

INVENTION

Patents of the Week

An irradiation process that changes the color of diamonds by rearranging their crystal structure has been patented to make yellow and brown stones more valuable.

► PUBLIC TASTE makes colorless or bluish diamonds more valuable than pale yellow or brown diamonds. To put yellow and brown stones in a higher price range, three inventors have patented an irradiation process that changes the color of diamonds by rearranging their crystal structure.

Patent No. 2,998,365 was issued to Jan F. H. Custers, Johannesburg, Union of South Africa, and Henry B. Dyer and Robert W. Ditchburn, both of Reading, England. Rights were assigned to Industrial Distributors Limited.

Brown or yellow diamonds get their natural color by absorbing excessive amounts of light towards the violet end of the visible spectrum, probably because of impurities acting as absorption centers. Irradiation, the inventors explain, reverses the process and makes the diamond absorb light toward the spectrum's opposite, or red, end.

Although complete decoloration to pure white is "all but impossible," the brown and yellow color can be diluted sufficiently to give a stone considerably more value than it had originally, they reported.

The method involves exposing the diamond to gamma rays, then heating it to about 842 degrees Fahrenheit to "fix" the altered color.

To add to the strength and shock resistance of plastic eyeglass frames, especially when roughly handled by children, John D. Baer of Attleboro, Mass., invented a frame with the upper "brow bar" reinforced with a curved strip of metal. The metal is embedded in the bar so that it is "concealed from the view of a casual observer when the glasses are in use." Rights to patent No. 2,997,917 were assigned to the Bishop Company, North Attleboro, Mass.

A two-wheeled cart for delivering logs to fireplaces won patent No. 2,998,151 for Irvine O. Sampson, Hood River, Ore. The cart has a pusher bar to shove the logs onto the fireplace andirons, and a curved, lever-operated "hold down finger" to keep them in place until the operator is ready to drop them. The finger mechanism can also be used to pull unburned logs out of the fireplace.

• Science News Letter, 80:197 September 16, 1961

TECHNOLOGY

Energy Sources Explored

► MORE THAN 500 representatives from 70 nations attended the United Nations Conference on New Sources of Energy in Rome.

The Conference examined practical ways of using the sun, the wind and underground steam for energy production, especially in underdeveloped countries lacking conventional fuel sources and advanced technologies. World energy consumption is expected to grow even more rapidly than world population, which may double by the year 2000.

Some 250 scientific papers, ranging in subject matter from harnessing underground geothermal energy for heating purposes to studies of suitable sites for windmills, were submitted.

The papers were summarized in 20 general reports by specialists from 13 countries—the United States, the Soviet Union, Spain, Algeria, India, Japan, Israel, France, England, the German Federal Republic, Iceland, Mexico and New Zealand. These reports served as the basis for discussions at general sessions. Two broad groupings for later technical sessions involved the use of solar wind and geothermal energy for purposes of power production, and the use of solar energy alone for other purposes such as cooking, heating, producing fresh water from salt water, and industrial processing.

Among the United States delegates was

Harry E. Thomason, an Army Signal Corps patent advisor who devised a system for heating his Washington, D. C., home by using the sun's energy. He was selected by the National Science Foundation to report to the Conference on his project.

Mr. Thomason's system, built for \$2,500 as part of the cost of a \$13,000 three-bedroom home, employs a solar heat trap 28 feet long and 22 feet high on the back of the house. Heat stored on sunny days is used during extended periods of cloudy weather. The system is also used for summer air conditioning. Surplus heat warms a 2,000-gallon outdoor swimming pool.

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BACTERIOLOGY

New Salmonella Species Has Been Isolated

► A NEW SPECIES of *Salmonella*, a genus of bacteria causing acute intestinal inflammations, has been isolated from cattle by scientists at the Uttar Pradesh College of Veterinary Science and Animal Husbandry, Mathura, India. It has been named *Salmonella mathura* and is being investigated to determine characteristics. Examination of 2,970 domestic animals also disclosed 16 known *Salmonella* types, including several believed previously encountered only in humans, V. K. Sharma and C. M. Singh report in *Nature*, 191:622, 1961.

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