

Sterols, Ethanol and Cellulose Head List of the Week's Patents

Chemistry Workers Offer Various Processes To Improve Winning of Alcohol and Use Of Derivative in Gas Masks

From a Staff Correspondent

RICHMOND, Va., Nov. 17—Two developments in sterol chemistry, an improved method of obtaining ethanol from molasses, and several inventions in the field of cellulose are among the 523 patents listed as granted in the current issue of the Official Gazette of the United States Patent Office.

The science of sterol chemistry relates primarily to the isolation and utilization of sterols—the solid alcohols which are found in many vegetable and animal fats and oils.

Lester Yoder, Professor of Chemistry at Iowa State College, won No. 2,362,605 on a method of isolating and purifying sterols having a single reactive double bond in the hydrophenanthrene nucleus.

Among such sterols are the cholesterol in wool grease and nerve tissue fat and the phytosterol in pine oil and tall oil. The patent process comprises the reaction of the sterol in the sterol-containing substrate with oxalic acid to form the oxalic addition product and the subsequent separation of the addition product from the mixture. The substrate—wool grease, for instance—is dissolved in ethylene chloride or some other suitable hydrocarbon organic solvent and

the resulting solution is filtered. The sterols remain in the filtrate and when oxalic acid is added at the proper reaction temperature an addition product is formed as a crystalline precipitate which can be decomposed readily for the separation of pure sterol.

The patent was assigned to the Iowa State College Research Foundation.

Dr. Hans R. Rosenberg of Wilmington, Del., research chemist for E. I. du Pont de Nemours & Co., and Howard F. Carroll of Camden, N. J., received No. 2,362,932 on stable sterol derivatives described as a "new class of crystalline addition compounds." The substances are particularly useful in the production of valuable pro-vitamins D. The process covers the production of crystalline addition compounds of 7-hydroxy sterols with organic acids of low molecular weight, such as acetic and oxalic. The sterol is dissolved in acetic acid, or in ethyl acetate and oxalic acid, heated, filtered, and cooled, the addition compound crystallizes out. It is held that these compounds may be separated readily

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from their parent impurities and held in a "surprisingly stable" condition over long periods of storage.

The patent was assigned to the du Pont company.

Gets More Alcohol From Molasses

Another alcohol—this one the familiar ethanol, or ethyl alcohol—forms the basis of No. 2,362,451, awarded to Dr. Leo M. Christensen of Miller, Neb., research executive for the chemurgy project at the University of Nebraska.

The patent covers an improved method of obtaining ethanol from molasses through the addition of a certain bran mold to the sugar-containing solution, either before or after its fermentation with yeast. The patent adds a diastatic mold to the sugar solution in the ratio of five parts of mold to 100 parts by weight of sugar. It was found that this additional inoculation would increase the yield to 95 per cent. Ethanol has many industrial uses in addition to its wide employment as an intoxicating principle.

Dr. Christensen assigned one-third of his patent to Frank L. Robinson of Kearney, Neb., and one-third to John L. Ledbetter Jr. of Scarsdale, N. Y.

Three Cellulose Patents Listed

Among half a dozen patents on cellulose derivatives were three of particular interest—one for cellulose in gas masks and air conditioning equipment, another for cellulose in plastics, and the third for cellulose in paint.

Robert M. Boehm and Horace E. Hall of Laurel, Miss., won No. 2,362,463 on a method of producing carbon from the ligno-cellulose in wood, bamboo, cane, cornstalks, or

nut and seed hulks. The patented process is aimed at preparing from the cellulose a material which in turn may be carbonized in the absence of oxygen and activated. This base material is held neither to swell nor crack, and upon activation a dense, hard carbon of plastic properties is claimed. The patent was assigned to Masonite Corporation.

Dr. Emil H. Balz, Andrew W. Kassay and William D. Williams of Toledo, Ohio, won No. 2,362,528 on a process for obtaining a fine cellulose flour useful as a filler for synthetic resin compositions such as molding plastics, adhesives and insecticides. The patented process utilizes a tumbling impact mill where steel or porcelain balls exert a grinding action on the fibers. The "fines" are air-separated, after several hours in the mill, and coarser flour in the "tailings" from the separator is reground in a rotor impact mill and again air-separated. The patent was assigned to Libby-Owens-Ford Glass Company.

Unusual Gadgets of the Week

Among several unusual devices this week were:

A three-way bib (No. 2,362,465), by George Maiden Carner of Baltimore, Md., for "supporting, restraining and protecting a child when seated at a table."

A smoke signal device for daylight use at sea (No. 2,362,553), by Raymond C. Hitt of Seattle, Wash., featuring chemical means for producing smoke of high visibility.

An air-conditioned pressing iron (No. 2,362,591), by Alva T. Smith of Milwaukee, Wis., featuring an exhaust fan which blows away hot air created by an iron.

A dripless ice cream cone holder (No. 2,362,595), by Theodore E. Torrison of Robbinsdale, Minn., aimed at "receiving drippings from the cone and protecting the hand from such drippings."