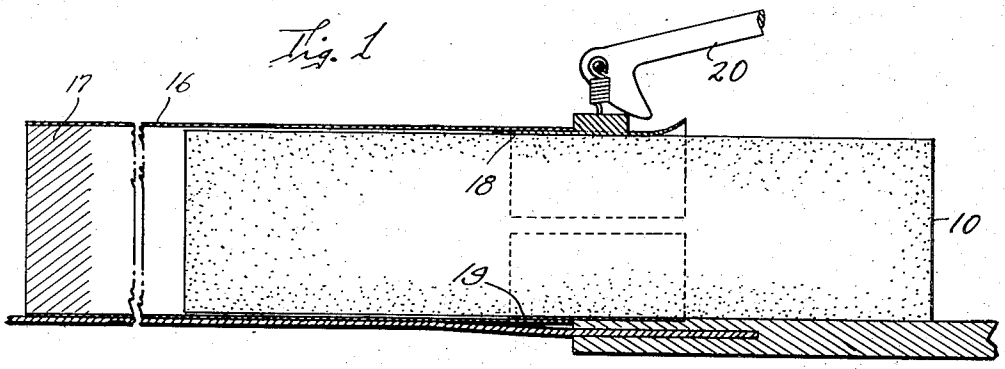
Aug. 8, 1933. F. RIEBEL, JR 1,921,944

RENEWABLE WAX CARTRIDGE FOR WAX APPLICATORS

Filed May 23, 1932

Fig. 1



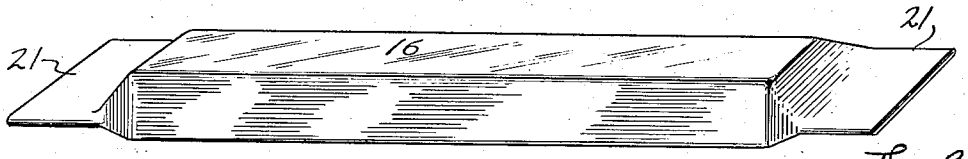




Fig. 2

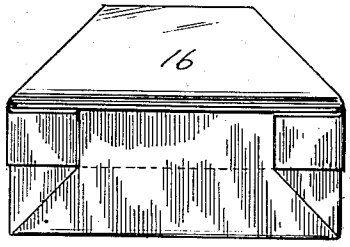



Fig. 4

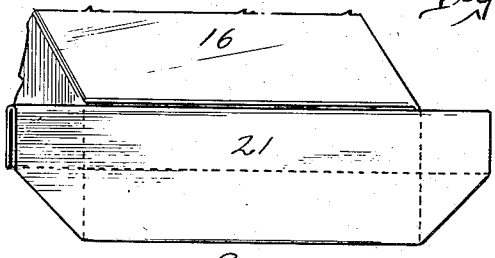



Fig. 3

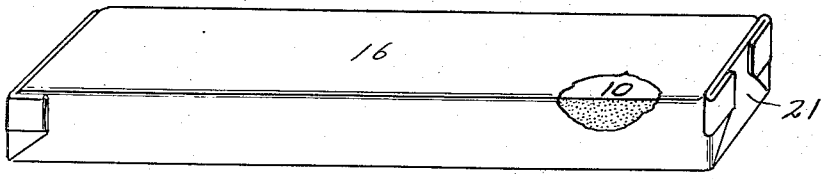



Fig. 5

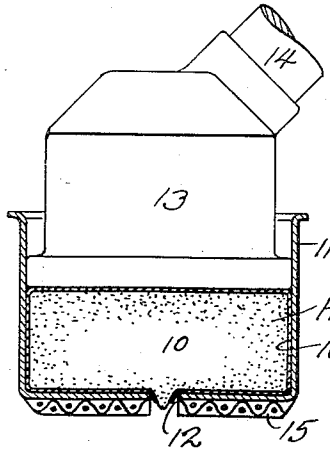



Fig. 6

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## RENEWABLE WAX CARTRIDGE FOR WAX APPLICATORS

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Application May 23, 1932. Serial No. 613,019

6 Claims. (Cl. 206—56)

This invention relates to wax cartridges to be used in connection with wax applicators adapted to apply pressure to the cartridge in such a way as to extrude wax from a slit in one side of the cartridge into the path of the spreading surfaces of the applicator.

An object of the invention is to provide a cartridge embodying a body of wax and a container of sufficient flexibility to conform intimately to the interior of the applicator and to offer very little resistance to collapsing under the pressure of the applicator, yet strong enough to resist rupture.

Another object is to provide such a package which is liquid tight, i. e., in which the wax solvent cannot penetrate the wrapper. This is essential to the preservation of the wax against drying and to the preservation of the container against discoloring.

Another object of the invention is to provide such a cartridge in a form in which extrusion through a side wall of the container can be successfully accomplished, whereby certain definite advantages are secured such as, maximum area of wax distribution, minimum distance of travel of the wax from the cartridge to the surface to be waxed, and other advantages which will later appear.

It has been discovered that a cartridge constructed, in accordance with the present invention, of the material known commercially as "cellophane", fulfills the requirements above stated.

The sealing of such material must be by the adhesive cementing or welding of flat surfaces thereof in face to face contact.

The most difficult problem encountered in the manufacture of such cartridges has been to seal the containers so that they will successfully withstand the strain set up by pressure from the applicators.

The present invention aims to provide a cartridge in which the difficulty of seams opening up and rupture occurring is substantially eliminated.

A further object is to provide a method of packaging which does not involve melting the wax (which would injure the same). To this end, the wax is pre-formed and cooled into a rigid block and then sealed in the container at a low temperature whereby handling does not deform the wax.

Another object is to provide a method of packaging by which the surfaces to be adhesively joined are protected against contact with the pre-formed wax or any waxy object, in order that the adhesion may not be weakened by films of wax on the surfaces to be joined.

With these and other objects in view the invention consists in the combination and construction and arrangement of the various parts thereof, whereby the objects contemplated are attained, as more fully set forth in the accompanying specifications, pointed out in the claims, and illustrated in the accompanying drawing, in which:

Fig. 1 is a longitudinal sectional view through a piece of apparatus by means of which a body of wax is moved into its container according to the present invention.

Fig. 2 is a perspective view of the container with the wax therein, illustrating a preliminary step in the sealing process.

Fig. 3 is a perspective view of the same illustrating a subsequent step in the sealing process.

Fig. 4 is a similar view illustrating a further step in the process.

Fig. 5 is a perspective view of the completed cartridge, a portion of the container being broken away to illustrate the body of wax therein.

Fig. 6 is a transverse sectional view taken through the applicator in connection with which the cartridge is used.

In manufacturing the wax cartridges of the present invention, a high grade floor wax having a relatively high carnauba content is extruded under pressure at normal temperatures through a die to form a ribbon having the cross sectional shape and dimensions desired in the finished cartridge. This ribbon is then cut into lengths and cooled to a low temperature at which the strips of wax are sufficiently hard so that subsequent handling will not deform them. The strips of wax are then cut into the correct lengths desired in the individual cartridges, and are taken immediately to an assembling table where they are placed in their containers according to the present invention. The cooling may be either prior to or after the cutting of the strips of wax into individual cartridge lengths.

One of the individual blocks of wax is shown in Fig. 1, indicated by the reference numeral 10.

Many different methods of enclosing the wax in a flexible container were tried before the present invention was finally attained, and found objectionable in some respect. Flexible metallic tubes proved to be of insufficient flexibility when made heavy enough to withstand the pressures to which a cartridge of this type is subjected, and the material known commercially as "cellophane"

was finally hit upon as having the required strength combined with flexibility. To indicate the need for flexibility, I have illustrated the cartridge used in connection with a wax applicator comprising an open top receptacle 11 having in its bottom wall a longitudinal slot 12, and a presser head 13 provided with a handle 14 by means of which the applicator is operated. As the operator pushes the applicator back and forth over the floor, the downward pressure of the head 13 against the wax cartridge "A" disposed between said head and the bottom of the container, serves to extrude the wax through a slit cut in the bottom wall of the cartridge container 16, through the slot 12 in the distributor receptacle, and into the path of movement of the fabric distributing pads 15 secured to the bottom of the distributor. As the wax is used, the side walls of the container 14 will buckle and wrinkle, until finally the top wall of the container comes into contact with the bottom wall thereof and virtually all of the wax is squeezed through the slot 12. A metal tube container with its ends sealed by soldering or welding, would offer too great resistance to the buckling of the side walls and end walls to be successful for the purpose contemplated.

In turning to the material known as "cellophane", it was discovered that this material not only had the strength combined with flexibility necessary for the requirements of the present invention, but also is sufficiently non-porous or non-pervious so as to retain the solvent within the cartridge against evaporation or discoloring of the container.

In the many attempts to form the cartridge, using this material as a container, wrapping of the wax in a square sheet of the material with a longitudinal seam extending from one end to the other of the cartridge, was found to result in a certain percentage of cartridges which would leak prior to use or rupture in use. Welding of the faces of the container by means of a solution adapted to dissolve the surface thereof, was tried, but it was discovered that this resulted in weakening of the material.

The present invention solves the various difficulties met with in attempts to make a cartridge of this nature, by providing a container in the original form of a seamless tube, open at the ends, sliding the wax longitudinally into the tube, thence applying adhesive between the contacting faces of the bordering end portions of the container so as to adhesively join these faces, and thence folding these bordering end portions and adhesively securing them against the ends of the cartridge.

The container in its open ended tubular form is shown in Fig. 1 at 16. If desired, one end of the container may be closed by applying adhesive as at 17 between the contacting faces of said end portion. The opposite end of the container is thence inserted over the co-acting nozzle members 18—19 of an inserting sleeve device, the upper nozzle member 18 being first depressed by means of the lever 20 and the nozzle members thence allowed to expand so as to stretch the open mouth of the container 16 sufficiently so that the wax 10 may be inserted through the inserting sleeve device and into the container without contacting the inner surface of the end portion of the container. It is to be noted that the projecting nozzle members 18—19 protect sufficient area of the end portion of the container to provide adequate surface for adhesively sealing this end of the container.

After the wax has been centered in the container, the latter is pulled over the inserting sleeve device, and the open end of the container through which the wax has been inserted is closed, the opposite wall portions thereof being flattened together and thence cemented together by an adhesive applied to the inner surface of said end portion. The result is shown in Fig. 2.

One advantage of employing this method of sealing is that of hardening the adhesive by clamping the flat end portions of the container between heated jaws of a press, adapted to expel the solvent from the adhesive.

The flat end portions above referred to are indicated on the drawing by the reference numeral 21.

These flat end portions are thence folded as shown in Figs. 3, 4 and 5, and adhesively secured against the ends of the package. The purpose of this step is to provide square ends on the package, and any method of folding the flat end portions 21 against the package so that they do not project, may be employed.

When the cartridge is in use in the applicator as shown in Fig. 6, pressure applied to the body of wax 10 will be transmitted in all directions against the walls of the container, and will tend to pull apart the adhesively sealed portions thereof. This pressure is borne by the adhesive joint between the contacting inner faces of the container, rather than by the folding of the flat end portions against the ends of the container as shown in Figs. 3 and 4, although the latter assists to some extent in retaining the cartridge in sealed condition under pressure.

In the applicator, more space is left between the ends of the cartridge and the ends of the distributor than between the side walls thereof. This gives the ends of the cartridge more freedom in buckling under the weight of the presser head. The side walls, being of a single thickness of material, will readily fold up as the container is collapsed.

Since the end walls are comparatively short in comparison with the length of the side walls, the amount of resistance offered thereby to buckling is reduced to the minimum.

This cartridge has no longitudinal seams to rupture or open, and in view of the minimum area of the ends of the container, the amount of pressure transmitted thereto is also at a minimum.

The insertion of the wax through the protecting sleeve of the inserting device eliminates the possibility of preventing the formation of a seal between the surfaces of the end portion, by wax films on said surfaces. This trouble proved to be a real obstacle in the successful achievement of the invention.

The invention consists of:

1. A wax cartridge for use in connection with a waxing device of a type adapted to enclose the cartridge and to apply constricting pressure thereto for extruding the wax through a longitudinal wall of the cartridge comprising an elongated body of plastic wax and a container enclosing said body comprising a seamless tube the ends of which are sealed.

2. A wax cartridge for use in connection with a waxing device of a type adapted to enclose the cartridge and to apply constricting pressure thereto for extruding the wax through a longitudinal wall of the cartridge comprising an elongated body of plastic wax, and a container therefor comprising a seamless tube of liquid impervious

material enclosing said body, the ends of said tube being adhesively sealed.

3. A wax cartridge for use in connection with a waxing device of a type adapted to enclose the cartridge and to apply constricting pressure thereto for extruding the wax through a longitudinal wall of the cartridge comprising an elongated body of plastic wax, and a container enclosing said body comprising a seamless tube the ends of which are adhesively sealed by means of an adhesive applied to contacting opposite wall sections of the end portions of the tube.

4. A wax cartridge for use in connection with a waxing device of a type adapted to enclose the cartridge and to apply constricting pressure thereto for extruding the wax through a longitudinal wall of the cartridge comprising an elongated body of plastic wax and a container enclosing said body comprising a seamless tube of the material known commercially as "cellophane", the ends of which are sealed adhesively by means of an adhesive applied to contacting opposite wall sections of the end portions of the tube.

5. A wax cartridge for use in connection with a waxing device of a type adapted to enclose the cartridge and to apply constricting pressure thereto for extruding the wax through a longitudinal wall of the cartridge comprising an elongated body of plastic wax, and a container enclosing said body comprising a seamless tube the ends of which are adhesively sealed and folded and secured against the ends of the cartridge.

6. A wax cartridge for use in connection with a waxing device of a type adapted to enclose the cartridge and to apply constricting pressure thereto for extruding the wax through a longitudinal wall of the cartridge comprising an elongated body of plastic wax and a container enclosing said body comprising a seamless tube of the material known commercially as "cellophane", the ends of which are sealed adhesively by means of an adhesive applied to contacting opposite wall sections of the end portions of the tube and folded and secured against the ends of the cartridge.

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