

UNITED STATES PATENT OFFICE.

CHARLES DRUM LIPPINCOTT, OF DENVER, COLORADO.

DISINFECTANT.

SPECIFICATION forming part of Letters Patent No. 511,782, dated January 2, 1894.

Application filed February 9, 1893. Serial No. 461,667. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES DRUM LIPPINCOTT, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Germicide Deodorants and Disinfectants; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has reference more particularly to a germicide, deodorant and disinfectant composition, for impregnating the atmosphere of rooms by evaporation therein and thus effecting the destruction of disease bacteria and other germs, (or arresting in whole or in part their propagation,) while at the same time overcoming the olfactory effects of malodors from whatever source and being safe in the use; but the composition may be otherwise employed, as for example, when the presence of the composition in or on the material to be sterilized, disinfected, or deodorized is permissible it may be applied thereto in liquid form with or without attenuation. It is included in the invention for all the uses for which it may be adapted.

To form the germicidal and disinfectant basis of the new composition, cinnamein (benzyl cinnamate or the benzyl ester of cinnamic acid) is employed in conjunction with the well known disinfectant, cresol (cresylic acid), the new composition thus produced having a germicidal and disinfectant power (as I have discovered), many times that of common phenol. This germicidal and disinfectant basis can be used alone under appropriate conditions, or in conjunction with any compatible substance or substances; but it is not by itself well adapted to common uses in or about dwellings, being caustic and of a pungent odor disagreeable to many and when exposed in rooms liable to impregnate the air too strongly.

To adapt the composition better to domestic uses, to enable it more safely to be handled, to increase the deodorizing and in some respects the disinfectant action, or generally to fit it better for sale or use while utilizing the powerful germicidal and disinfectant properties of the basis above mentioned, this

latter is blended with odorous oils compatible therewith, such as eucalyptol, oil of wintergreen, oil of sassafras, and oil of origanum; and the mixture thus produced may be and is preferably reduced by alcohol and turpentine.

The cinnamein (benzyl cinnamate) is prepared from Peru balsam, say twenty (20) pounds of the Peru balsam being distilled with say, one and one half pounds of dry caustic potash (or a solution of potash could be used), in a steam heated still, at about 669° Fahrenheit and the distillate collected until it amounts (apart from condensed water in case steam is admitted into the still), to about sixty per cent. (60%) in weight of the balsam originally introduced into the still. If the steam has been admitted into the still, the distillate should be deprived of the water. Means for suitably drying such distillate are well known to chemists, and need not be here described.

Three (3) parts by weight of the distillate just described are combined by mixing with two (2) parts of cresol (cresylic acid) at a temperature of about 184° Fahrenheit. The whole is kept at the temperature named for about an hour. A clear amber colored solution is thus obtained, which solidifies in cooling and which constitutes the germicide and disinfectant basis of the composition. This composition basis may be dissolved in alcohol, (ninety-four per cent. will answer, and the solution may be made in the cold or with a slight elevation of temperature,) and may then be crystallized from the super saturated solution. The crystals are of a pale straw color, and as far as I have ascertained, monoclinic, are slightly deliquescent, are caustic or escharotic, possess an acrid burning taste, are inflammable like phenol, and give off (when burned), acrid and comparatively irrespirable fumes as also considerable smoke (unconsumed carbon). This crystallized composition may be used; but crystallization from alcohol is unnecessary and is preferably not employed. Moreover in order to simplify the process, the composition is preferably not cooled, but, while it is still hot, the oils are added thereto, the temperature in fact being raised for that purpose to about 232° Fahrenheit.

The composition constituting the germicide and disinfectant basis is blended with the following oils in the following proportions, viz: composition basis (composed of cinnamein 5 and cresol) six and one-half ounces eucalyptol (from *Eucalyptus globulus*) eight ounces, oil origanum (from *Origanum vulgare*) eight ounces, methyl salicylate (pure oil winter-green) four ounces, oil sassafras (from *Sassafras officinalis*) six ounces. The oils may 10 first be mixed and the mixture added to the basis composition, or they may be added separately and in any order. After the oils have been well mixed with the primary or basis 15 cresol-cinnamein composition, at the temperature stated (232° Fahrenheit) which mixture can be effected in about five (5) minutes by gradual additions with active stirring, the whole is cooled and dissolved in alcohol (rectified spirits of say, ninety-four per cent.) in 20 proportion of one pint to the weights above given, and the composition is further thinned with spirits of turpentine sufficient to form one gallon.

25 The solution in alcohol and the further dilution with spirits of turpentine can be performed in the cold, that is at ordinary temperature, or with a slight elevation of temperature. The composition can be used then 30 by exposure in open vessels about the rooms or other places to be deprived of, or protected against germs, deodorized or disinfected; or the composition can be used in other suitable modes of employing germicides, deodorants, 35 or disinfectants. It can be preserved in bottles or other suitable packages until wanted for use. The oils impart not only their odoriferous properties to the compound but also their specific disinfectant properties.

40 In describing the best mode of making and compounding the composition, I have gone into details at some length, by way of example in order that those skilled in the art may the better be enabled to practice the invention; but it is not intended to restrict the in-

vention to these details, which may be varied without departing from the spirit of said invention. Thus the temperature, times, proportions of ingredients, and the degrees of 50 purity of the ingredients may be changed. Although it is most advantageous to employ the distillate from Peru balsam, or a similar balsamic product as the cinnamein constituent of the composition, other preparations of cinnamein, (benzyl cinnamate) naturally or 55 artificially prepared may be used and such use would be within the invention.

Chemists distinguish several cresols, as ortho, meta, and para cresol.

The term cresol as employed herein, while 60 particularly referring to commercial cresol or cresylic acid from coal tar, which contains the three isomers named, yet is intended also to cover any of the bodies or any mixtures of them whether obtained from coal tar or otherwise, as for example from the toluidines. 65

I claim as my invention or discovery—

1. The germicide, deodorant and disinfectant composition comprising cresol, and benzylc cinnamate, substantially as described. 70

2. The germicide, deodorant and disinfectant composition comprising cresol and benzylc cinnamate, in conjunction with menstruum of odorous oils compatible therewith: 75 such as eucalyptol, oil of origanum, oil of wintergreen, and oil of sassafras, substantially as described.

3. The germicide, deodorant and disinfectant composition comprising cresol and benzylc cinnamate, in conjunction with the odorous oily menstruum, and with the thinning 80 liquids such as alcohol and turpentine, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES DRUM LIPPINCOTT.

Witnesses:

GEORGE O. SHAFER,
EDW. M. CHENEY.