

INVENTION

Current U.S. Patents

► A CHEAP BUT ACCURATE method of detecting where a nuclear bomb has been exploded and how potent it was, earned a patent from the U.S. Patent Office.

Only three of the devices essential to the method need survive the holocaust of a bomb blast in order for officials to tell the location of the explosion and how much devastation the burst caused.

This means that if New York City were the target, for instance, and some 200 of the devices were set up around the outskirts of the city, civil defense officials could tell from only three of them where to send fire fighting equipment, ambulances and rescue crews.

The device can be manufactured for less than \$20, "probably considerably less," its inventor told SCIENCE SERVICE. Daniel W. Furman said his company, Dunlap and Associates, Inc., Stamford, Conn., is planning further development of the device, which consists essentially of an especially constructed sphere that reacts to temperature and pressure changes.

The sphere is mounted on a long narrow rod in such a way that the shadow it casts because of the blast tells the direction, elevation and temperature of the explosion.

Mr. Furman said the detection system is intended to give information about a nuclear attack that would not have been detected by radar, such as one launched by missile from a submarine.

He recommends a rooftop for installing the device, since this would be readily accessible to survivors who would then take the record to a fallout shelter so that the information could be transmitted to a central command headquarters for prompt evaluation.

Rights to the "nuclear blast and overpressure detection and recording system" were assigned by Mr. Furman to Dunlap and Associates, Inc., a firm specializing in the field of operations research. The system was granted patent 3,226,546.

Other Interesting Patents

Using the troposphere for bouncing radio signals transmitted on several different frequencies at the same time, earned patent 3,226,644 for McKay Goode and MacDonald J. Wiggins of Orange County, Fla., who assigned rights to Martin-Marietta Corporation, Middle River, Md.

A method of making a vaccine to protect swine from hog cholera was granted patent 3,226,296. The late William H. Boynton of Berkeley, Calif., through his widow assigned rights to Cutter Laboratories, Inc., also of Berkeley.

To measure and detect radiation effects when a patient's head is being treated for cancer by radioactive materials placed deep within brain tissue, Majic S. Potsaid of Hanover, Mass., has developed a dosimeter that visually indicates in three dimensions the distribution of radiation absorbed. He as-

signed rights to patent 3,226,545 to The Massachusetts General Hospital, Boston.

A film assembly for color photographs and a 35mm camera for holding it earned patents 3,225,671 and 3,225,670 for Melvin Friedman of Watertown, Mass., the latter patent being shared with Milton S. Dietz, of Lexington. Rights to both patents were assigned to Polaroid Corporation, Cambridge, Mass.

A new method for making spherical globes that have earth's land masses in relief and are also suitably colored to show the various countries, as well as printed with the names of rivers, mountains and bodies of water, was granted patent 3,225,461. Charles H. Snyder of Philadelphia, Pa., assigned rights to Aero Service Incorporated. The halves of the globe, formed of thermoplastic material, are made separately, then molded together.

To help scientists checking up on nuclear reactions at one of the world's two largest atom smashers, the synchrotron at Brookhaven National Laboratory that accelerates protons to 33 billion electron volts, two New York scientists have developed an improved method for illuminating the bubble chamber in which the reactions are detected. Seymour Rosin of Massapequa Park, N.Y., and Robert B. Palmer of Shoreham, N.Y., assigned rights to patent 3,226,539 to the Government through the U.S. Atomic Energy Commission.

• Science News Letter, 89:45 January 15, 1966

ZOOLOGY

Shrimp Seem to Prevent Own Population Boom

► WHILE THE POPULATION explosion threatens man, a tiny shrimp appears to have the matter well in hand.

Observations of a species of opossum shrimp, *Metamysidopsis elongata*, at the California Current Resources Laboratory have shown that when the male population grew larger, the frequency of pregnancy among adult females lessened.

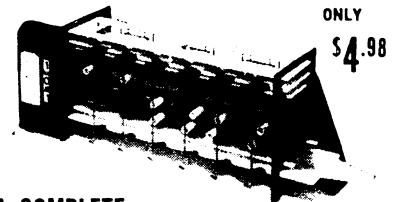
Biologist Dr. Robert Clutter took a close look at the shrimps' reproductive processes in the laboratory at the Fishery-Oceanography Center, Bureau of Commercial Fisheries, La Jolla. The investigation uncovered two clues: the female possesses a chemical agent that acts to direct the male to her when she is fertile but, furthermore, even though she may be in a breeding condition (carrying yolk-invested eggs), this chemical agent is not always present.

The result is a drain of reproductive energy and an adverse effect on generation length.

Dr. Clutter believes that this phenomenon may be due to the tiny animal's physiological response to increased population density, possibly a negative reaction to overcrowding.

• Science News Letter, 89:45 January 15, 1966

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