

Current Patents

REACTOR PHYSICS

Ten-year Contest Ends

After nearly ten years of litigation, improvements on a method that could be used to prevent nuclear reactors from running away—becoming so hot that the interior melts—have been granted a patent by the U. S. Patent Office.

The case is regarded as so important by the Dow Chemical Co., which has rights under the patent, that it fought the case all the way to the U.S. Supreme Court. Finally, however, Dow had to settle for a patent on “improvements.” The device itself, a neutron amplifier invented by Dr. Lyle B. Borst while working under security wraps for the Atomic Energy Commission, turns out not to be patentable, largely because of the legal technicality that took the case to the Supreme Court.

The case has particular importance to lawyers and inventors in classified areas, because it places on an unsure footing previous rulings on what is “prior knowledge” and “reduction to practice” under the patent law.

Here's what happened:

Before Dr. Borst applied for his patent, a classified memo on the invention had circulated among scientists at AEC. The Patent Office, when it received the application, rejected it, contending that the memo represented “prior knowledge” which anyone could have reduced to practice.

Dow took the case to the Court of Customs and Patent Appeals which agreed with the Patent Office, but

said there were improvements in Dr. Borst's application which ought to be patentable.

Dow held that in reserve, but took the decision on the invention itself to the Supreme Court. The high court's subsequent refusal to review in effect upheld the appeals court, leaving Dow with half a loaf, patent 3,291,694.

Dr. Borst said in a telephone interview that the neutron amplifier permits operating a nuclear power plant in such a way that it cannot go “critical,” becoming so hot that the fuel elements fuse. When this happens, as it has in the Fast Breeder Reactor and at Canada's Chalk River plant, for instance, the loss is measured in millions of dollars.

The amplifier acts to control the flow of neutrons within a nuclear reactor much as vacuum tubes control the flow of electrons in a radio.

ALSO PATENTED

Industrial Chemicals

A cheaper and commercially feasible method for producing acetaldehyde, a basic industrial chemical, earned patent 3,291,839 for Richard W. Carney and Graham A. Renberg of Bartlesville, Okla. They assigned rights to Phillips Petroleum Company, Bartlesville.

Increased yields from sugar cane plants are obtained when substituted uracils and their derivatives are applied five to 35 days before harvest, Dr. Arlyn W. Evans of Memphis, Tenn., has found. He assigned rights to patent 3,291,592 to DuPont Company, Wilmington, Del.

New Ideas and Gadgets

Ask for Gadget Bulletin 1384 for source information. Send self-addressed stamped envelope to SCIENCE NEWS, 1719 N St., N.W., Washington, D. C. 20036.

Telephone Holder

A person can dial a call without holding the telephone and use both hands to write while talking by using the adjustable goose neck telephone holder that stands completely free on a small base. The unit will hold the receiver at any desired angle.

Handy Wrench

Standard nuts and bolts of various sizes can be used with the time-saving tool that automatically adjusts to the nut or bolt size, taking the place of a set of ratchet wrenches. The jaws of the 10-inch steel wrench are opened with thumb pressure, placed over the nut or bolt head and released for a secure grip.

Hi-Intensity Fluorescent Lamp

Up to four times more light per watt is produced by a hi-intensity fluorescent lamp, that provides a cool soft light. Designed for precision work, the lamp has a four and one-half-inch padded weighted base and a 12-inch flex arm. It comes in several colors.

Cavitation Intensity Meter

The cleaning efficiency at any location within an ultrasonic cleaning tank can be observed at a glance

during operation with the compact hand-held cavitation intensity meter. The instrument, completely self-powered, includes a steel probe and solid state detector.

Marine Tank

Made for display of a variety of marine animals, as well as for research and experimental purposes, the completely self-contained tank runs on 110 volt electricity. Filters keep the tank clean and maintain a constant pH. Six models with capacities from 55 to 155 gallons are available.

Temperature Measuring Kits

Temperature indicators designed for industry as well as laboratories, provide permanent irreversible readings of peak temperature within the range of 100 to 1,100 degrees F. Backed with pressure sensitive adhesive, they are made in the form of decals containing a chemical that turns black at specific temperatures.

Disposable Medicine Cup

Made of polypropylene, the one-ounce transparent and tasteless cup will not cut lips or hands and is marked with an easy-to-read medical scale. Designed for hospital use, the disposable cup comes in 50-sleeve cartons with 100 cups to a sleeve.