

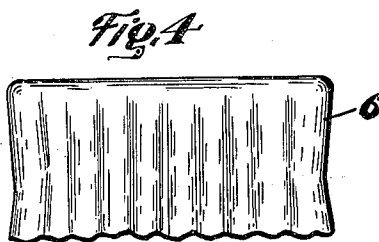
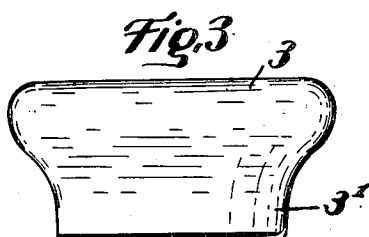
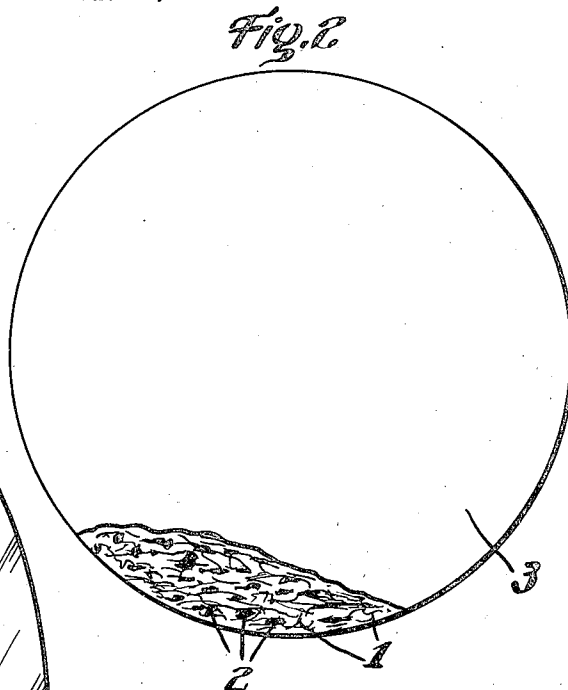
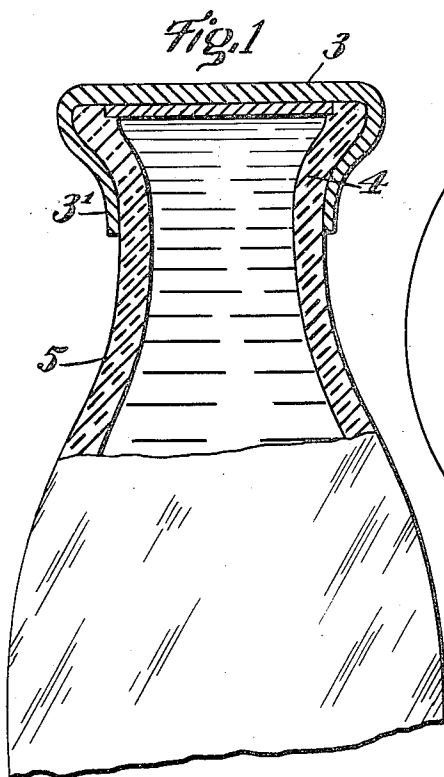
Dec. 11, 1928.

1,694,399

H. P. SHOPNECK

WRAPPER FOR RECEPTACLES AND METHOD OF PREPARING THE SAME

Filed Jan. 13, 1927



Inventor
Henry P. Shopneck
Wm. Sprague
By Attorney

UNITED STATES PATENT OFFICE.

HENRY PHILIP SHOPNECK, OF DORCHESTER, MASSACHUSETTS, ASSIGNOR TO JOHN J. DALY, OF WEST NEWTON, MASSACHUSETTS.

WRAPPER FOR RECEPTACLES AND METHOD OF PREPARING THE SAME.

Application filed January 13, 1927. Serial No. 160,836.

This invention relates to wrappers for containers, and more particularly to wrappers for bottles the contents of which must be protected against contamination.

5 For the purposes of this application I shall show and discuss my invention as a protective wrapper for the mouth of a milk bottle, although it is to be understood that such treatment is purely illustrative and in no way
10 limiting, and that I may employ the principles of my invention in connection with any lipped container, the contents of which must be protected against contamination.

Heretofore, it has been the practice particularly with milk bottles, to draw a sheet
15 of paper or paper board over the mouth of the bottle and fasten it at the neck by means of a wire.

This method is objectionable in several respects. In the first place, the wrapper itself, being of paper, does not provide that adequacy and permanency of protection which is so desirable.

Milk bottles are packed in ice for delivery
25 and as the packing ice melts, the water tends to penetrate the protective wrapper as well as rust the binding wire. More than this, under some conditions of delivery, the bottles remain on porches or steps for several hours
30 before they are taken into the house, and during this time are not only exposed more or less to the elements but to animal or insect life as well, with consequent chances of contamination.

35 Aside from these problems of safety of seal itself, this type of wrapper is open to the further objection that the operation of applying the wrapper to the bottle mouth and fastening it by means of a wire clamping ring adds considerably to the manufacturing cost
40 of the wrapper in that it constitutes another operation which must be performed at a time and in a place where conditions are none too favorable for careful work.

45 To the end therefore of avoiding the objections to prior practice, while at the same time providing a wrapper which may be produced and applied more quickly and more economically than the prior art wrappers, and
50 which seals and protects the bottle contents against contamination with absolute certainty, I have devised my present invention. According to it, I provide a wrapper consisting of a fibrous base impregnated with a
75 thermo-plastic penetrant and water-proofing

agent. The wrapper blank has the quality of being normally hard and stiff so that it may be conveniently handled, of softening under a degree of heat treatment which itself is not uncomfortable to the operative handling the
60 blank, whereby the blank may be moulded over the bottle mouth and conformed thereto as a closely-fitting sealing wrapper, and which on cooling will stiffen and harden in the shape to which it has been moulded so as
65 to remain fixed or set on the bottle neck against accidental removal.

The method of practicing my invention together with illustrative wrappers embodying the principles involved, are described and
70 shown in the accompanying specification and drawings, and the characteristic features of novelty particularly pointed out in the appended claims. In the drawings:

Fig. 1 is a longitudinal section of a standard milk bottle equipped with a wrapper in accordance with my invention.

Fig. 2 is a detail view of the wrapper blank.

Fig. 3 shows a moulded wrapper which for the sake of illustration has been pulled off the
80 neck of the bottle, and

Fig. 4 shows a modified form of wrapper.

Similar reference characters indicate the same or similar parts in all the figures.

In carrying out my invention, I preferably saturate a blank of fibrous material 1 with a thermo-plastic waterproofing composition or material 2 adapted to be softened by a degree of heat which is not uncomfortable to the operator who may handle it when it is
90 softened and which is also adapted to be stiffened by cooling. The thermo-plastic composition 2 contains no ingredients which would have a deleterious effect upon the contents of the bottle and hence either or both
95 sides of the blank may be coated with the thermo-plastic composition, or the thermo-plastic composition may saturate the blank all the way through.

The fibrous material 1 used for the blank
100 may be made of a woven fibre such as cotton cloth, or a paper product, such as a paper felt made of cotton rags or pulp. However, I have found that a suitable material is a water laid felt composed of a short fibred
105 base, such as rag fibre, wood pulp, etc. and having long fibres, such as jute, ramie, hemp, sisal, manila, hair, etc. distributed throughout and in felted relation therewith.

A suitable felt base is made up of about 110

fifty parts white cotton rags, twenty parts sulphite pulp, and thirty parts long jute fibre. A suitable composition for the thermo-plastic coating or saturant is made up of 80% rosin and 20% Montan wax. Rosin alone, however, may be used if desired. In fact, any waterproofing composition capable of being readily softened by heat and stiffening on cooling is within the purview of my invention and the foregoing examples are only selected as illustrative.

After saturation the blank becomes relatively hard and stiff and is in this condition capable of convenient handling as a wrapper. In practicing my invention I soften the blank 3 by heating it to a degree which is not uncomfortable for one holding it in his hand, the degree of heat being preferably about 100° to 110° F. Inasmuch as the thermo-plastic saturant has a relatively low melting point, heat treatment at about said limits is sufficient to soften and render the blank conformable or mouldable to the bottle mouth. The blank thus softened is conformed to the rim and neck portion 4 of the bottle 5 by laying the blank across the bottle mouth and drawing down the surplus material as a depending skirt 3' which closely fits the bottle neck.

After the wrapper has been well shaped around the top and neck of the bottle, it is allowed to stiffen by cooling. Owing to the relatively low degree of heat required for softening the blank, the wrapper is stiffened and hardened in a correspondingly brief period.

I do not limit myself to the above described compositions of fibrous base, coating or saturant, there being many other materials or compositions which may be used with the same results, for instance the following method.

It is also possible to make the wrapper blank by adding a beaten pulp gum, such as rosin, in finely divided condition as a powder or colloidal emulsion or suspension, coagulating the gums so added onto the fibres, sheeting out the material on a cylinder machine, and after drying, heating the sheet material so as to cause the gums to flux and penetrate the sheet.

Inasmuch as the wrapper blank stiffens and clings around the top and neck of the bottle upon cooling, no wire is needed. This, of course, results in considerable saving in time, labor and materials, as well as avoiding the possibility of the wire becoming rusted.

If desired, I may incorporate a thermo-adhesive substance as such in the coating or impregnant which when the blank is heated becomes sufficiently sticky or tacky to cause the wrapper better to cling to the bottle.

I do not limit myself to any method of heating the blank, since any suitable method can

be used, as by dipping it in warm water, heating by steam, or dry heating, etc. No cooling means is necessary as the air cools it generally. Nor do I limit myself to any particular method of moulding the wrapper to conform to the shape of a bottle, as this may be done by hand or by machine.

My invention may be used on bottles having rims larger than the neck and also where no enlarged rim is present. Where the rim is present, as in most milk bottles no thermo-adhesive thermoplastic is necessary, but where no enlarged rim is present a thermo-adhesive thermoplastic is of advantage.

The size of the blank of course depends upon the size and shape of the bottle. It best fits a bottle when circular and should be of such size as to go sufficiently below the rim of the bottle to effectively cling to the neck of the bottle. Standard milk bottles can be easily covered with a three inch circular blank. The thickness of the blank will vary with the size of the bottle and the degree of strength required in the wrapper, a fifteenth of an inch being sufficiently thick for most purposes.

As an alternative construction I may employ a crimped or pleated wrapper 6, such as is shown in Fig. 4. This wrapper is made of the same material as that shown in Figs. 1 to 4, but is pre-formed to fit over the bottle mouth instead of being moulded thereto. It is softened in the same manner and on cooling clings to the bottle neck in the same manner as the wrapper of Figs. 1 to 4. In applying this form of wrapper, it is necessary, however, first to shape it over a die or mandrel slightly smaller than the neck of the bottle which it is to fit so that it will be slightly sprung when applied to the bottle neck and hence will more closely cling thereto.

Various other modifications in form, materials and proportions may obviously be resorted to within the spirit and scope of my invention as defined by the appended claims.

What I therefore claim and desire to secure by Letters Patent is:

1. A bottle closure comprising a water laid felt containing short and long fibres felted together and impregnated with a thermo-plastic stiffener.

2. A container closure, consisting of a water laid felt including a short fibred base and relatively long fibres distributed therethrough and in felted relation therewith and impregnated with a thermo-plastic stiffening material which is capable of being softened and rendered plastic by heat so as to be moulded to conform to the shape of the mouth and neck of the container, and which hardens and sets as conformed on cooling.

In testimony whereof I affix my signature.

HENRY PHILIP SHOPNECK.