INVENTION

Current U.S. Patents

Satellites can be spotted by all sky-watchers with the aid of a new device that helps locate and follow the path of the orbiting vehicles

➤ AN APPARATUS that can be attached to world globes to help any person locate an earth-circling satellite as it crosses the sky earned patent 3,241,252 from the U.S. Patent Office for George A. Baalson of Tower, Minn.

To help determine when a satellite will be visible, Mr. Baalson's apparatus includes a sun pointer that indicates, when it is used with a properly oriented world globe, whether or not the satellite will be in sunlight.

The attachments also include devices that permit an observer to predict the satellite's elevation and azimuth in the sky during the entire itme of visual passage. The apparatus is suitable for classroom instruction.

It can also be used by an observer to compute several of the orbital elements of an unknown orbiting object after visual observations involving at least two separate fixes of bearing and elevation.

High-Temperature Grease

The composition of a high-temperature grease and methods of preparing similar materials earned eight patents.

The grease has a silicon base and acts as a lubricant at temperatures up to at least 450 degrees F. It is thickened with the dichlorobenzidine pigments used commercially in coloring rubber compounds.

Chemically, the grease compound consists of a chlorophenyl silicone polymer base thickened not only with a dichlorobenzidine but also with finely divided pyrogenic silicone dioxide.

The composition patent was awarded to Max J. Wisotsky, University Park, Pa., and Norman R. Odell, Wappingers Falls, N.Y. The methods of manufacture were granted patents 3,242,082 through 3,242,088. All rights were assigned to Texaco Inc., New York.

New Use for Old Product

A new use for a product that has been around for 62 years has been found by Robert Martinelli of the University of Pittsburgh. The old product is called Black Carrara, an opaque glass generally used as a building material.

Mr. Martinelli, a pathologist, has perfected a method of using this glass to slice the very thin sections of tissue necessary for study with electronic microscopes. Knives for this purpose are normally formed by breaking ordinary glass to expose a sharp edge.

The keen cutting edge of Black Carrara, which is manufactured by Pittsburgh Plate Glass Company, surpasses that of other glasses, including other colors of Carrara. It cuts thinner sections of tissue without distortion, and does not leave knife or score marks on the specimen.

The cutting edge is not adversely affected by atmospheric conditions or by water, thus making possible a prefabricated knife, thereby relieving the pathologist from breaking glass to form his own knives. Mr. Martinelli was awarded patent 3,225,639 for his invention.

Other Interesting Patents

A commercial method now in use for measuring the changes in what physicists call paramagnetic resonance to detect oil in underground foundations earned patent 3,242,422 for Dr. Nicolaas Bloembergen of Harvard University. The method is a way of distinguishing between porous and nonporous materials through which a borehole has been drilled.

Also now being manufactured commercially is an instrument using the method of producing laser light patented by Jameson D. Rigden of New Providence, N.J., and Alan D. White of Berkeley Heights, N.J. They devised a way of achieving laser light by the action of helium and neon, producing a beam at 6328 Angstroms, which is in the visible red. Their helium-neon optical maser, which received patent 3,242,439, is believed to be the first gas device to operate in the visible portion of the spectrum.

An infrared aid for tracking fast-moving objects by radar, developed under contract with the National Aeronautics and Space Administration, was granted patent 3,242,485. Robert W. Astheimer of Westport, Conn., assigned patent rights to Barnes Engineering Company, Stamford, Conn.

• Science News, 89:255 April 9, 1966

ASTRONOMY

New Kind of Supernova Seen as Radio Source

➤ THE REMNANTS of a kind of supernova could be responsible for a strong source of radio waves in the constellation of Cassiopeia.

Dr. R. Minkowski of the University of California, Berkeley, reported that the information now available on this radio source and its visible structure is "consistent" with an "unusual supernova."

Two types of supernovas have previously been recognized. Those known as "type 1" rise to a brightness about 100 million times that of the sun, then drop rapidly in luminosity during the next 100 days. Those called "type 2," although attaining a brilliance only slightly less than type 1, do not decrease in brightness as rapidly.

Dr. Minkowski reported in Nature, 209:1339, 1966, that the Cassiopeia source may be a "type 3" supernova. Existence of a third type of supernova was first suggested by Dr. Fritz Zwicky of California Institute of Technology, Pasadena, from his studies of a supernova in the galaxy known as NGC 4303.

Supernovas of type 3 have light curves like those of type 2, but the decrease in light is much slower.

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