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INVENTION

Patents of the Week

An electronic pacemaker for restarting stopped hearts through the use of electrodes, now used all over the world, received a patent—By Elizabeth Hall

► AN ELECTRONIC PACEMAKER used all over the world today to restart stopped hearts received patent 3,109,430 from the U.S. Patent Office. The device was made available to President Eisenhower following his heart attack.

Known commercially as the Cardiac Pacer, it was invented by Dr. Morris Tischler, president of Electronic Aids, Inc., Baltimore, Md.

The tiny, lightweight device is powered by batteries as a transistor radio is. The electrodes send regularly spaced electrical pulses to stimulate the cardiac nerves and revive a faltering heart. The device is valuable in either open-heart surgery or closed-chest treatment.

"I had a patient in Florida who had had as many as 50 heart attacks," Dr. Tischler told SCIENCE SERVICE. "He keeps the device near him at all times now and when he collapses, the device is just turned on to revive the heart."

Dr. Tischler has another patent pending for a Nerve-Finder that is now being used by surgeons in the United States, Canada and Europe. This device is used to isolate the nerves within muscles while surgeons are performing an operation, thus preventing the accidental cutting of a nerve.

In this compact device, the surgeon moves the electrodes in the area of the incision. When nerve tissues are electrically stimulated, they contract.

If the operation is to remove a tumor from a patient's face, for example, the surgeon watches the nose, lips, and eyelids of the patient. As the probe comes in contact with a nerve, the area contracts violently. The surgeon follows a pattern of stimulate, cut, stimulate, cut, until the operation is completed, Dr. Tischler said.

As with the pacemaker, no electrical outlet is required. The Nerve-Finder is also manufactured by Electronic Aids, Inc.

Gas Stream Filter

A filter device for collecting particles in the air at ultrasonic speeds earned patent 3,109,724 for two California inventors.

Richard A. Heckman and Henry F. Warner of Livermore developed the filter for use during nuclear weapons tests. Attached to the nose cone of a rocket or to an aircraft, the filter collects the atomic debris following an explosion.

The filter consists of special cellulose fibers coated with a molten and adhesive substance. During preliminary tests in a Mach 2 wind tunnel air screen, the filter collected better than 99% of the sand particles. Rights were assigned to the U.S. Atomic Energy Commission.

Other Significant Patents

Other patents included:

A golf cap with a pendulum attached for which Ed Comitz of Tucson, Ariz., was awarded patent 3,109,654. Each time the golfer raises his head while swinging or putting, the pendulum strikes him in the face to help him correct his error.

A method of keeping a pond or lake from freezing by a pumping unit on the bottom that causes the warm air layer near the bottom to continually rise to the top in bubbles. George E. Gross of Oak Park, Ill., assigned rights to patent 3,109,288 to Perma-Pier, Inc., of Skokie, Ill.

A celestial computer that is held in a pilot's hand to solve navigation problems. William L. Polhemus and Lewis M. Bostick, both of Fort Worth, Texas, received patent 3,109,588 for their invention.

An auger-type grain probe that is inserted by hand into a grain bin and rotated downward, drawing samples of grain at all levels into the cylindrical chamber for examination. Thomas H. Papworth of New Orleans was awarded patent 3,109,307 for his invention.

A fast, safe method for launching and quickly recovering lifeboats in rough seas, for which Marvin O. Miller of El Cerrito, Calif., received patent 3,109,185. Patent rights were assigned to the U.S. Navy.

• Science News Letter, 84:350 Nov. 30, 1963

Do You Know?

Turquoise *mining* antedates any other kind in the U.S.

The *invertebrates*, although deprived of a solid structure, left enough imprints throughout the ages to allow the paleontologists to reconstruct a substantial part of their biological and evolutionary past.

The Atomic Energy Commission is selling *cobalt-60* in large quantities at the lowest prices possible to encourage wider use of this radioisotope for industrial process radiation and for food pasteurization.

The word *turquoise* comes from the French meaning "Turkish stone," probably because it was introduced into Europe via Turkey.

A *boron fiber* that is stronger than steel, lighter than aluminum, five times stiffer than glass fiber and has a melting point of more than 3,600 degrees Fahrenheit has been developed.

• Science News Letter, 84:350 Nov. 30, 1963