

# Current U.S. Patents

Film packs and small containers can be tossed from space by a system that ejects them automatically at a predetermined time and altitude

► A SYSTEM for tossing film packs and other small containers from space satellites and rising rockets was granted a patent by the U.S. Patent Office.

The invention is an improved assembly for opening the stabilizing flaps that help cushion the film capsule's free-fall through the earth's atmosphere.

The capsule is automatically ejected at a predetermined time and altitude. The system, granted patent 3,262,365, has been used on Saturn I and Atlas flights and is scheduled for use on the powerful Saturn V rocket flights.

Details of the ejection system for many of the secret satellites launched by the Air Force, such as the Vela Hotel, Samos and Midas series, are not available.

However, it is likely that the patented system is used to eject film capsules from these satellites also. If not picked up within a predetermined length of time, capsules from

the Air Force satellites, with their film, dissolve in the ocean waters in which they fall.

Alfred P. Warren of Huntsville, Ala., and Billy D. Lawson of Madison, Ala., assigned rights to their patent to the Government through the National Aeronautics and Space Administration.

The patent covers not only a way of storing the capsule before ejection, but also a device for sending it earthward with stabilizing and decelerating flaps that open and lock automatically. The flaps are so arranged that they cannot collapse.

## Pure Water in Space

An electrochemical process for producing drinking water from urine, which has obvious space applications, earned patent 3,262,869 for three scientists from General Electric Company's Space Technology Center, King of Prussia, Pa.

Norman Belasco, Gordon Lee Fogal and James Greig Leisenring have devised a way not only of reducing the energy required for electrolytic purification in a fuel cell, but also of continuously removing some of the impurities remaining in the cell without draining it.

They assigned patent rights to General Electric Company, New York. The invention covers the extraction of "potably pure water from biologically and chemically impure (and aesthetically offensive) liquid water containing biological waste (of which urine is the most readily collected in quantity, although sweat and tears could also be used if available)" by a process that is not dependent upon gravity and could, therefore, be used in a space vehicle.

In the process, urine is broken down electrically into hydrogen and oxygen; these two elements are then recombined in a fuel cell to produce potable water and electrical energy.

## Other Interesting Patents

Another device with space applications, an electrostatic rocket engine, was awarded patent 3,262,262. Paul D. Reader and Harold R. Kaufman of the National Aeronautics and Space Administration's Lewis Research Center Cleveland, Ohio, assigned patent rights to NASA for their method of injecting fuel into an ion rocket engine. Using the method, which has proved successful in wind tunnel tests, distribution of the propellant is matched with the distribution of electrons that cause the ionization.

A switch to control the high electrical currents essential in tests to tame the hot, gaseous plasmas in which thermonuclear reactions take place earned patent 3,263,112 for four scientists at the Naval Research Laboratory Washington, D.C. Dr. Alan C. Kolb, William H. Lupton, Leonard J. Melhart and Marvin P. Young assigned rights to the "magnetic blowout switch" to the Government through the Secretary of the Navy.

A device for illustrating how the so-called Coriolis force affects motions in the earth's atmosphere was granted patent 3,262,220. Ben Lorenz of Katonah, N.Y. Dalton L. Shimko of Vernon, N.J. and Robert L. Wyener of Woodside, N.Y., assigned patent rights to the Government through the Secretary of the Navy.

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