

INVENTION

Patents of the Week

► A NEW CLASS of plastic products and the methods for making them have been awarded nine patents by the U. S. Patent Office. Granting of the patents lifted the secrecy veil that has surrounded development of the plastics by the Union Carbide Corporation.

The company will soon make a decision whether or not to go into full-scale production. If the decision is affirmative, the public will benefit through such diverse items as improved rubber pants for babies and better shower curtains.

Processes for the "polymerization of cyclic esters" won patents numbered 3,021,309 through 3,021,317 for Eugene F. Cox and Fritz Hostettler of Charleston, W. Va., who assigned rights to Union Carbide. The products can range from those of very low molecular weight of several hundred to those of the very high molecular weight of several hundred thousand, the highest known for plastics.

The low-molecular weight products are wax-like solids useful in the preparation of cosmetics, polishes and waxes, and also as thickening agents for lubricants. The polymers can be used to size materials made from wood fibers or as anti-static agents in treating fibrous materials.

The high-molecular weight products can be used to make such articles as brush handles, buttons, lamp bases and toys. They can also be used to prepare films.

One advantage of polymerizing lactones by the patented processes is that the required physical characteristics can be tailor-made to fit the desired applications and uses. The polymerized lactones can range from soft, rubbery polymers to very tough polymers.

A very high number of different catalysts can be used to speed up the polymerization of the lactones, and various methods can be used to make contact between the lactone and catalyst. The catalysts suggested include lithium, sodium, potassium, rubidium and cesium.

The polymerized lactones can also be used for plasticizers, as adhesives and for binding raw linoleum.

A method to make tetra-ethyl lead more effective for very high octane gasoline won three patents, numbered 3,021,203 through 3,021,205, rights to which were assigned to Texaco, Inc., New York. The inventors are Harry Chafetz of Poughkeepsie, George W. Eckert of Wappingers Falls, and Alfred Arkell of Fishkill, all in New York State.

The company is not now producing the motor fuel, and does not expect to do so until automobile engines require higher octanes than at present. The compounds giving the high octane ratings include acyloxy lactones, acyl aldoximes and acyloxy nitriles.

Motor fuels with these additives have been produced on a pilot plant scale, Dr. W. E. Kuhn, general manager of Texaco's research laboratories at Beacon, N. Y., told SCIENCE SERVICE by telephone. The question of future production hinges on the demand

for octane ratings higher than now available, he said.

Two antibiotics and the methods of making them won patent 3,021,259 for Walter D. Celmer of Garden City, N. Y., Kotaro Murai of Hicksville, N. Y., Ben A. Sobin of Manhasset, N. Y., and John B. Routin, Tenafly, N. J. They assigned rights to Chas. Pfizer & Co., Brooklyn, N. Y.

The antibiotics have been found effective against the organism causing crown gall in such fruit trees as apple, peach, pear, plum and apricot. They are known as PA-1033A and PA-1033B and are derived from the soil organism known as *Streptomyces griseofaciens*, which is related to the organisms from which the well-known streptomycin antibiotics are made.

A device by which golf and other sport shoes can be speedily converted for inside wear won patent No. 3,020,654 for Donald H. McCann of Tiverton, R. I. The flexible sole has small magnets placed within circular cup-like attachments that fasten over the spikes or calks of sport shoes.

A safety belt buckle for use in automobiles or airplanes was awarded patent No. 3,020,612. Inventor William H. Mecker of Rochester, N. Y., assigned patent rights to Hickok Manufacturing Co., Inc., also of Rochester, N. Y.

A ski trainer that can also serve as a game won patent No. 3,021,137 for Dale W. Palmer and William R. McTaggart of Flint, Mich. Snow and skiing conditions are simulated in order to allow a skier to obtain essentially the same feel he experiences on skis in different snow conditions.

• Science News Letter, 81:143 March 3, 1962

Questions

GEOCHEMISTRY—What is the class of compounds similar to chlorophyll that have been found in rocks 500,000,000 years old? p. 136.

MEDICINE—What is the leading drug used for treatment of tuberculosis? p. 132.

SPACE—What was the date of the first U. S. manned orbital space flight? p.131.

Photographs: Cover, and p. 131, National Aeronautics and Space Administration; p. 133 and p. 138, Science Service; p. 135, Armour Industrial Chemical Co.; p. 142, Allied Manufacturing Co.

Titanium's long life in contact with chemicals which are extremely corrosive to other materials makes it valuable to chemical processing companies for piping, valves, heat exchangers and processing equipment.

Most estimates of the dust's depth and density on the moon have been made by telescopic analysis of the moon's infrared radiation.

The two *X-chromosomes* of the human female are not exactly identical, evidence indicates.

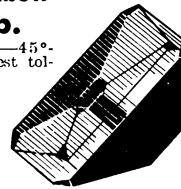
• Science News Letter, 81:143 March 10, 1962



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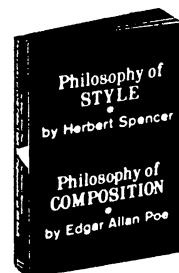
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