

INVENTION

Patents of the Week

A method of producing americium invented by Nobelist Glenn T. Seaborg and two devices concerning underwater jet propulsion were awarded patents.

► THE DISCOVERY of the chemical elements of the atomic age is being recorded in the U.S. Patent Office after being held under secrecy wraps more than a decade.

Latest patent on the man-made elements heavier than uranium has been awarded to Dr. Glenn T. Seaborg, Nobelist and chairman of the U.S. Atomic Energy Commission. For a method of producing americium, element 95, next in the chemical table beyond the atomic-bomb element plutonium, he was given patent 3,044,944, assigned to the AEC, jointly with Dr. Ralph A. James, who worked with him at the famous Berkeley laboratories of the University of California.

The birth place of americium announced in 1946 was from bombardment in the 60,000-electron-volt cyclotron of the University of California, which has this summer been "retired" after 25 years of service. However, it was produced for the first time in a nuclear reactor, or atomic pile, the method covered in the patent.

The patent notes that a "suitable reactor" is the one patented by the late Dr. Enrico Fermi and by Dr. Leo Szilard of the University of Chicago, basis of the first atomic pile.

The reactor has to be operated at a fairly high power level, about 200,000 kilowatts, for 100 days to produce barely measurable amounts of americium after the neutron-bombarded product is allowed to stand, since its concentration increases with time.

Element 95 can be made in a cyclotron with a less intense bombardment of neutrons, but the amount produced is then even smaller.

Dr. Seaborg also has been granted a patent on production of element 96, called curium, which was discovered in 1946, as well as other elements heavier than those found in nature.

Underwater Jet Propulsion

Among patents granted were two concerning underwater jet propulsion that went to Dr. Fritz Zwicky of California Institute of Technology, Pasadena. Patent 3,044,252 and 3,044,253 were also kept under security wraps for a time after application was made 12 or more years ago. Dr. Zwicky assigned rights to both patents to Aerojet-General Corporation, Cincinnati, Ohio.

One provides for speeding the reaction between water and the light metals used for thrust by heating the metals above their melting point before bringing them into contact with the water. The other is a method for making such reactions occur at specifically timed intervals.

Space-Simulating Device

Dr. Willard H. Bennett, formerly of the Naval Research Laboratory in Washington, D. C., is now building at North Carolina State College the device for which he received patent 3,044,301, giving free use thereof to the Government.

The device, which will be 20 feet high when finished, produces space-like conditions for testing methods for propelling satellites. The vacuum produced by Dr. Bennett's method is sufficiently high to test cesium and other ion space drives for long periods of time.

Other Significant Patents

Other interesting patents include:

A system for launching missiles from below deck for use on aircraft carriers. Patent 3,044,362 to Robert E. Carlberg of McLean, Va., who assigned rights to the Government through the U.S. Navy.

An improved mobile sea platform, from which to explore, drill or produce "tidelands" oil. Patent 3,044,269 to Robert G. Le Tourneau of Longview, Texas.

A process for protecting the chlorophyll (green coloring matter) while green vegetables are being cooked by adding a citrate-phosphate buffer to keep the cooking water neutral or nearly so. Patent 3,044,882 to James P. Sweeney and Margaret E. Martin of Silver Spring, Md., who assigned rights to the Government through the Secretary of Agriculture.

A so-called pinch device for confining and heating a plasma (gaseous state of matter) in a flat sheet between two conducting walls. (Achieving sufficient heating of a plasma for a relatively long time would yield peaceful power from the hydrogen bomb reactions.) Patent 3,044,945 to Oscar A. Anderson, Oakland, Calif., who assigned rights to the Government through the Atomic Energy Commission.

• Science News Letter, 82:77 August 4, 1962

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- SCIENTIFIC

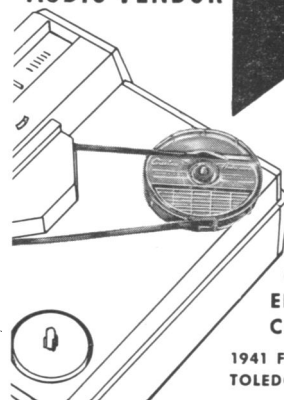
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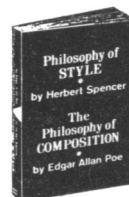
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