

## INVENTIONS

# Patents of the Week

► A THIN METALLIC film that has almost no resistance to an electric current at very low temperatures may someday help scientists process data 100 times faster than is now possible with ordinary computers.

The U.S. Patent Office awarded patent 3,115,612 for films that are used in superconducting circuit elements in computers.

Many metals and intermetallic compounds become superconducting and lose all detectable resistance to an electric current at temperatures close to that of liquid helium, the only element that remains liquid very close to absolute zero, which is 459.7 degrees below zero Fahrenheit.

Superconducting computers will thus require less electrical power and can operate much faster. These computers are expected to become invaluable in calculating space satellite and missile data, Dr. Hans W. Meissner of the Stevens Institute of Technology, Hoboken, N.J., told SCIENCE SERVICE.

Dr. Meissner has made two basic inventions in the field of low temperature physics. One of them, which earned U.S. patent 3,096,421, is a device necessary for the assembly of the module in superconducting computers. All connecting wires and contacts have to be superconducting in this type of computer.

In Dr. Meissner's patent for superconducting films, two metals instead of one are combined to form a film or core-and-sheath wire that is partially superconducting, making available a wider range of choices and desired characteristics.

A metal that is only partially superconducting has reduced electrical resistance. The two metals are electroplated together and the electrons near the surface mingle. Superconducting electrons travel across into the normal conducting metal and vice versa.

The patent has no value unless a means for reducing the metals to the very low temperatures required is available, Dr. Meissner said. With the perfection of cryogenic or supercold refrigerators that are now becoming available, this problem is being whipped.

## Reflector Space Satellite

A space satellite that unfolds in space to reflect electromagnetic waves from earth earned patent 3,115,630 for Wade E. Lanford, an employee at the National Aeronautics and Space Administration's Langley Research Center, Virginia.

The satellite is made of a thin flexible plastic sheet and is carried aloft folded in pleats inside a rocket nose cone. A spring kicks the packaged antenna from

the spinning nose cone of the rocket and the centrifugal force causes the satellite to unfold in a smooth conical shape. The concept has been under consideration since the patent was filed in 1960, but is not an immediate part of the current space program.

## Earth Penetration Device

A nuclear device that penetrates the earth's crust like a needle won patent 3,115,194 for William M. Adams of Livermore, Calif. The core that drills into the earth sustains a chain reaction inside and the heat energy from the reaction is directed downward.

Rights to the patent were assigned to the U.S. Atomic Energy Commission. This needle reactor concept has been considered for use in exploring the earth's crust, but it is not being used at this time.

Other patents included:

A process of spray-drying eggs by injecting a non-toxic gas into the egg liquid and feeding the gasified liquid into a spray drier—patent 3,115,413 to Leo Kline, El Cerrito, Calif., John J. Meehan, Pinole, Calif., and Takashi F. Sugihara, Richmond, Calif.; assigned to the U.S. Department of Agriculture.

An international standard time device with the principal cities of the world divided into the 24 time sectors in relation to the International Date Line—patent 3,115,002 to Peter A. Beresford, Albany, N.Y.

A device that loosens the soil and chops away vegetation at the same time—patent 3,115,193 to Wayne G. Pullen of Jasper, Texas.

• Science News Letter, 85:29 Jan. 11, 1964

## Do You Know?

There were more than two million disabling job injuries, 83,000 permanent impairments and 13,700 deaths from worker accidents in 1962.

Studies of radioactive carbon-14 in buried Wisconsin evergreen trees show that they lived 11,000 years ago.

A neutron star is believed to be the product of a supernova explosion, the gigantic explosion of a star triggered by the collapse of its core followed by the sudden release of gravitational energy.

• Science News Letter, 85:29 Jan. 11, 1964

## MAKE MONEY WRITING .. short paragraphs!

You don't have to be a trained author to make money writing. Hundreds now making money every day on short paragraphs. I tell you what to write, where and how to sell; and supply big list of editors who buy from beginners. Lots of small checks in a hurry bring cash that adds up quickly. No tedious study. Write to sell, right away. Send for free facts. **BENSON BARRETT**, Dept. 163-N, 6216 N. Clark St., Chicago 26, Ill.

**GLASS STOPPERED @ 1/3 BOTTLES**

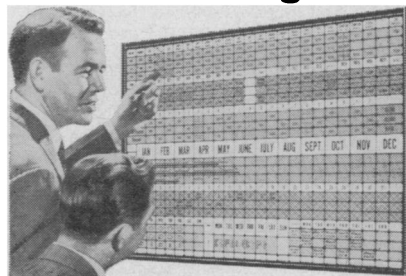


**Regular price**

4 ounce, narrow mouth, flat stoppers. Flint (clear) glass. First quality. Low form, hand blown from glass highly resistant to chemical action. Brand NEW. Vapor tight. A sample only 55¢ p.p. 6 for \$3.00 p.p. 12 only \$5.50 p.p. Quantity strictly limited at this price 25¢ brings products bulletin.

**HARRY ROSS Scientific & Lab Apparatus**  
61-L Reade St., N.Y. 7, N.Y.

## How To Get Things Done



### BOARDMASTER VISUAL CONTROL

Your operations are pictured at a glance. You save time, money and prevent mixups by Seeing What is Happening at all times. Ideal for Production, Maintenance, Inventory, Scheduling, Sales, Etc. Easy to Use. You write on cards, snap on metal board. Over 750,000 in Use.

**FREE** 24-Page BOOKLET No. V-20  
Mailed Without Obligation

**GRAPHIC SYSTEMS**  
925 Danville Road • Yanceyville, N.C.

## EXPLORE THE SKIES!

**COLOR MAP OF THE NORTHERN HEAVENS:** 30"x34 1/2" shows stars to magnitude 5.1. \$1.00  
**COLOR CHARTS OF THE MOON:** 2 maps of 1st- and last-quarter, 23"x33". \$2.00  
**SPLENDORS OF THE SKY:** 36-page picture booklet designed for the classroom. 50¢

Write for free folder N.

**SKY AND TELESCOPE** Dept. SNP  
Cambridge 38, Mass.

## GOV'T SURPLUS ELECTRIC GENERATOR

Cost Over \$20.00 New; While They Last, \$3.95

Generates up to 100 volts. Use to generate electricity, ring bells, light up lights, as a medical battery, shocker, many electrical experiments, classroom uses, etc. Hand Crank or gear wheel drive. Each has permanent alnico (alone worth more than total cost), generating armature, wire leads, gear crank, ready for use. Various styles. Postpaid. . . . . \$3.95

### Surplus Underwater Electronic Detector

New! Cost \$200.00. Special \$7.95. Use as detector or use parts for other devices such as mike, pick-up, etc. Wt. 30 lbs. F.O.B. Detroit. Only **\$7.95**  
**JOHNSON SMITH CO., Dept. 427, Detroit 7, Mich.**

## Super Jet SOLID FUEL BLOWTORCH

OVER 2000° F.



A Jet Age Creation  
**NO PREHEATING — STARTS AT ONCE.** You can solder, silver solder, braze, anneal or harden, form glass with this amazing new torch. Non-explosive! **FAST, CLEAN and SAFE.** Each tablet gives high heat for ten minutes—can be extinguished & relighted. Lifetime guarantee Super Jet and 12 tablets (2-hour supply) with directions. . . . \$1.99

Extra tube of 12 tablets 35¢ plus 10¢ mailing.  
**THE BIRK MFG. CO.**  
Niantic 515, Connecticut

Post Paid  
No C.O.D.  
please

## LIVE! micro-ZOO

**FASCINATING NEW KIT** provides thousands of specimens of live tropical protozoans for low-power microscopes. Just add water. micro-ZOO grows in hours in a paper cup—lasts for weeks! Kit contains selected species of encysted protozoans, food, and decelerator for slow motion study. \$1.00. At your Science Museum, or direct from micro-ZOO, Dept. S, Box 334, South Miami, Florida.