

## INVENTION

# Patents of the Week

A solar engine that has the sun as its source of energy and can be used to power spacecraft or ancient water wheel has earned a patent—By Elizabeth Hall

► A NEW SOLAR engine harnesses the radiant energy of the sun to power spacecraft, run refrigerators and operate water pumps in remote areas where no electricity is available. The ancient water wheel operated by human power is still used in some parts of the world and could be replaced by this engine.

These are but a few practical applications of the device for which the U.S. Patent Office issued patent 3,117,414. Adaptation of this invention makes the Stirling cycle engine and other energy conversion cycle engines practical for space power systems.

The new engine's key feature is a transparent "window" of quartz through which the sun's radiant energy can pass directly into the engine. In other heat engines, a closed, heavy metal surface has interfered with the transfer of heat into the engine.

The solar energy which passes into the engine through the quartz, which may be part of the cylinder head, can be caused to impinge upon a secondary energy absorbing layer of platinum mesh coated with carbon black for greater efficiency.

The engine was developed by Dr. Farrington Daniels, professor emeritus of chemistry at the University of Wisconsin, Madison, and head of their Solar Energy Laboratory, and Dr. Theodor Finkelstein of the Battelle Memorial Institute, Columbus, Ohio, where a small model of the solar engine is in operation.

Rights to the patent were assigned to the Wisconsin Alumni Research Foundation, Madison, which plans to license the patent.

## Deep Sea Densimeter

A new device measures the density of seawater at great depths without bringing up samples of the water to be measured.

Firth Pierce of China Lake, Calif., won patent 3,117,454 for the instrument, a deep sea densimeter. The device is first balanced or calibrated in pure water and a pointer is registered at zero on an index. It is then dropped down into the sea.

The heavier density of the seawater, depending on how much salt is present, unbalances the system, and the pointer moves away from zero. The number of rotations necessary to restore the pointer to zero measures the density of the water, and the information is electrically relayed to the surface instruments.

Rights to the patent were assigned to the U.S. Navy.

## Other Significant Patents

A system for washing vehicle headlights, similar to a windshield washing system—patent 3,117,727 to Samuel C. Pollock, Rochester, Mich., and John W. Yee, Roseville, Mich.; assigned to General Motors Corporation, Detroit.

A new variety of grapevine similar to the Tokay grapevine but having smaller, seedless berries—plant patent 2,340 to Walter A. Perrin, Lodi, Calif.

A mouth thermometer encased in a pacifier for children who tend to bite the thermometer while their temperature is being taken—patent 3,117,450 to Thomas E. Hoy, Winnsboro, S. C.

A beard steamer that cuts a man's shaving time by softening his beard—patent 3,117,576 to Raymond L. Propst, Astoria, Oreg.

A child's tricycle that has been turned into a toy helicopter, complete with rotating propeller and enclosed cockpit—patent 3,117,798 to Jack E. Young, Kirkland, Wash.

• Science News Letter, 85:77 Feb. 1, 1964

## LUMINOUS STAR FINDER

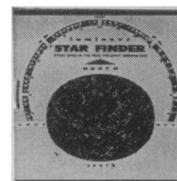
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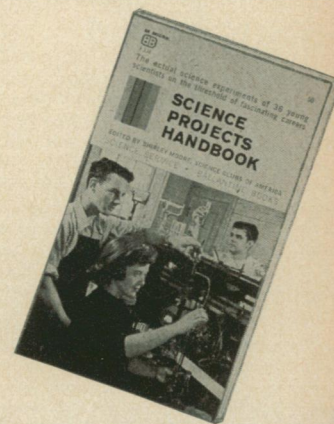
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