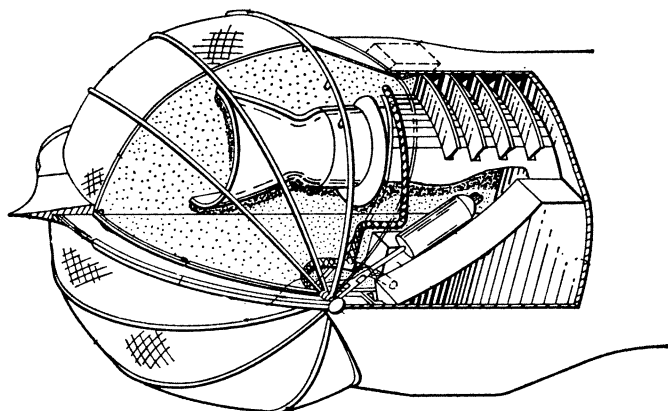


Current Patents

ROCKETS

Booster Recovery Apparatus



Multimillion-dollar rocket stages are jettisoned and lost at sea almost every time a spacecraft or satellite is put into orbit. They are either damaged by impact or corroded by seawater. Usually, they rupture and sink.

Last week two engineers at Martin Marietta Corp., New York, were granted patent No. 3,313,112 for a device that would protect a booster from shock, shield rocket motors from seawater and keep the whole thing afloat even if the fuel tanks should rupture.

The system works like a convertible auto top. As the spent booster descends, an altitude sensor actuates a series of struts, covered with a canopy of aluminized silicone-rubber-coated glass fabric. The struts deploy into a hemisphere enclosing the lower end of the booster.

When the dome is complete, a silicone mist is sprayed from nozzles lining the struts, coating all the surfaces of the rocket motor. Then a quick-hardening foam material is sprayed in under high pressure, filling every nook and cranny within the dome.

The rigid foam takes up the shock of splashdown, insulates against the water and provides buoyancy. The technique can be used on boosters of any weight and size, said the inventors, Arlen I. Reichert and Edward Priestas, who assigned rights to Martin.

MEDICINE

Potassium-retaining Diuretics

A new class of diuretic compounds which prevents the potassium loss often associated with diuretic therapy, while promoting the elimination of salt and fluid wastes, has been patented by Dr. Edward J. Cragoe of Merck Sharp and Dohme Research Laboratories.

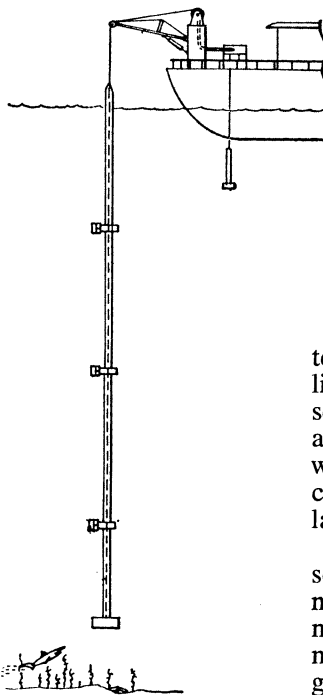
The new drugs, commonly referred to as pyrazine diuretics, are not available for general use. They are currently undergoing clinical tests to evaluate their safety and effectiveness. Potassium loss in the body often results in severe muscular weakness.

With the vast majority of diuretics available today, according to the company, there is enough potassium loss to require medical or dietary means to replace it. The pyrazine diuretics, in animal tests, have shown that they keep the potassium balance while stimulating the removal of sodium and fluid wastes through the kidneys.

How the new drugs work is not fully understood, but Merck scientists think they may interfere with the activity of aldosterone, a hormone conducive to potassium elimination through the kidneys. They can be administered by "pills, tablets, capsules, elixirs, injectable preparations and the like," reports Dr. Cragoe, who assigned rights to patent No. 3,313,813 to Merck and Co., Inc.

OCEANOGRAPHY

Clamp-on Sea-monitoring System



An ocean-monitoring system in which temperature, salinity, current and other sensors can easily be placed at any level on a vertical cable without damaging the cable received patent No. 3,314,009 last week.

To connect a number of separate oceanographic instruments to a single cable formerly required a cable with many conductors inside a single casing. Relocating the instrument pickups along the cable required cutting through the insulation to attach them.

After repeated use, cables often became so severely damaged they had to be replaced.

A simple solution, developed by Lawrence C. Murdock and assigned to the Bissett-Berman Corp., Santa Monica, Calif., makes no breaks in the cable and allows a theoretically limitless number of instruments to be added easily, without even the need for tools.

Already in use by the U.S. Office of Naval Research, the system makes use of magnetic loops which clamp around the cable and carry signals to and from the instruments by induction. Besides saving cables, the technique works with a single, insulated conductor that can be made much lighter and less bulky than multiconductor versions.

Large numbers of instruments can be used by setting each one to respond to a different electrical signal from the buoy or ship on which the data are being gathered. If several instruments must send continuous data at the same time, the signals from each can be carried on a different carrier band.

A major advantage to the clamp-loop system is the ease of deploying and retrieving the instruments, which can be simply locked on or removed by hand as the cable is being unreeled or drawn in.