Oct. 4, 1932. A. E. PAYSON ET AL 1,880,358

DOUBLE WALLED VACUUM RECEPTACLE

Filed July 24, 1929 2 Sheets-Sheet 1

FIG. 1.

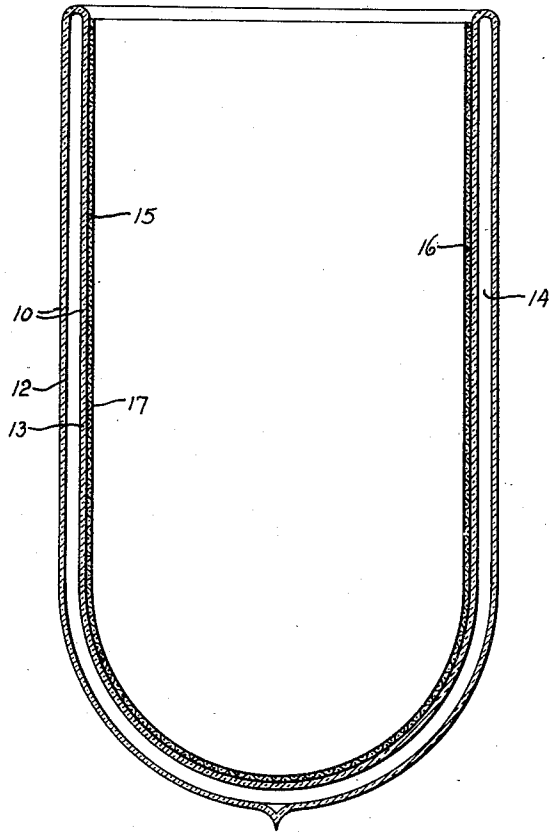
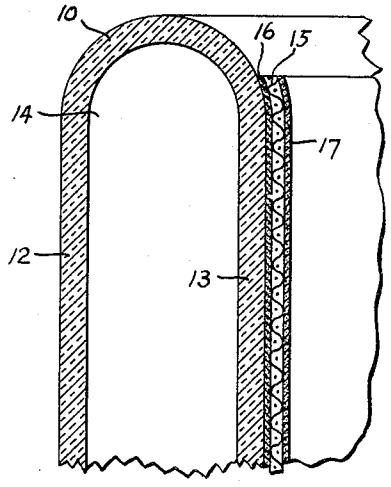


FIG. 2.



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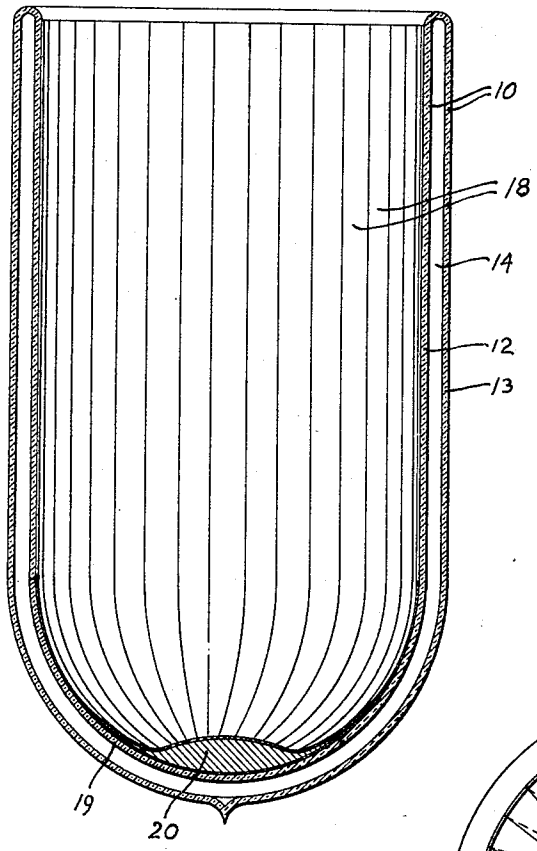


FIG. 3.

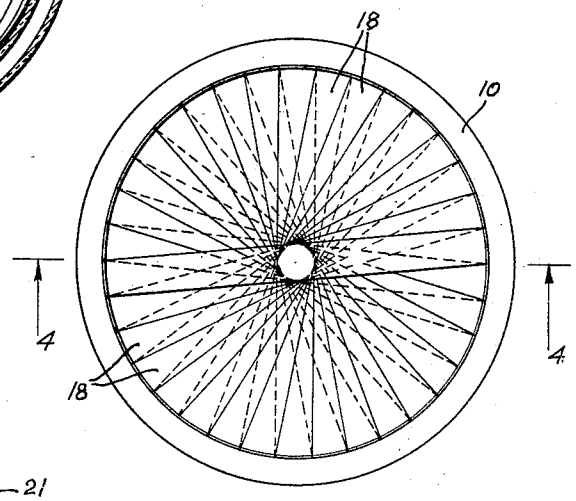


FIG. 4.

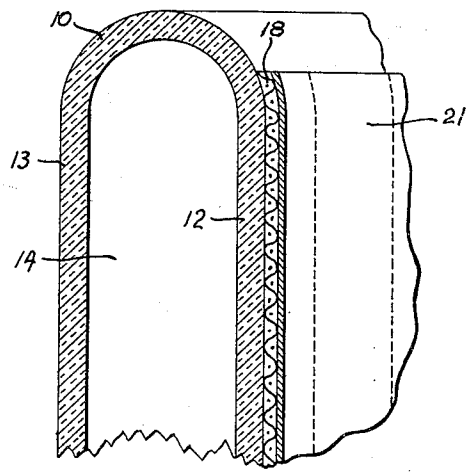


FIG. 5.

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DOUBLE-WALLED VACUUM RECEPTACLE

Application filed July 24, 1929. Serial No. 380,542.

This invention relates to glass jars and other receptacles of the so-called vacuum type, and its object is to produce a novel jar structure characterized by an inner lining of textile fabric, which protects the jar and prevents the shattering of glass in the event of breakage.

Vacuum jars of large size are being extensively used for storing and dispensing ice cream and other confections that must be kept at low temperature. The inside of these jars is usually cooled by means of dry ice, and the heat-insulation of the jars keeps the contents cold. The ordinary handling of these glass jars frequently subjects them to sudden shocks which sometimes break the inner glass wall, with the result that the glass flies violently in all directions almost as fine as powder. This shattered glass is liable to injure persons nearby, and such accidents have happened.

It is the purpose of our invention to provide a vacuum jar structure that is absolutely safe to handle, and we accomplish this by lining the inside wall of the jar with a textile fabric, which is preferably covered with an outer shell or coating of suitable material. In one embodiment of our idea, we use a cloth bag of linen, cheesecloth, silk, or the like, shaped approximately to the dimensions of the jar and glued to the glass wall in any practical way. Instead of a cloth bag, we may use gummed tape which is laid on in one or more layers. The textile lining is preferably sprayed with heavy varnish, lacquer, rubber or molten metal, to form a hard outer shell impervious to moisture and unaffected by the contents of the jar. The composite lining thus formed not only strengthens the jar and thereby prolongs its life, but also prevents shattering of the glass if the jar should break.

Two forms of our new jar structure are illustrated by way of example in the accompanying drawings, in which—

Fig. 1 shows a sectional view of a double-walled vacuum jar equipped with our new lining in which a cloth bag is used;

Fig. 2 is a fragmentary sectional detail on a grossly exaggerated scale to indicate the adhesive mounting of the cloth and the outer coating;

Fig. 3 represents a vertical section through a double-walled vacuum jar provided with a lining of gummed tape, the section being taken on line 4—4 of Fig. 4;

Fig. 4 is a plan view of Fig. 3; and

Fig. 5 shows a fragmentary sectional view on a grossly exaggerated scale to bring out certain details of the tape lining more clearly.

Referring to Figs. 1 and 2, a double-walled vacuum jar 10 comprises outer and inner glass walls 12 and 13 separated by an evacuated space 14, according to usual construction. This jar is adapted to serve as a storing and dispensing receptacle for foodstuffs, particularly ice cream and other confections that must be kept at low temperature. A cloth bag 15 of suitable fabric, such as cheesecloth, linen, silk, and the like, is fixed to the inner wall 13 by an adhesive 16, which may be glue, cement, a sticky gum, varnish, and other adhesive compounds that may be found practical. The cloth lining 15 is covered with a coating 17 of heavy varnish, lacquer, rubber, or sprayed metal, which constitutes an outer protective shell firmly retained in place by the cloth. In other words, the cloth lining 15 acts as a binder for the outer shell or coating 17, which is hard and substantially impervious to moisture, easy to keep clean, and is not affected by the contents of the jar. This compound lining is easily applied to jars at very little expense, giving a receptacle that is safe to handle in commercial use and that lasts longer than unlined jars.

In the modification of Figs. 3–5, strips of gummed tape 18 are pasted over the inner wall 12 in any practical way to cover the wall completely. In the present instance, we have shown the tape applied vertically, but it may be put on in horizontal or diagonal layers, or in a combination of these different methods. For example, the vertical strips in Figs. 3 and 4 could be covered with horizontal or diagonal strips to provide a cloth lining of double thickness, as will be understood without additional illustration. The edges of adjacent strips may or may not overlap, as desired. Of course, there will be some

overlapping of the strips on the rounded bottom 19 of the jar, as indicated at 20, but that overlapping is really an advantage because it acts like a cushion for an article thrown into the jar. The gummed tape 18 is easily fixed in place, since its own adhesive surface is sufficient to make it stick tightly to the glass wall. The tape lining is preferably covered with a suitable outer coating 21, which may be the same as the coating 17 of Figs. 1 and 2. In Figs. 3 and 4 the outer shell 21 has been omitted for clearness.

Among the metals that may be used for spraying the outer shells 17 and 21 over the fabric linings 15 and 18 are copper, bronze, silver, gold, cadmium, aluminum, lead, zinc and others. This spraying of metal can be done by guns constructed for that purpose and available in the market. The sprayed surface 17 or 21 can be electroplated with chromium or a similar metal for additional strength, and at the same time to make the outer shell impervious to corrosion. Should the jar become broken by an excessive shock, the compound lining of a textile fabric backing and an outer homogeneous shell prevents shattering of the glass so that nobody can be injured. There is no danger of the outer wall 13 being broken, because jars of this kind are enclosed in a protective casing, usually of metal.

Although we have shown and described certain specific constructions, our invention is not limited to the details set forth. Changes and modifications may be made by others without departing from the scope of the invention as defined in the appended claims.

We claim as our invention:

1. A double-walled vacuum jar of breakable material provided inside with a lining of textile fabric which is covered with a hard outer shell composed of material applied to the fabric in plastic condition.

2. A double-walled vacuum jar of glass provided inside with a cloth lining stuck to the glass wall, said lining being covered with metal which forms a one-piece homogeneous outer shell firmly adhering to the cloth.

3. A double-walled vacuum jar of glass provided inside with a lining of gummed tape which is covered with sprayed metal adapted to form a one-piece outer shell intimately united with the tape.

4. The method of treating a double-walled vacuum jar which comprises covering the inner wall with a textile fabric, and spraying the fabric with molten metal which adheres to the fabric and hardens to form a one-piece metallic shell.

5. The method of treating a double-walled vacuum jar which comprises covering the inner wall with adhesive tape, and spraying the tape covering with a liquid or plastic compound which adheres to the tape and hardens to form a one-piece outer shell.

6. The method of treating a double-walled vacuum jar of glass which comprises covering the inner wall with a textile fabric which is glued in place, and covering said fabric with a liquid or plastic compound which adheres to the fabric and hardens to form a one-piece outer shell.

7. A double-walled vacuum jar of glass covered inside with a lining of gummed tape, the strips of tape being arranged radially across the bottom of the jar and thereby overlapping at the center to form a cushion of increased thickness.

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