

Current U.S. Patents

A Pyrotron reactor, a new device for controlling thermonuclear energy, uses magnetic mirrors to help contain plasma, the hot gas found in the sun—By William McCann

➤ A METHOD of making a miniature sun on earth with the help of two mirrors was granted a patent by the U. S. Patent Office, Washington, D.C.

The device, called a Pyrotron reactor, is aimed at controlling thermonuclear reactions, such as stoke the sun and other stars, to produce power.

To control thermonuclear energy, the fuel must be ionized and heated to a temperature of 100 million degrees or more. The resulting hot gas, or plasma, must be confined at this temperature long enough to allow a substantial number of the atomic cores to fuse. The massive energy thus released must then be harnessed and converted to usable power.

In the Pyrotron reactor the plasma is contained in a straight cylindrical tube by means of an external magnetic field with magnetic mirrors at each end.

Dr. Richard F. Post of the University of California Lawrence Radiation Laboratory, Livermore, Calif., earned patent 3,170,841 for the thermonuclear reactor. The patent establishes the basic idea of using magnetic mirrors to help confine the plasma, Dr. Post said.

Patent rights to the Pyrotron reactor were assigned to the Government through the Atomic Energy Commission.

De-Icer for Boats and Piers

Boats and piers can be protected from costly ice damage by a wrap-around device that helps make the water warmer at the surface.

When ice forms around pier posts in coastal areas, the tide moving in and out causes the posts eventually to lift out of place. The pier protector, which earned patent 3,170,299, is a metal sheet that fits around the post like a sleeve. The metal sheet conducts heat upward from the warmer water below the surface.

A strip of insulating material is attached around the top of the sheet. This ring of material also keeps the sheet afloat.

A long sheet can be placed around a boat like a fence to keep ice from forming, reported John H. O. Clarke, Annapolis, Md. Mr. Clarke, a patent attorney, built the device to protect his own boat from ice damage.

He reported that his device is a very inexpensive means of preventing icing, which can cause millions of dollars in damage and destruction in severe cases.

Three-in-One Flashlight

A newly patented flashlight has a built-in fire alarm and push-button signaling device.

The three-in-one flashlight can be used in the home, car, garage or on camping trips for all sorts of emergencies, reported Andrew

L. Appel, St. Louis, Mo., who earned patent 3,171,109 for the device.

The fire alarm can be set by hand so that when the temperature in a given area gets too high, the device will sound an alert. The distress signal sounds for help with a push of a button.

Automatic Fish Catcher

A fish catcher for fishermen who want to take a cat nap automatically yanks the line when the fish takes the hook in its mouth.

The fish catcher is a four-legged device with an attachment for holding the rod and reel. When a fish grabs the hook, a lever causes the line to be pulled tight, firmly setting the hook in the fish's mouth. The rod can then be removed from the holder and the fish reeled in by hand.

The device earned patent 3,170,262 for Emmett A. Hall, Vernal, Utah.

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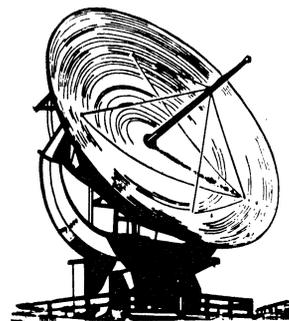
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