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### **BATTERIES**



These Government surplus storage battery cells are nickel-cadmium sintered plate type used in satellites and missiles due to characteristics not possessed by any other battery, ie: Lifetime service, constant voltage during discharge, extreme temperature ranges, discharges in any position, compact, high discharge rate (up to 25 times ampere hour capacity), no corrosive fumes, not harmed by storage, overcharging and freezing.

or storage, overcharging and freezing. CELLS ARE 1.25 V. EA. REGARD-LESS OF TYPE. Replace with these cells to operate any equipment using dry or wet batteries where portability, dependability, and ruggedness are requisites. Select cells from list to best fit application.

#### NICKEL-CADMIUM PLASTIC CASED CELLS:

	Ampere			(N) New (U) Used			
Esse		Dimensions		inches			Esse
Type	Hours	Height	Width	Depth	Ozs.	tion	Price
AH4	4-6	6.00	2.00	.5	6	U+	\$ .99
AH4C	4-6	6.00	2.00	.5	6	U	1.49
AH4R	4-6	6.00	2.00	.5	6	N	2.49
AH6	6-10	4.00	2.12	.937	8	N	4.95
AH20N	20-30	8.12	3.12	1.06	40	U+	4.95
AH34N	30-40	9.38	3.12	1.38	52	Ú	9.95
AHGON	60-80	11.25	5.00	1.38	104	Ü	14.95

Types ending in 'N' are nylon cased; others are acrylic plastic.

#### NICKEL-CADMIUM STEEL CASED CELLS:

Type M-30, size  $8.875 \times 3 \times 1.750$ , Wt.  $3\frac{1}{2}$  lbs. 30 AH. Used\* \$2.95, New \$5.95 per cell. Aircraft 28 V. Battery made up with 20 of these cells—Used\* \$60, New \$125. Overall size 10" x 10". Wt. approx. 60 lbs.

#### IRON-NICKEL:

Type B-4 Edison. 30 AH. 6 V. battery of 5 cells in hardwood rack, used-\$25. Overall size approx. 18" x 10" x 6". Approx. wt. 50 lbs.

CHARGER FOR 6 V. OR 12 V. BATTERIES. Charges at 1 amp. rate which is ideal for all types of cells above or auto batteries-\$4.99 ex.

Guarantee: All cells are guaranteed for satisfaction or your money back except cells marked with an asterisk (\*) which are sent as received from used Government stocks and not checked before shipping.

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INVENTION

# Current U.S. Patents

A webbed nylon space couch that will reduce the load of a manned vehicle by as much as 100 pounds can be folded when not in use—By Ann Ewing

➤ A SPACE COUCH in which astronauts of the future will be lofted into space was granted a patent by the U.S. Patent Office.

The couch is actually a webbing made of undrawn nylon attached to a rigid framework. It is lightweight and can be folded and stowed away after takeoff or landing. This ability to fold is particularly valuable for vehicles carrying two or more persons, such as the three-man Apollo flight to land on the moon, where space is at a premium.

The system was originally developed for Project Mercury, in which the U.S. sent astronauts orbiting the earth, and would have been used if there had been another

Mercury flight after that of L. Gordon Cooper Jr.

The weight reduction possible using the net for support instead of a specifically contoured couch is about 100 pounds, Richard S. Johnston of the National Aeronautics and Space Administration's Manned Spacecraft Center in Houston, Tex., told Science SERVICE.

Douglas J. Geier, Gerard J. Pesman, Richard S. Johnston and Matthew I. Radnofsky of the Manned Spacecraft Center were awarded patent 3,165,356 for their invention, which is being further developed.

They assigned patent rights to the Government through the Administrator of NASA.

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SURPLUS OPTICS-ELECTRONICS CATALOG. 72

### **Solid Rocket Propellant**

A solid propellant for rockets in which the fuel is shaped in long cones with sharp edges to give an even burning rate earned patent 3,165,060 for James V. Braun of Lewisburg, Ohio, and Willard S. Bacon of Lancaster, Calif. They assigned rights to the Government through the Secretary of the Air Force.

Using their method, the rocket case is completely filled with fuel. It permits the use of propellants having very high burning rates. All the fuel burns simultaneously, delivering a smooth thrust from ignition to burnout.

### Other Patents Issued

A protective device for high accelerations, now being used in centrifuge studies but with possible application to space flight, was awarded patent 3,165,355. Dr. Lloyd Hitchcock of Hatboro, Pa., and Donald A. Morway of Oreland, Pa., assigned rights to the Government through the Secretary of the Navy. The device can be adjusted to fit any person.

An apparatus for making photographic copies of original documents earned patent 3,165,046 for Edwin H. Land of Cambridge, Mass., and his co-workers. Patent rights were assigned to Polaroid Corporation, also of Cambridge.

A sharpener designed for sharpening Phillips-type screwdrivers earned patent 3,164,931 for Louis G. Sanchez and Philip

A. Plount of Las Vegas, Nev.

For skiers desiring easy separation of boot from ski, Franklin Malone of Aurora, Colo., has devised a ski boot that is secured magnetically to the ski. He was awarded patent 3,165,328 for his invention.

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 for specific information.

• Science News Letter, 87:78 January 30, 1965

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