

B. H. KANNENBERG.
 CLOSURE FOR HERMETICALLY SEALED FOOD PRESERVING CANS.
 APPLICATION FILED MAY 15, 1908.

1,039,753.

Patented Oct. 1, 1912.

Fig. 1

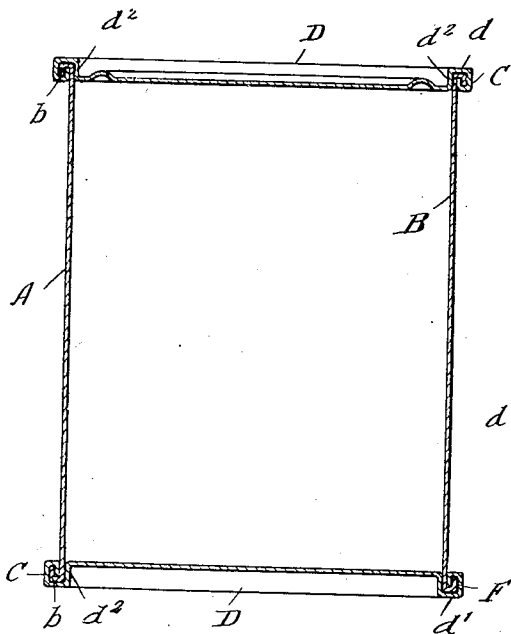


Fig. 2

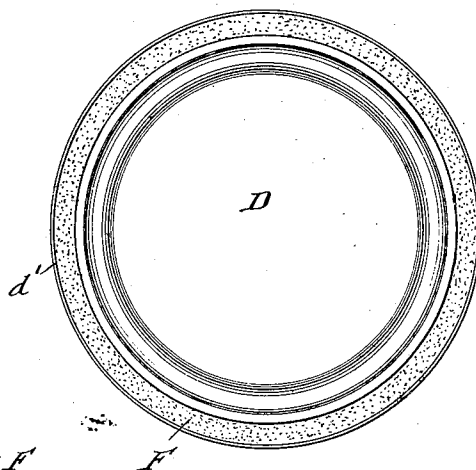


Fig. 3



Fig. 4

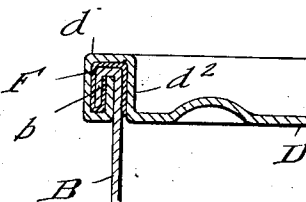


Fig. 5

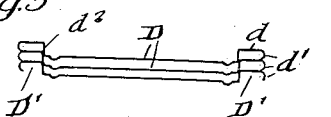


Fig. 6

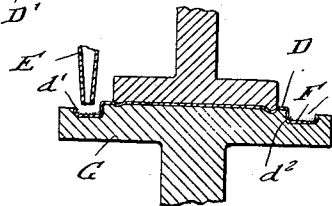
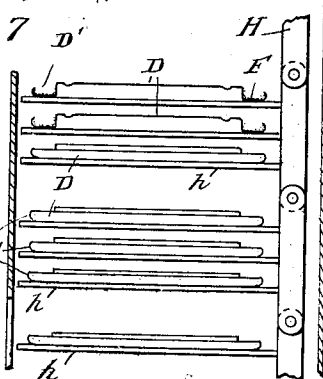


Fig. 7



Witnesses:

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UNITED STATES PATENT OFFICE.

BALDWIN H. KANNENBERG, OF MAYWOOD, ILLINOIS, ASSIGNOR TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CLOSURE FOR HERMETICALLY-SEALED FOOD-PRESERVING CANS.

1,039,753.

Specification of Letters Patent.

Patented Oct. 1, 1912.

Application filed May 15, 1908. Serial No. 432,986.

To all whom it may concern:

Be it known that I, BALDWIN H. KANNENBERG, a citizen of the United States, residing in Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Closures for Hermetically-Sealed Food-Preserving Cans, of which the following is a specification.

My invention relates to can closures, and more particularly to closures uniting the heads or bottoms and tops with the bodies of preserving cans by hermetically tight seams, without the use of solder. Heretofore great practical difficulty has been experienced in making the folded or double seams which unite the heads to the bodies of food preserving cans hermetically tight, and much expensive experimenting has been done, and many different kinds of gaskets or packing have been employed between the seaming flanges of the heads and bodies in the endeavor to procure a safe and reliable hermetically tight closure, without necessitating the use of a packing or gasket which will impart disagreeable or injurious taste or flavors to the food products in the can, or be of too expensive material or too difficult and expensive of application for practical use, and which will not deteriorate by lapse of time, and which will not be injured in shipment if applied at the factory where the cans are manufactured.

The packing heretofore most generally in use, and which comes nearer to meeting all the requirements or conditions, is a packing composed of rubber cement or like composition, as set forth, for example, in the Max Ams Patent No. 570,591. But this packing necessarily imparts some taste or flavor to the food contents, and being composed largely of rubber so deteriorates after a lapse of a few months, that the cans are liable to become leaky and the food contents ferment or be destroyed. Another kind of packing now quite largely used consists in an annulus of thin paper cut from a paper blank just the size to fit within the seaming flange of the can head or cover and furnished on one face with adherent material to cause it to stick to the flange of the tin plate cover while it is being applied to the can body. But as paper will not stick with any reliability or permanency to a tinned surface, it has been found necessary in practical operation to apply these paper

ring packings to the seaming flange of the cover at the cannery or packing house, and this requires a large amount of additional help at the cannery in the rush work of the packing season. And, in addition to this, the paper packing rings being very thin and flimsy, can only be practically applied by hand, thus making the work of their application slow and expensive. The paper ring gasket, however, has the advantage of being tasteless and of not deteriorating by lapse of time.

The object of my invention is to provide an improved construction of packing which will be firmly adherent to the seaming flange of the cover, which will be inexpensive, which may be rapidly and cheaply applied at the can factory where the cans are manufactured, which will not be liable to injury or displacement during handling or shipment, which will be absolutely sanitary, tasteless and odorless, which will uniformly produce a tight closure in cooperation with the seaming flange of the head and body, which will not deteriorate by lapse of time, and which also will cover the inner surface of the curled edge of the seaming flange on the cover.

My invention consists in the means I employ to practically accomplish this object or result; that is to say it consists in a can closure comprising a seaming flange on the can body and a seaming flange on the can head or cover interfolded into a double seam, the seaming flange of the cover having applied to its inner surface a firmly adherent and finely ground paper pulp film or coating applied in a liquid state and subsequently dried. The paper pulp is preferably made of rice paper, or of pulp such as is used in making rice paper; but it is preferably ground somewhat more finely than is ordinarily done in the manufacture of paper, so that the pulp will flow as freely and form when dried a continuous film or coating of uniform thickness over the entire interior surface of the head or cover. The paper pulp preferably contains an admixture of resin and glycerin to give a greater body to the dried film or coating, and to render it more firmly adherent to the tinned surface of the seaming flange. Alcohol, water or other suitable solvent, capable of being evaporated or dried out, may be employed to give the paper pulp the required

fluidity or consistency to enable it to be flowed upon the seaming flange of the cover, or applied thereto after the manner in which a paste or paint is applied to other surfaces.

- 5 In practising the invention the inverted can head or cover is preferably placed on a rotating chuck beneath a nozzle through which the paper pulp flows into the annular channel formed by the inner shoulder and the outer curled edge of the seaming flange. This channel is preferably substantially filled with the liquid paper pulp, and the head or cover with its channel thus filled is passed in a horizontal position into a drier 10 and the alcohol, water or other liquid solvent dried out from the pulp, thus leaving the seaming flange of the cover coated on its inner surface with a thin, dry, hard, slightly elastic and firmly adherent flowed paper 15 pulp coating covering not only the horizontal inner surface of the seaming flange but also the inner surface of its curled edge.

- In the accompanying drawing, forming a part of this specification, Figure 1 is a central vertical section of a sheet metal preserving can of tin plate having a closure for its 25 heads or bottom and cover embodying my invention; Fig. 2 is an inverted plan view of the cover before it is seamed to the body; Fig. 3 is a sectional view of the head or cover; Fig. 4 is an enlarged detail sectional view of the double seam closure; Fig. 5 is a sectional view showing a number of the covers stacked or nested together for ship- 30 ment; Fig. 6 is a sectional view of the cover illustrating the method of applying the liquid paper pulp thereto; and Fig. 7 is a sectional view illustrating the drying step or operation.

- 40 In the drawing A represents the sheet metal preserving can, represented as comprising a tin plate body B having a seaming flange b , and upper and lower heads D having seaming flanges d interfolded into a double seam C with the seaming flange of the body. The seaming flange d of the head D has a curled or curved outer edge d^1 which forms a packing channel D^1 with the shoulder d^2 of the head D which fits inside the 50 end of the can body. The seaming flange d of the head D has on its inner or under surface a firmly adherent, hard, dry, slightly elastic film or coating of paper pulp F, said coating extending over the inner surface of the curled edge d^1 of the cover flange, as 55 well as continuously over the under surface of said cover flange. The paper pulp coating or packing F is flowed into the channel D^1 of the head seaming flange while said head is rotated under a nozzle E through which the liquid paper pulp is discharged. The head D during this operation is preferably turned by a rotating chuck G upon which it is supported. The channel D^1 is 60 preferably substantially filled with the liq-

uid paper pulp, and then the head D with its channel D^1 thus filled with liquid paper pulp is passed onto a carrier H having shelves h , and conveyed through a drying chamber until the alcohol, water or other solvent employed in the paper pulp to render it fluid, is driven off, thus leaving the cover D with a hard, dry, slightly elastic paper pulp coating or film F of uniform thickness extending continuously over the entire inner surface of the seaming flange, including the curled edge d^1 . The coating or packing F thus produced is indestructible or not subjected to deterioration by lapse of time, and is also tasteless and odorless and absolutely sanitary and free from any injurious quality or characteristic while at the same time in coöperation with the seaming flanges of the head and body it enables hermetically tight seams or closures to be produced with certainty and uniformity. 70 75 80 85

The curled edge d^1 of the seaming flange of the cover not only serves as a guard to protect the coating or packing F after it is applied, to handling and shipment of the heads when they are stacked or nested together, as it prevents the adjacent cover from touching or coming in contact with the packing, but it also serves to form the outer wall of the channel D^1 to confine the liquid paper pulp packing in place when it is first applied and during the subsequent drying step of the process. 90 95

The addition of resin, or other adhesive substance in the paper pulp, to increase the body of the packing F and render it more firmly adherent when dried, serves also to increase its strength, and is preferably applied in the melted form and thoroughly mixed with the liquid paper pulp in the proportion of about one ounce of the resin and six ounces of the ground paper pulp, to which is added and thoroughly mixed therewith six ounces of glycerin and eight and one-half ounces of alcohol. The paper pulp before being mixed with the glycerin, resin and alcohol is very finely ground, this being preferably done by running it through a paint grinder, or other like fine pulverizing apparatus, at least twice. The addition of the glycerin to the ground paper pulp and resin renders the dried and completed packing softer and more elastic and prevents cracking or brittleness, and adds to its strength. 100 105 110 115 120

My paper pulp packing is odorless, tasteless, and free from injurious qualities and thus produces a perfectly sanitary closure.

I claim:

1. As an article of manufacture, a can head having its curled seaming flange provided on its inner face with a firmly adherent, thin, hard, dry, durable, slightly elastic, flowed, paper pulp coating, the inner face of said coating conforming to the adjacent face of 125 130

the cover flange and hermetically united thereto, substantially as specified.

2. As an article of manufacture, a can head having its seaming flange provided on its inner face with a firmly adherent, thin, hard, dry, durable, slightly elastic, flowed, ground, paper pulp coating containing an adhesive admixture, the inner face of said coating conforming to the adjacent face of the cover flange and hermetically united thereto, substantially as specified.

3. As an article of manufacture, a can head having its seaming flange provided on its inner face with a firmly adherent, thin, hard, dry, durable, slightly elastic, flowed, paper pulp coating containing an admixture of resin to render it more firmly adherent and give it greater strength and body, the inner face of said coating conforming to the adjacent face of the cover and hermetically united thereto, substantially as specified.

4. A head for double seamed cans having a seaming flange coated on its inner face with a durable paper pulp packing applied thereto in a liquid state and dried thereon, said packing being a thin, hard, dry, slightly elastic film and firmly adherent to the metal surface of the seaming flange, substantially as specified.

5. A head for double seamed cans, having a seaming flange coated on its inner face with a durable paper pulp packing applied thereto in a liquid state and dried thereon, said packing being a thin, hard, dry, slightly elastic film and firmly adherent to the metal surface of the seaming flange, the seaming

flange of said head having an outer curled edge to protect the packing when dried and to confine it while drying, substantially as specified.

6. As an article of manufacture, a can head having its seaming flange provided on its inner face with a firmly adherent, thin, hard, dry, durable, slightly elastic, flowed, paper pulp coating containing an admixture of resin and glycerin to render it more firmly adherent and give it greater strength and body, the inner face of said coating conforming to the adjacent face of the cover flange and hermetically united thereto, substantially as specified.

7. As an article of manufacture, a can head having its seaming flange provided on its inner face with a firmly adherent thin, hard, dry, durable, slightly elastic, flowed, paper pulp coating containing an admixture of resin, glycerin and alcohol to render it more firmly adherent and give it greater strength and body, the inner face of said coating conforming to the adjacent face of the cover flange and hermetically united thereto, substantially as specified.

8. In a sheet metal preserving can of tin plate, a can head having its seaming flange provided on its inner face with a firmly adherent, hard, dry, slightly elastic, flowed, paper pulp coating, substantially as specified.

BALDWIN H. KANNENBERG.

Witnesses:

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