

INVENTION

Patents of the Week

A launch system used for firing the submarine Polaris missile has been patented. A contact lens that allows normal flow of eye fluid was also invented.

► A MISSILE LAUNCH system used to fire the U.S. Navy's Polaris missile from a submarine has been patented.

Moses Siegel and Allan Honigman of the U.S. Naval Engineering Air Facility, Philadelphia, received patent No. 2,989,899 for a launching system that is presently being used in some submarines, probably with some modification, to fire the deadly missile. The Polaris is expected to play a large role in the retaliation of the United States in case of nuclear attack.

The missile is shot from a firing tube with the tremendous force generated by compressed air. The tube quickly floods "with water, balancing the missile weight of the unfired launchers," permitting the submarine to leave the area quickly.

Each launcher is a self-sufficient unit, housing the firing tube, power plant and control system. All launching units are completely loaded at the base, "avoiding the need of missile handling equipment aboard the submarine," the patent stated.

Although the U.S. Navy will neither officially confirm nor deny the association of the patent with the Polaris program, evidence strongly indicates it is currently being used.

A contact lens, claimed not to interrupt the normal flow of eye fluid was patented by Stanley Gordon, Brighton, N.Y., who assigned rights of patent No. 2,989,894 to Contact Lens Guild, Inc., Rochester, N.Y. Tiny channels etched on the inside of the lens "provide an ample and continuous distribution of eye fluid without altering the surface of the cornea," the patent stated.

A process for treating common table salt so that it has "little or no caking tendencies" when stored was patented by three Englishmen who awarded rights of patent No. 2,990,246 to Imperial Chemical Industries Limited, London. Salt containing the chemical nitrilotriacetamide "did not cake when stored under various unfavorable atmospheric conditions," whereas a similar batch without the chemical, stored under the same conditions, "formed hard lumps," the patent stated. Thomas R. Scott, Northwich, Norman G. Bromby, Woodford, and Coningsby Allday, Sandiway, England, won the patent.

Dr. Glenn T. Seaborg, chairman of the Atomic Energy Commission and co-discoverer of several heavy elements, received patent No. 2,990,242 for a process separating plutonium compounds from a nitric acid solution by adding ammonium nitrate and ethyl sulfide. Rights were assigned to the Atomic Energy Commission. The plutonium was created by bombarding uranium with neutrons in a nuclear reactor.

A footbath for decontaminating radioactive shoes or rubbers of persons working

with dangerous radiation was patented by Robert L. Rod, Roslyn, N.Y., who assigned rights of patent No. 2,989,965 to Acoustica Associates, Inc., Mineola, Long Island, N.Y. High-frequency sound vibrates the liquid in the bath when a person steps on an elevated platform in the tub, providing a decontaminating or cleansing action.

• Science News Letter, 80:45 July 15, 1961

TECHNOLOGY

Ceramics Proved Best For Power Generators

► CERAMICS HAVE PROVED to be the best material for checking the white-hot stream of gases in a new kind of electric power generators.

Westinghouse Electric Corporation scientists, Pittsburgh, Pa., believe ceramics will be superior to iron and steel for magneto-hydrodynamic (MHD) electric power generators.

They found that ceramics, relatives of those widely used for making bricks, tile and pottery, could be used to line the walls of the MHD generators and to project into the stream of gas that provides the electric power.

Magneto-hydrodynamic is one of the newest methods for direct generation of electricity without using a steam turbine or rotating electric generator. Future MHD generators are expected to be more efficient, smaller in size and less in cost than systems used today.

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ASTRONOMY

Moon Used to Pinpoint Space Radio Source

► A BRITISH astronomer has measured the position of a heavenly source of radio waves from space with the help of the moon, believed the most accurate such pinpointing yet made.

So far only a small number of radio sources have been seen in photographs. Most are known only from their radio waves, received here on earth.

Dr. C. Hazard of the University of Manchester radio astronomy laboratories used the 250-foot radio telescope at Jodrell

ASTRONOMY

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Bank to track the radio source, 3C 212, during a lunar eclipse.

As the moon passed in front of the radio source, a sharp drop occurred in the radio waves being received. When the moon had passed all the way across the radio source, the waves came in full power again, Dr. Hazard reports in *Nature*, 191:58, 1961.

The radio source is located between the constellations Taurus, the bull, and Virgo, the virgin, about 30 degrees south of the zenith. Its position was calculated from the times of disappearance and reappearance of the radio source.

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PUBLIC SAFETY

Blast Shelter Designed For Farm Families

► A SHELL-SHAPED "do it yourself" bomb shelter, designed to accommodate as many as nine persons for two weeks, is being built at Kansas State University, Manhattan, Kans.

Proposed for construction and use by farm families, the blast and fallout shelter will be a sort of underground igloo with concrete walls eight inches thick. Protection is believed adequate against a 20-kiloton blast if the shelter is at least 2,000 feet from the detonation point.

Builders first dig a trench 13 feet in diameter and three feet deep, placing the dirt in a rounded pile in the center. The concrete shell is laid on the dirt and allowed to set. The dirt is then removed from inside and thrown on top of the structure. A piece of culvert pipe can be used as an entrance.

The shelter provides six feet of headroom in a space about six-by-six. The demonstration model is being built by the University's departments of nuclear and civil engineering under contract from the Office of Civil and Defense Mobilization. It will be fully equipped and studied for shielding effects and environmental problems.

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