Patented Aug. 29, 1933 1,924,708

UNITED STATES PATENT OFFICE

1,924,708

PACKAGING OF EDIBLE OILS

Walter G. Christiansen, Bloomfield, and Francis R. Chappell, Passaic, N. J., assignors to E. R. Squibb & Sons., New York, N. Y., a corporation of New York

No Drawing. Application January 17, 1930 Serial No. 421,590

4 Claims. (Cl. 99—11)

This invention relates to the packaging of edible oils, particularly cod-liver oil, to prevent them from acquiring malflavor. As employed herein, the term "edible oils" embraces oils used for alimentary and therapeutic purposes, for example cod-liver oil and castor oil; and "malflavor" designates an offensive or objectionable taste and/or odor.

Certain edible oils, notably cod-liver oil and castor oil, are of considerable alimentary and therapeutic value, but tend, even if they have been treated for the removal of malflavor, to acquire in a relatively short while a malflavor that militates strongly against and unduly restricts their use.

It is the object of this invention to provide a package and a method of packaging whereby edible oils, especially cod-liver oil and castor oil, may be prevented from acquiring malflavor.

We have found that oxygen and light are among the primary agents for causing edible oils to acquire malflavor, and that the oils may be satisfactorily protected from the action of these agents by packaging in opaque containers interiorly coated with an oil-insoluble film containing an antioxidant. An oil-insoluble film may be formed by the drying of various lacquers and varnishes and other fluids; for example, phenol-formaldehyde condensate lacquer or solutions of pyroxylin, cellulose acetate, or gelatin.

"Opaque" is herein used in the sense of "relatively impervious to actinic rays"; and by "an opaque container" we mean a container (1) formed of an opaque material or (2) coated interiorly with an oil-insoluble film containing an opaque substance, or exteriorly, if the opaque substance would deleteriously affect, or impart undesired properties to, the oil. In the first division would be included amber glass bottles and metallic vessels. Certain metals, for example iron, if maintained in contact with the oil, catalyze its acquisition of malflavor. Such metallic containers are rendered innocuous by interior coating with an oil-insoluble film, which constitutes an impassable barrier between the oil and the metal. Any of various well-known dyes, pigments, and the like, are suitable for containers in the second division; for example, the dyes Congo red and ponceau 2RD. Protection may, of course, be augmented by concurrently employing both expedients; that is, not only forming the containers of an opaque material but also coating them interiorly or exteriorly with an oil-insoluble film containing an opaque substance.

Compounds in the class consisting of phenols, aminophenols, aromatic amines, and derivatives thereof, for example hydroquinone, p-aminophenol, diphenylamine, and phenyl-α-naphthylamine, are efficient antioxidants for our purpose.

As an instance of the practice of our invention, we may introduce into an amber glass bottle a phenol-formaldehyde condensate lacquer containing between 2% and 3% of hydroquinone, shake the bottle until its entire interior has been covered, and drain out the excess of lacquer; apply with a brush to the exterior of the bottle a phenol-formaldehyde condensate lacquer containing about .05% of Congo red; and dry the bottle, preferably by baking. There remains on the inner surface of the bottle a film of phenol-formaldehyde condensate containing the hydroquinone, and on its outer surface a film of phenol-formaldehyde condensate containing the Congo red. Filling of the bottle with cod-liver oil, and sealing, may be performed in the customary manner. By reason of the opacity of the amber glass and of the Congo dye and the antioxidant properties of the hydroquinone, the cod-liver oil will be prevented for an indefinite period from acquiring malflavor under the different conditions encountered in transportation, storage, and use.

Application of the antioxidant-containing oil-insoluble film to the lip of the bottle will retard the malodorization of such oil as may be left thereon after some has been poured from the bottle.

Manifestly the specific details set forth are merely illustrative and by no means definitive of our invention, which may assume various embodiments within the scope of the appended claims.

We claim:

1. A package comprising an edible oil in an opaque glass container interiorly coated with an oil-insoluble film containing an antioxidant.

2. A package comprising an edible oil in a glass container coated exteriorly with an oil-insoluble film containing an opaque substance and interiorly with an oil-insoluble film containing an antioxidant.

3. A package comprising cod-liver oil in an opaque glass container interiorly coated with an oil-insoluble film containing an antioxidant.

4. A package comprising cod-liver oil in a glass container coated exteriorly with an oil-insoluble film containing an opaque substance and interiorly with an oil-insoluble film containing an antioxidant.

WALTER G. CHRISTIANSEN.
FRANCIS R. CHAPPELL.