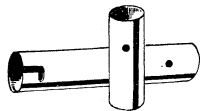


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INVENTIONS

Patents of the Week

➤ A METHOD for making electroluminescent lamps has been patented.

According to the patent, the phosphor, which glows, is embedded in a dielectric, or non-conducting, material. Such coatings are often applied by spraying. In the method now patented the coating is formed by allowing particles to settle from a temporary liquid suspension of fine particles of the phosphor and dielectric.

The method was developed by George H. Bouchard, Ipswich, Mass., and Joseph A. Dombrowski of Lynnfield Center, Mass., who assigned rights to patent No. 3,014,813 to Sylvania Electric Products, Inc.

The liquid used for the temporary suspension should be one in which the particles will not readily dissolve. They suggest powdered ceramic for the dielectric material.

They claim the method produces a uniform layer that is free from mottled portions. Another feature of their development is to deposit the coating in at least two layers. This reduces dielectric breakdown due to small pinholes. The coating is heated after each layer is formed.

A detector for infrared radiation won patent No. 3,014,369 for Leland S. Bohl of Schenectady, N. Y., John L. Gergen of Minneapolis, Minn., and Dr. Verner E. Suomi of Madison, Wis. They assigned rights to the U. S. Navy. Although this detector is for use with balloons, Dr. Suomi also devised the infrared radiation detector carried in the Tiros III satellite now circling the earth.

The total atmospheric infrared radiation of the earth and its atmosphere is one of the factors affecting the earth's heat balance, weather, and balloon and satellite behavior. Knowledge of this factor would be of great value in determining how much infrared radiation has influenced the development and duration of ice and tropical ages.

Such knowledge, the scientists pointed out, also could show to what extent man's activities, particularly the burning of fossil fuels that adds to the atmosphere's carbon dioxide content, can influence large-scale changes in climate in the future.

The device they developed consists of an outer shell, which is exposed to the atmosphere, and an inner shell, insulated from the outer shell. The outer shell is highly transparent to infrared radiation, the inner shell being highly absorbent. A temperature-sensitive variable electronic circuit, connected to the telemetering system, is placed within the inner shell.

One such device they constructed weighed less than half an ounce.

Patent No. 3,014,286 was awarded to Richard Z. Hricak of Mamaroneck, N. Y., for his novel guide to language study. Mr. Hricak points out that persons of one nationality, perhaps familiar with only one language, have great difficulty learning to pronounce clearly and understandably certain sounds in another language they are trying to learn. The difficulty is that some of the sounds of the unfamiliar language are

quite different from the sounds with which the person is familiar.

To help master this difficulty, Mr. Hricak devised a series of guides to be placed in the mouth so that the lips, teeth and tongue of the speaker are in the right position to form the sounds correctly. The guides are hollow so as not to interfere with the emission of sound, and marked so that the user can select the desired sound.

For a globe with inner lighting to simulate the sun's actual illumination, Alfred Ernst of Varese, Italy, won patent No. 3,014,287. The globe, made of translucent material, is constructed to show how the sun's light varies during the day and at different seasons of the year.

The light is placed in the center of the globe and so shielded that only half the globe is illuminated. Both the earth's daily rotation and yearly motion around the sun are simulated.

An underwater propulsion device for swimmers and skin divers was awarded patent No. 3,014,448, granted to Wilfred J. Fogarty of Hermosa Beach, Calif., Warner G. S. Miller and Richard Friedman of Los Angeles, and Harry L. Ford of La Puente, Calif. The device, which is strapped to the user's back, consists of two air tanks and a propeller.

• Science News Letter, 81:30 January 13, 1962

On the average, a pilot requires a total of about 12 seconds to perceive and interpret a visual warning and to take action.

Between 50% and 90% of all teen-agers have *acne*, the result of increased hormone output of certain endocrine glands.

An alarm-radio that sounds the initial warning and automatically tunes in to a station for instruction in case of enemy attack or other emergency has been developed.

Questions

MEDICINE—How many herb medicines studied by Indian scientists proved to be inactive? p. 23.

NUTRITION—Which two chemicals seem to protect against heart disease? p. 20.

SPACE—Why would a "captured" asteroid be important to scientists? p. 18.

Photographs: Cover, Humble Oil and Refining Company; p. 18, National Aeronautics and Space Administration; p. 19, Northrop Corporation; p. 21, Bell Telephone Laboratories; p. 23, General Electric Company; p. 26, Fremont Davis; p. 32, Fishmaster Mfg. Co.