

INVENTION

Patents of the Week

► A NEW BREAKWATER structure protects harbors and beaches from ocean waves by a perforated sea wall. The waves lose their energy in flowing through the holes into a covered chamber and then back again, instead of breaking up against the wall and becoming stronger.

The U.S. Patent Office issued patent 3,118,282 for the breakwater which has been licensed by Canada's National Research Council to construction companies all over the world. It is made of individual hollow caisson units that are joined together after they are sunk in place.

Each unit is a totally enclosed box with an interior wall that divides the chamber into which the waves flow from a chamber filled with rock.

Invented by Gerard E. Jarlan, a hydraulic engineer with the National Research Council's Hydraulic Laboratory in Ottawa, one perforated breakwater has operated successfully at Baie Comeau, Quebec, on the north shore of the St. Lawrence where the river runs into the Gulf.

This breakwater is about 1,000 feet long and is an extension of a conventional breakwater. The structure is about 60 feet wide and railroad tracks for loading and unloading ships run on top of the breakwater which also serves as a dock.

The success of the perforated breakwater was proved during a storm, James Johnson of Canadian Patents and Development Ltd., Ottawa, told SCIENCE SERVICE, when ocean waves knocked over a boxcar on the conventional breakwater and left a stack of lumber on the perforated breakwater untouched.

Anti-Tumor Fungus

Part of a common mushroom-like fungus inhibits the growth of tumors in mice, but not in humans.

When the patent was filed four years ago, part of the fruiting body of the giant puffball, *Calvatia maxima*, a common fungus on lawns in meadows and woods, was successful in stopping the growth in mice of Sarcoma 180, a malignant tumor, tests at the Sloan-Kettering Institute for Cancer Research, New York, showed.

Since that time, however, the fungus has been found to be "not actively therapeutic or effective clinically," a Sloan-Kettering official told SCIENCE SERVICE. Patent 3,118,811 was issued to Eugene H. Lucas, late of East Lansing, Mich., and Richard U. Byerum, also of East Lansing.

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Detecting Railroad Hotboxes

An improved infrared detector operates automatically to detect if any of the journal boxes that lubricate the axles of railroad freight cars are overheated.

As the wheels of the car roll past the device, it measures the difference in radiated energy from the upper and lower regions of the box on each wheel.

If there is a difference of 20 degrees Fahrenheit in favor of the upper region, the box is operating normally, but if the device senses a "hotbox," it activates a paint spray unit which marks the journal for further inspection down the tracks.

Charles G. Kaehms, Oakland, Calif., earned patent 3,119,017 for his device that may help railroad engineers prevent accidents due to hotboxes.

Decoy for Guided Missiles

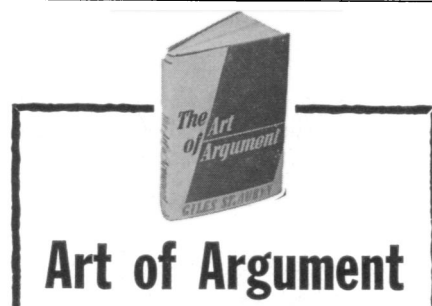
A rocket-shaped device lures a guided missile away from its target by emitting infrared radiations, similar to those emitted by an aircraft's radar or radio transmitter and exhaust. Fred H. Rohr of San Diego, Calif., won patent 3,118,638 for his decoy that remains suspended in the air by a balloon and radiates in all directions.

Other Significant Patents

A submersible nuclear power unit, capable of operating a bathyscaphe and other underwater equipment at great ocean depths—patent 3,118,818 to Donald T. Bray, La Jolla, Calif., assigned to General Dynamics Corporation, New York.

A timekeeping device controlled by the rising and setting of the sun—patent 3,118,274 to Katsumi Takeda and Akiteru Kamimoto, both of Fukuyama, Japan; assigned to Mitsubishi Denki Kabushiki Kaisha, a Japanese corporation in Tokyo.

• Science News Letter, 85:93 Feb. 8, 1964



By Giles St. Aubyn

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