

## INVENTION

# Current U.S. Patents

Drivers and passengers in automobile crashes at extremely high speeds can be protected by a passenger compartment that moves to absorb the shock.

► A NEW METHOD to protect the driver and passengers in high-speed automobile crashes by moving the passenger compartment so that it absorbs much of the shock created by an abrupt stop received a patent from the U.S. Patent Office.

The method is designed to work only for crashes at speeds where safety belts and padded dashboards do not provide adequate protection. The force of sudden slow-down is absorbed in two ways, by motion of the passenger compartment in an upward curve toward the front and two energy-absorbing pistons.

Harlan D. Hewitt of Chicago, Ill., was awarded patent 3,162,479 for this method of building automobiles, which increases their safety by providing a separate cradle to hold the passenger compartment.

## Hydrofoil With Variable Sweep

A hydrofoil with fins whose positions can be changed to give a smooth transition from low to high speeds earned patent 3,162,166 for Eugene H. Handler of Kensington, Md., who assigned rights to the Government through the Secretary of the Navy.

Tank tests are scheduled for the variable sweep hydrofoil, Mr. Handler told SCIENCE SERVICE. He said the hydrofoil system was devised to give the best possible ratio of lift to drag over a broad range of speeds.

This is accomplished by providing for automatic or hand control of the appropriate angle of sweep-back. One advantage of the variable sweep is that it helps prevent cavitation.

## Vanishing Shock Block

A solid chemical shock absorber that holds delicate probe instruments tightly in place during their ride through space vanishes after it does its job.

The shock block, which received patent 3,160,950, was reported as a "basic scientific development" by National Aeronautics and Space Administration officials. Co-inventors are Langley Research Center scientists William J. O'Sullivan Jr., Hampton, Va., and George F. Pezdirtz, Newport News, Va. Mr. O'Sullivan was also a co-inventor of the Echo balloon satellite, the giant mirror in the sky used to send messages around the world.

The compound has been used in various sounding rocket probes to keep delicate instruments intact during the extreme shocks of liftoff and landing.

The instruments are dipped into a chemical compound, made from a class of polymers called polyoxymethylenes. The compound forms a solid block around them.

Once the instruments reach their destination in space safely, the solid compound vaporizes and disappears because of the extremely low pressures. The bare instruments are then free to operate.

Patent rights to the solid shock block were assigned to NASA.

## Pilferproof Wall Plug

A newly patented wall plug can be plugged in but cannot be pulled out.

The pilferproof plug, which contains a screw with a non-backout head, can be used in motels or hotels to keep visitors from walking away with appliances. It also provides a safety device against plug-pulling youngsters who might accidentally cut the current of a freezer or refrigerator where there is danger of food spoilage.

The plug, which fits ordinary sockets, has a metal tab on top with a screw to fit a tiny hole above the socket. The screw can be tightened into the hole, but the screw slot is beveled so that it cannot be taken out.

The plug earned patent 3,161,450 for Bradford A. Goodenough, Athens, Ga., who assigned patent rights to General Time Corporation, New York, N.Y.

## Other Patents of Interest

An ion engine for space vehicles is fueled by cesium compounds that disintegrate when heated. The amount of thrust from this ion engine can be controlled. James E. Webb, administrator of the National Aeronautics and Space Administration, was awarded patent 3,159,967 for this invention of Ernest N. Petrick, who was working for Kelsey-Hayes Co., Detroit, when he devised the solid-fuel engine.

A detector for reading machines, such as those that automatically scan checks in a bank, can help an operator decipher poorly written letters or figures. The "doubles decision detector" earned patent 3,160,855 for Arthur W. Holt of Silver Spring, Md., who assigned rights to Control Data Corporation, Minneapolis.

A coding device has been designed for persons with medical conditions requiring special treatment and precautions, such as diabetics, bleeders or those allergic to certain drugs. The code is marked permanently in red and green ink on the skin near the armpit. Sherman M. Bragg of Stockton, Calif., Ida M. Leonardini of Linden, Calif., and Jack L. Warren of Sacramento, Calif., assigned rights to patent 3,160,155 to Medico-Code, Inc.

For a list of registered patent attorneys and other Patent Office information, write the Commissioner of Patents, Washington, D.C. 20231, or call 202-967-4058.

• Science News Letter, 87:31 January 9, 1965

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