is secured to the wall 24. The collar 37 is closed at its top by a cover 38 which is spaced from a similar cover 39 which closes the collar 36 at its upper end. The cover 38 is provided with an outwardly flared flange 40 having a circumferential reinforcing bead 41.

The inner vessel 2 is provided adjacent to its upper end with an external shoulder 42. A retaining device 43 is interiorly threaded for adjustment on the ring 20. This device is provided with a series of radial fingers 44 which are designed to engage the shoulder

42 of the liner so as to hold the liner against any possible movement longitudinally in the insulating jacket. In addition to this means the liner is held against longitudinal movement in the jacket through the contacting surface 45 which is formed at the upper end of the wall 23. This surface bears against the top or breast of the inner vessel, as shown in Fig. 1.

The neck of the inner vessel is exteriorly screw-threaded and detachably fitted thereto is a cover 46. A paper disk 47 is located on the underside of the cover which is held against the neck of the inner vessel when the cover is in its closed position. This cover is provided with a suitable handle 48. The cover plate 39 of the collar 36 is spaced from the cover 46 of the inner vessel so as to form a dead air space 49 therebetween. An insulating material of mineral wool, wood, asbestos, or any other suitable non-heat conducting body is placed in the space between the walls 5 and 6 and between the walls 23 and 24 and also between the closure members 38 and 39 and between the bottom members 8 and 9. The bottom 9 is provided with an exhaust opening 50 by means of which the air can be exhausted from the insulating material and from the space between the walls 5 and 6 and the bottom members 8 and 9. A similar opening 51 is formed in the closure member 39 so that the air may be exhausted from the space between the walls 23 and 24 and the members 38 and 39. The openings 50 and 51 are sealed by the plugs 52 after the air has been exhausted. A supporting member 53 is secured at 54 to the bottom member 8. This member 53 contacts with the bottom 9 and securely braces the member 8. The member 53 is suitably perforated at 55 so as to permit the air to be exhausted from the space between the respective walls of the jacket.

A reinforcing band 56 embraces the wall 5 near the upper end thereof. This band has attaching plates 57 secured thereto and supported by the plates are handles 58. Eyes 59 and 60 are secured to the sections of the insulating jacket and they are connected with each other by a seal 61. It will be understood that this seal is applied after the inner vessel is placed in the jacket for shipment.

To facilitate filling the inner vessel in a sanitary manner or to enable one to pour out its contents without spilling the same, I provide the funnel attachment 62. This attachment includes an inner glass funnel 63 and an outer metal funnel 64. The inner funnel is provided with an exteriorly threaded neck 65 to which the interiorly threaded neck 66 of the outer funnel 64 is engaged. The length of the neck 66 exceeds that of the neck 65 so that a threaded portion 67 of the neck 66 extends below the plane of the lower end of the neck 65. This portion 67 may be engaged with the exteriorly threaded neck of the inner vessel, as shown in Fig. 4. From this construction it will be seen that the contents of the inner vessel can be poured without the contents coming in contact with any metal parts, it being an essential object in a can of the character described for the reason that it has been found from experience that germs or foreign matter will adhere to metal parts and are frequently transferred from one vessel to the other in the pouring operation. The insulating material which is arranged between the walls of the insulating jacket is provided solely for the purpose of preventing the rapid absorption of heat should the outer wall of the jacket become punctured in transit.

I claim:—

1. In a heat insulated can, an insulating jacket including inner and outer walls, the inner walls being extended above the plane of the outer walls, a stepped member connecting the inner and outer walls together at their upper ends, an inner vessel embraced by the inner walls and having an external shoulder occupying substantially the same general plane with the upper end of the said inner walls, adjustable means on the stepped member having portions extending within the inner walls and engaging the shoulder of the inner vessel, the said connecting member spacing the inner and outer walls from each other, a bottom for the outer walls, a bottom for the inner walls, means interposed between the first and second named bottoms for spacing them from each other, and a closure section adjustable on the stepped member and having inner and outer walls and provided with a horizontal flange which engages the inner vessel engaging means when said closure section is closed upon the said stepped member.

2. In a heat insulated can, an insulating jacket including inner and outer walls, the inner walls being extended above the plane of the outer walls, a stepped member connecting the inner and outer walls together at their upper ends, an inner vessel embraced by the inner walls and having an external shoulder occupying substantially the same general plane with the upper end of the said inner walls, adjustable means on the stepped member having portions extending within the inner walls and engaging the shoulder of the inner vessel, the said stepped member spacing the inner and outer walls from each other, a bottom for the outer walls, a bottom for the inner walls, means interposed between the first and second named bottoms for spacing them from each other, and a closure section adjustable on the stepped member and having inner and

outer insulated walls provided with a horizontal flange which engages the inner vessel engaging means when said closure section is closed upon the said stepped member, so as to hold the same against rotation, and means for securing the said closure section to the said jacket.

3. A heat insulated can comprising a double walled insulating jacket, an inner vessel removably fitted in the jacket and having a breast portion extending thereabove, a neck on the breast of the inner vessel, a closure removably fitted to the neck, a closure removably fitted to the jacket and having a portion spaced from the closure of the inner vessel so as to define an intervening dead air space therebetween, means on the inner vessel, and means on the jacket, the last means being adapted to engage against the first means so as to hold the inner vessel against longitudinal movement in the jacket and to prevent the displacement of the inner vessel from the jacket when the latter is canted when the said cover section is removed.

In testimony whereof I affix my signature in presence of two witnesses.

LEONARD R. STEEL.

Witnesses:
JOHN D. LLOYD,
ROBT. J. STEEL.