



GIANT SCOREBOARD—Rapidly changing information as calculated by a computer is shown on the scoreboard used at rocket launches from Cape Kennedy, Fla.

INVENTION

Patents of the Week

Rapidly changing rocket launch data as calculated by a computer can be instantaneously displayed on a giant scoreboard with a newly patented device—By Ann Ewing

► A DEVICE used in the scoreboard for both manned and unmanned space flights was granted a patent by the U.S. Patent Office.

The device displays rapidly changing information as it is calculated by a computer. On the giant scoreboard used for launches at Cape Kennedy, Fla., it shows the time, the orbit number, the elapsed time in orbit, and the time to retrofire.

Graydon A. Phlieger Jr., Cocoa, Fla., invented the "character-indicating display device." He assigned rights to patent 3,137,082 to the Government through the Administrator of the National Aeronautics and Space Administration.

During every major rocket launch, manned or unmanned, about 12 NASA

flight controllers watch dozens of consoles and wall displays in the control center, which is the control point for all information concerning the flight. The information is transmitted from Cape Kennedy to Goddard Space Flight Center, Greenbelt, Md., where computers compare the spacecraft's path with a predetermined one, and results are then flashed back to Cape Kennedy.

Operation of the system is so fast that the information is received, transmitted to Greenbelt, analyzed and re-transmitted as events are actually occurring.

Mr. Phlieger's device for showing the computer's calculations is self-cooled, easily made and rugged in construction. It includes a panel, lighted incandescent bulbs, that can form many digits automatically in any desired order.

The space scoreboard, which includes a giant map of the world showing orbital paths, became familiar to millions during the Mercury manned space flights, since it was often shown on television.

Improved Optical Maser

An improved optical maser, or laser, earned patent 3,137,827 for Dr. John R. Pierce of Bell Telephone Laboratories, New York, to which rights were assigned.

Light from lasers is thousands of times more intense than from any other source and it is also more nearly of essentially a single wavelength.

Dr. Pierce's improvement consists of using at least one concave mirror instead of two flat ones to reflect the light generated in a cavity by maser action.

System for Dispersing 'Chaff'

A system for dispersing "chaff," metal foil thrown out of airplanes to confuse

radar operators, that covers the plane carrying it as well as following planes, is now in the public domain after eight years on the secret list.

Francis M. Johnson of Dayton, Ohio, assigned rights to patent 3,137,231, to the Government through the Secretary of the Air Force.

His invention consists of sending rockets containing the "chaff" into the air space ahead of the airplane, then detonating them with a timed charge initiated by the burning of the rocket propellant. This scatters the chaff over a large area ahead of the plane so that radar sets will track the chaff material rather than the airplanes.

Electronic Stethoscope

Advanced electronic techniques developed to help send a man to the moon are helping doctors listen to specific sounds of a patient's heartbeat.

An electronic stethoscope, invented by two avionics engineers at the Bell Aerospace Corporation, Buffalo, N. Y., filters out unwanted heart noises and amplifies particular sounds the doctor wishes to hear. A cardiologist foresees one possible use in detecting congenital heart disease in children when loud heart murmurs interfere with conventional stethoscopes.

Invented by Donald Dymski of Eggertsville, N. Y., and Joseph Solomon of Lockport, N. Y., the stethoscope consists of a microphone attached to a tiny, lightweight black box.

The device can be hooked up simultaneously to earphones for listening to the heart, an oscilloscope that "pictures" the heartbeat, and an electrocardiograph for making a permanent record. The inventors assigned rights to patent 3,132,208 to Bell Aerospace Corporation.

Other Significant Patents

A portable unit for converting heat directly to electricity, using conventional fuels such as leaded gasoline. North American Aviation, Inc., was assigned rights to patent 3,137,798 by Richard C. Noyes of Van Nuys, Calif., Bernard L. Hoffman of Canoga Park, Calif., and Melvyn Lane Henkin of Los Angeles.

A technique for making models showing terrain in three-dimensional relief. Eugene E. Zang of Washington, D. C., assigned rights to patent 3,137,080 to the Government through the Secretary of the Interior.

A method for air conditioning an automobile seat. Frank Karner of East Riverdale, Md., was awarded patent 3,137,523.

A system for flying a group of radar-guided homing missiles simultaneously with just one illumination radar on the launching aircraft. The method was on the secret list for nine years. Frederick C. Alpers of Riverside, Calif., assigned rights to patent 3,137,850 to the Government through the Secretary of the Navy.

An attachment for a tractor to shake walnut or other crop-bearing trees for harvesting. Patent 3,137,116 was granted to James H. Besser and Donald F. Isaacson, both of San Juan Bautista, Calif.

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