

Patents of the Week

Electrically powered rocket for use by space vehicle when in space wins patent, as does a hydrofoil for surface water vessels traveling at more than 100 miles an hour.

► AN ELECTRICALLY powered rocket for use after the vehicle is boosted into space has been patented.

The rocket features an electrically powered heat exchanger that is heated by resistance to bring the hydrogen gas used for propulsion to a temperature of about 5,000 degrees Fahrenheit. As envisioned in this patent, such a rocket would be able to operate at least 60 days on missions between the earth and the moon without any major breakdowns.

After the hydrogen is admitted to the rocket chamber, it passes through the electrically powered heat exchanger before being ejected through a conventional nozzle at a very high velocity.

The propulsion device would be useful for altitude control for a vehicle already in space or as the final stage for a communication satellite, according to patent No. 3,016,693. This was awarded to John R. Jack of North Olmsted, Ohio, and Wolfgang E. Moeckel of Bay Village, Ohio, who assigned rights to the Government as represented by the National Aeronautics and Space Administration.

Also assigned to the Government through NASA was patent No. 3,016,863, won by Virgil E. Johnson Jr. of Hampton, Va., for a hydrofoil for use with surface water vessels traveling at speeds of more than 100 miles an hour. As devised by Mr. Johnson, the hydrofoil would have a wedge-shaped cross section, the top surface being convex and the bottom surface being linear-concave.

The leading edge is rounded and the trailing edge is blunt. Such a configuration eliminates the production of a vapor cavity, a difficulty with many hydrofoils now available. Mr. Johnson suggests that the hydrofoil be made of stainless steel, which can withstand the corrosion-causing effects of water better than most other materials.

Dr. Jan A. Rajchman of Princeton, N. J., was awarded patent No. 3,017,614 for a magnetic storage device to be used with electronic computers. He assigned rights to Radio Corporation of America. The patent provides for combining 10,000 of the tiny, ring-shaped magnetic cores into a netting of woven wires. Current flowing through the wires magnetizes the tiny rings so that 10,000 bits of information can be stored in an extremely short time.

The invention gives computers a magnetic memory with a high-speed memory of large capacity, capable of storing more information than was previously practical.

Rights to two patents were assigned to Eastman Kodak Company of Rochester, N. Y. For an indicator showing how many feet of film are left to be exposed, Otto

Wittel and John L. Salzer of Rochester won patent No. 3,016,620.

They claim the indicator is of extremely simple design and construction, thoroughly reliable and efficient in operation and economical to manufacture. Since it is operated only when necessary and has very few parts, cost of the indicator and need for maintenance and repair are greatly reduced.

Leonard W. Tregillus and Arthur A. Rasch, also of Rochester, were awarded patent No. 3,017,270 for their method of increasing the speed and density of photographic reproductions made by the silver halide diffusion transfer process. The addition of certain quaternary ammonium and ternary sulfonium salts to the developer changes the tone of the positive image from a warm brown to a neutral black color, they found, among other unexpected improvements.

For smokers who stand around at meetings or parties wondering where to put their cigarettes out, William A. Rooney of Wilmette, Ill., has devised an answer—a disposable ash tray packet that was given patent No. 3,017,063. The small ash trays, which can be coated with metallic foil, come as a flat envelope so that they may be easily carried in a pocket or purse and still be readily accessible for use whenever and wherever needed.

To help train large groups of students to use a slide rule, Francis Low Woolley of Port Washington, N. Y., has devised a transparent slide rule. He was awarded patent No. 3,016,628 for his invention, rights to which were assigned to the Government as represented by the U.S. Navy.

The transparent slide rule contains photographically reproduced scales of the logarithms and anti-logarithms normally found on the front and reversed sides of a conventional slide rule. The image of this slide rule is projected in magnified form on a classroom screen.

• Science News Letter, 81:79 February 3, 1962

Science Quiz Answers

To check yourself on the Quiz, p. 70, score two points for each correct answer in Parts A and B and one point for each correct answer in Part C.

PART A: 10-1; 11-4; 12-2; 13-1; 14-3; 15-1; 16-1; 17-2; 18-2; 19-2.

PART B: Section H—56-3; 57-2; 58-1. Section R—92-1; 93-3; 94-1.

PART C: 105-alpha; 108.1-8; 108.2-7; 108.3-3; 108.4-4; 108.5-1; 108.6-6.

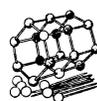
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