June 16, 1953 E. W. LAGER ET AL 2,642,031

ADHESIVE APPLIER FOR FIBER CONTAINERS

Original Filed Feb. 1, 1945 2 Sheets-Sheet 1

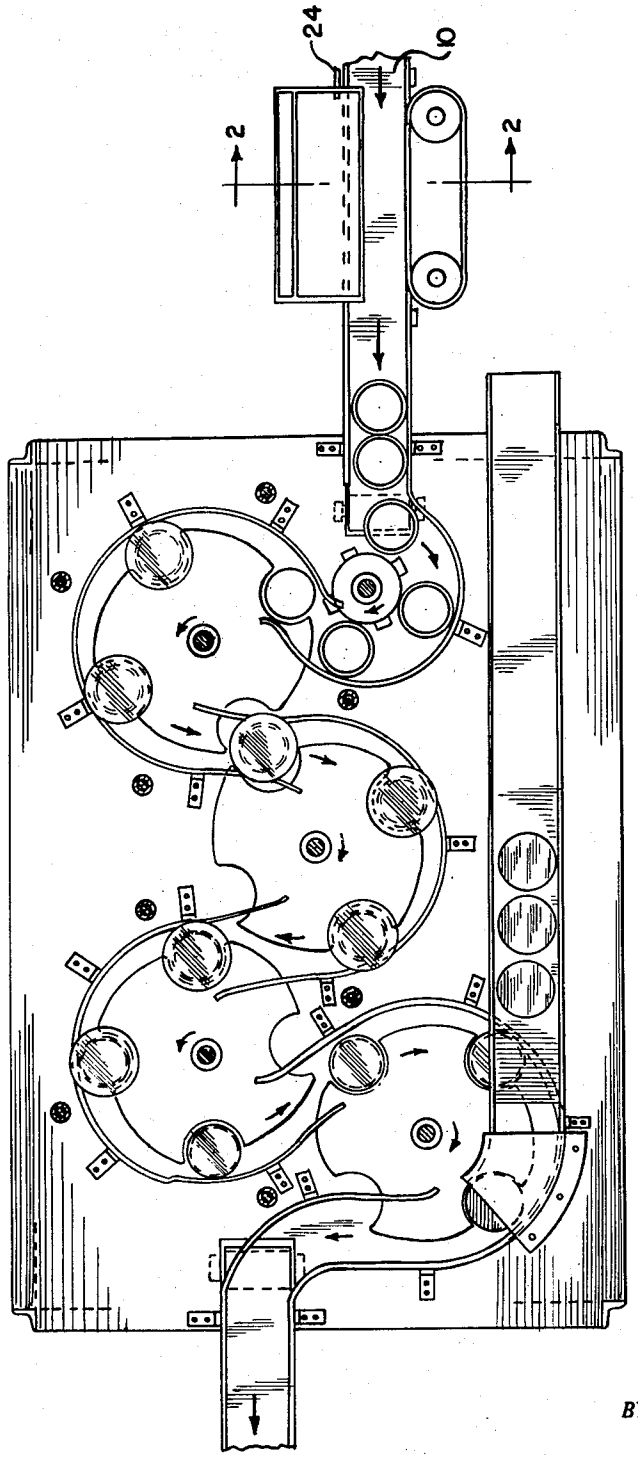


FIG. 1

ERIC W. LAGER
JAMES J. PROHASKA &
HEINRICH E. HAASE
INVENTORS

BY R. G. Story

ATTORNEY

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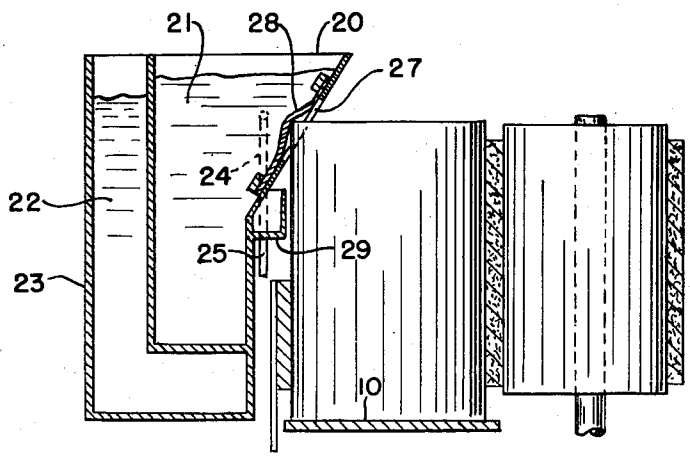


FIG. 2

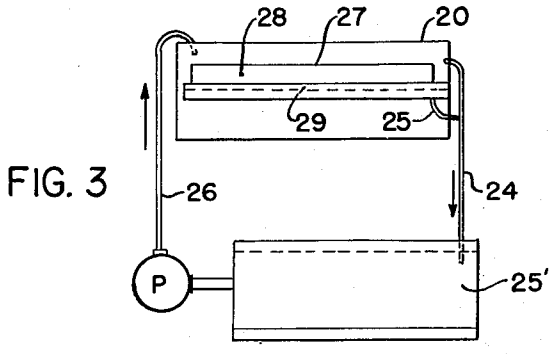


FIG. 3

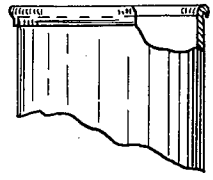


FIG. 4

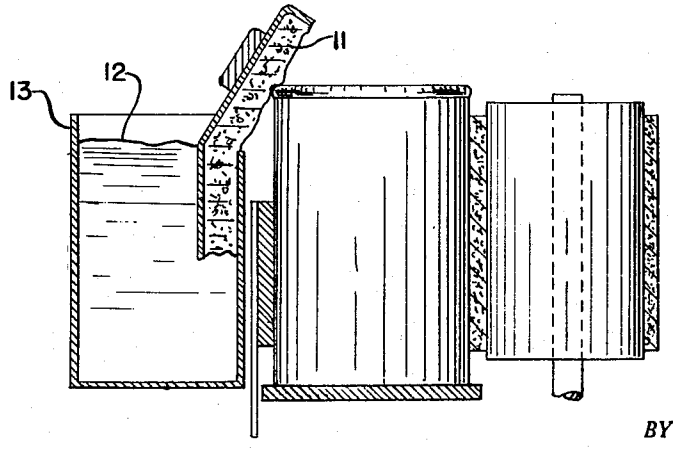


FIG. 5

ERIC W. LAGER
JAMES J. PROHASKA &
HEINRICH E. HAASE
INVENTORS

BY R. G. Story

ATTORNEY

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2,642,031

ADHESIVE APPLIER FOR FIBER CONTAINERS

Eric W. Lager, Palos Park, Heinrich E. Haase, Chicago, and James J. Prohaska, La Grange, Ill., assignors to Swift & Company, a corporation of Illinois

Application April 6, 1950, Serial No. 154,366

10 Claims. (Cl. 118—232)

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This invention relates to packaging machinery and more particularly to a machine for capping a generally cylindrical fiber container.

It is an object of this invention to provide a machine for producing a tacky bead around the open end of a container.

It is another object of this invention to provide an improved packaging means for use in sealing a shortening product in a fibrous container.

Other objects will appear from the specification below.

Figure 1 represents a plan view in section of the machine forming the subject of this invention,

Figure 2 is a view taken on line 2—2 of Figure 1 showing a means for applying a molten gelatin containing solution to the rim of a fibre container,

Figure 3 is a diagrammatic view of the solution flow system for maintaining the solution in a fluid condition,

Figure 4 is a side elevation partly broken away showing, in exaggerated relation, a container having a tacky bead produced around its open end, and

Figure 5 is a view taken on line 2—2 of Figure 1 showing modification of means to produce a tacky bead on the container in the form of a water reservoir useful for moistening a gelatin bead previously applied to a container.

Containers for holding three pounds of shortening and upwards are now being used for the distribution of this type of product and the open ends of such fibrous containers have sometimes been coated with a bead formed of a mixture of edible gelatin and glucose, to prevent the shortening material from being absorbed in the raw edges of the container. These raw edges are produced during the manufacture of a paper can body when the edges are trimmed to form the individual bodies, and the fatty material which is absorbed in these edges spreads through the body thus rendering the package unsightly as the oil smear spreads. The gelatin bead applied around the edges of the end of the body, coats the raw edges and prevents spreading of the oil through the paper. The provision merely of a gelatin bead will not, of course, prevent shortening from working up over the edge to spill down the outside, and it has been found in practice that the oily material which sometimes engages against the top of a closed container works out between the cap skirt and the carton.

In addition to detracting from the appearance

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of the package, the spreading of oil over the surface of the container creates a condition which promotes the tendency of the fatty material to become rancid. Due to the exposure of a large area of fatty material to oxygen, rancidity is produced along with the odor characteristic of this condition which further materially detracts from the value of the package.

The invention disclosed herein makes use of the gelatin containing or other greaseproof bead applied around the open end to effect a more efficient sealing of a fiber container and in following this teaching the bead is rendered tacky during the closing of a filled container in order to adhere an oil-proof liner to the tacky bead. As the bead dries the liner is fixed in position to close the container to seal the shortening in the package and yet the bead still performs the function of preventing fatty material from being absorbed into the wall. A cap is adapted to be then applied over the liner to cover the open end of the container and in one form of the invention the cap is utilized to wipe the periphery of the liner against the walls of the container.

A more specific embodiment of the invention is shown in the drawings and described below, wherein the filled containers are delivered to the capping machine on the conveyor 10, Figure 1, and in passing to the machine each of the containers has a tacky bead produced around the open ends thereof. When using the type of container where a gelatin bead has previously been applied to the raw edge of the generally cylindrical container, the upper edge of the container is rolled against a moistened sponge, felt, or other wicklike material as best shown in Figure 5. When the gelatin bead is forced into contact with the moist sponge, the bead of glucose and gelatin is wetted and quickly becomes tacky.

If it is desired to fill the containers before coating the gelatin solution on the edge of the container, means must be provided to effect its application. This gelatin applicator may take the form shown in Figure 2 in which a reservoir 20 is provided having a body of molten gelatin 21 disposed therein. The gelatin solution is maintained in a molten state by the hot water 22 in jacket 23 and also by recirculation through pipes 24 and 25 to a gelatin solution heating tank 25', as shown in Figure 3. The gelatin solution is continuously circulated from the gelatin tank through pipe 26 to the reservoir 20 so that the main body of the gelatin solution 21 is maintained in the molten condition. The front side of the gelatin reservoir 20 is preferably inclined

outwardly as shown in Figure 2 and has a window **27** in the inclined portion of the wall that is covered with a cloth sheet **28**. The cloth sheet is preferably formed of linen or some similar loosely woven material so that the molten gelatin solution maintained in the reservoir will slowly ooze through the pores of the cloth to collect as a film on the outside of the cloth window covering.

It has been found, that the molten gelatin solution which collects on the outside of the cloth window covering, may be wiped onto the upper edge of a container to provide a bead of just the right size for the present purposes, and since the solution is molten, it will be quite tacky. The bead thus applied may be utilized to effect application of a liner as well as seal the raw edge of the container. If a cylindrical container is being used, the bead can be applied by a rolling action as clearly shown in the drawings. Any excess gelatin solution flowing down the outside of the cloth window covering **28** is collected in the overflow trough **29** from where it flows into pipe **25** to be delivered to the melting tank for the gelatin solution.

Whether the tacky bead is produced by wetting the edge of a container having a gelatin bead previously applied thereto or by applying a molten gelatin solution to the container after it has been filled, the bead will take a form substantially as shown in Figure 4. The bead is disposed generally over the top edge of a side wall of the container to seal the raw edge and extends slightly down the outside of the wall.

Any suitable means may be provided for rotating the containers against the moistener shown in Figure 5 or against the gelatin applicator shown in Figure 2. Also in the claims, when the word "fabric" is used to describe the window covering of the gelatin applicator, the word is intended to include wire screen material of fine mesh, perforated flexible sheets, and any other material having a characteristic porosity such that molten gelatin solution will ooze therethrough. Depending more or less upon the flexibility of the fabric, a bead of greater or less width can be applied, although the viscosity of the solution also must be considered.

It is further suggested that adhesives other than gelatin containing may be used. A casein type adhesive of proper consistency may be utilized and, of course, inedible glues, although an edible form is preferred. As above stated, the adhesive is prefereably of a nature such as will repel grease, may be rendered temporarily tacky, and set to a firm degree at atmospheric temperatures.

While the above constitutes the preferred embodiment of this invention, it is apparent that many modifications will occur to those skilled in the art. All such modifications are contemplated to fall within the scope of the following claims.

The present application is a division of application No. 575,682, filed February 1, 1945, now Patent No. 2,531,914.

We claim:

1. A device for applying a tacky bead of molten gelatin around the open end of a container, comprising means including a reservoir for holding the molten gelatin, said reservoir having a fabric window disposed in a wall thereof through which said molten gelatin will ooze to the outer surface of the fabric window, and means to move the open end of the container into contact with said fabric window with said open end of the container in contact with the gelatin which has oozed through the window.

2. A device for producing a tacky bead of gelatin around the open end of a cylindrical container, comprising means including a reservoir for holding a molten gelatin, said reservoir having a fabric window disposed in a wall thereof through which said molten gelatin will ooze to the outer surface of the fabric window, means to roll said cylindrical container against said fabric window with said open end of the container in contact with the gelatin which has oozed through the window.

3. A device for applying a tacky gelatin bead around a substantially cylindrical container, comprising a reservoir for holding a molten gelatin, a heated melting pot to render said gelatin molten, means to convey the melted gelatin from said pot to said reservoir, said reservoir having a fabric window in a wall thereof through which said molten gelatin will ooze to the outer surface of the fabric window, means to collect the excess molten gelatin oozing through said window and flowing down the outside thereof, means to convey said overflowing molten gelatin to said melting pot whereby the gelatin may be continuously recirculated to maintain it in a molten state; and means to roll a cylindrical container against the outer wall of said window with said open end of the container in contact with the oozing gelatin.

4. A device for applying a tacky bead of molten gelatin, or the like, around the open end of a cylindrically shaped container, said device including a reservoir for holding a molten gelatin, one side wall of said reservoir having at least a portion thereof positioned at an angle with respect to the vertical with an opening in said portion, an applicator covering said opening, said applicator being composed of a material permitting the gelatin to ooze to the outer surface thereof, and a conveyor adjacent said wall and positioned to support said container with the edge of said container end in contact with said applicator, said conveyor being adapted to rotate said container to bring all of said edge into contact with said applicator.

5. A device for applying a tacky bead of molten gelatin, or the like, around the open end of a cylindrically shaped container, said device including a reservoir for holding a molten gelatin, one side wall of said reservoir having at least a portion thereof positioned at an angle with respect to the vertical with an opening in said portion, an applicator covering said opening, said applicator being composed of a material permitting the gelatin to ooze to the outer surface thereof, means associated with the container for maintaining the gelatin in molten condition, and a conveyor adjacent said wall and positioned to support said container with the edge of said container end in contact with said applicator, said conveyor being adapted to rotate said container to bring all of said edge into contact with said applicator.

6. A device for applying a tacky bead of molten gelatin, or the like, around the open end of the cylindrically shaped container, said device including a reservoir for holding a molten gelatin, one side wall of said reservoir having at least a portion thereof positioned at an angle with respect to the vertical with an opening in said portion, an applicator covering said opening, said applicator being composed of a material permitting the gelatin to ooze to the outer sur-

face thereof, a trough positioned along said wall below said opening to receive any excess of gelatin oozing through said applicator, means including a pump to collect the excess molten gelatin from said trough to return said excess to said reservoir, the intake of said pump also connecting to said reservoir to circulate the gelatin contained in the reservoir, said means including a heater to supply heat to the circulated gelatin, and a conveyor adjacent said wall and positioned to support said container with the edge of said end in contact with said applicator, said conveyor being adapted to rotate said conveyor to bring all of said edge into contact with said applicator.

7. A device for applying a tacky bead of molten gelatin, or the like, around the open end of a cylindrically shaped container, said device including a reservoir for holding a molten gelatin, one side wall of said reservoir having at least a portion thereof disposed at an angle with respect to the vertical with an opening in said portion, said opening being elongated in a horizontal direction, an applicator covering said opening, said applicator being composed of a material to permit the gelatin to ooze to the outer surface thereof, and a conveyor adjacent said wall and positioned to support said container with the edge of said end in contact with said applicator, said conveyor being adapted to move said container along said wall while rotating the container, thereby bringing all of said edge into contact with the elongated applicator.

8. A device for applying a tacky bead of molten gelatin, or the like, around the open end of a cylindrically shaped container, said device including an applicator having a face positioned in a plane disposed at an angle with respect to the vertical, means to supply said applicator with a molten gelatin to the rear of said face, said applicator being elongated in a horizontal direction and composed of a material to permit the gelatin to ooze to the face thereof, and a conveyor adjacent said applicator and positioned to support said container with the edge of said end in contact with said face, said conveyor being adapted to move said container along said

applicator while rotating the container thereby bringing all of said edge into contact with said face.

9. A device for applying a tacky bead of molten gelatin or the like around the open end of a cylindrically-shaped container, said device including an applicator having an elongated spreading face, means to supply said applicator with molten gelatin to the rear of said face, said applicator being composed of a material to permit the gelatin to ooze to the face thereof, a conveyor adjacent said applicator positioned to support said container with the edge of said end in contact with said face and to move said container parallel to the elongated dimension of said face, and means to provide a relative rotational movement between the container and the applicator to bring all of said edge into contact with the applicator.

10. A device for applying a tacky bead of molten gelatin or the like around the open end of a container, said device including a reservoir for holding the molten gelatin solution, one side wall of said reservoir having an opening therein, an applicator covering said opening, said applicator being composed of a material permitting the gelatin to ooze to the outer surface thereof, a conveyor adjacent said wall and positioned to support said container with the edge of the container end in contact with the applicator, and means to provide a relative rotational movement between the container and the applicator to bring all of said edge into contact with the applicator.

ERIC W. LAGER.
HEINRICH E. HAASE.
JAMES J. PROHASKA.

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