

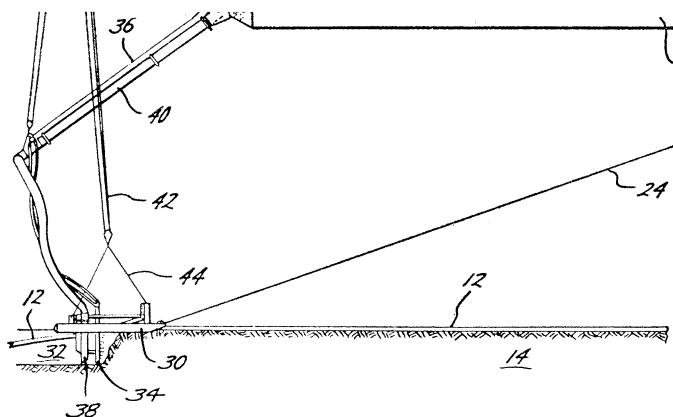
Current Patents

ELECTROLOCATION

Lost Pipes Found

Pipes carrying offshore oil, often lost in muck washed down by rivers, can be traced with an electrical device patented last week.

The instrument has been used in the Gulf of Mexico, the Persian Gulf and the North Sea. Electrical impulses sent down a yoke straddling the pipe and then bounced back allow engineers in the barge above to know the position of the pipe to within two or three inches.



The problem facing searchers for under-ocean pipe is that if the detecting device comes too close, it may strip off the pipe's insulation. Mechanical devices are usually adequate for following the pipe when the water depth is no more than 30 feet.

Below that depth, Brown and Root Co. of Houston, Tex., uses the electrical system patented by John G. Tittle, who assigned the firm his rights. Patent 3,338,059.

CONTROLLED FUSION

High Magnetic Fields

A method of producing the high magnetic fields necessary for confining a gaseous plasma sufficiently long that controlled thermonuclear reactions can occur earned a patent for Dr. Jiri George Linhart of Frascati, Italy.

Dr. Linhart's method uses chemical explosives to implode a metal tube that compresses the magnetic field to the required strength of some 100 million gauss. The magnetic field is generated by an electric current traversing a conductor spanning the center of the chamber in which the plasma is compressed.

Compression times are on the order of 10-millionths of a second, Dr. Linhart states in the patent, rights to which were assigned to the European Atomic Energy Community, Euratom, in Brussels. Patent 3,338,788.

SOLID STATE PHYSICS

New Transistor Device

A high power transistor device that works well at high frequencies and isn't bothered by temperature problems was patented last week by Nobelist Dr. William Shockley, who describes it as "one of my most favorite" inventions. Dr. Shockley, now at Stanford University, was co-inventor of the original transistor in 1948.

The new device uses the "avalanche" effect, which causes a semiconductor to change suddenly into a good

conductor when a certain voltage is applied. At that point, the applied voltage stays the same no matter how much current flows, so avalanche diodes are widely used as voltage regulators.

Dr. Shockley found that by adding another section to the diode, he could control the amount of current flowing through the device under avalanche conditions. This means that it could be used as an amplifier like an ordinary transistor.

The advantage of the new device is that in high power operation, where much heat is generated, it won't develop hot spots as ordinary transistors do. This is because higher temperatures increase the voltage at which avalanche occurs, so that if it gets too hot, the avalanche transistor automatically shuts down before it damages itself.

Dr. Shockley says he likes the device because "it seems to be a transistor that operates as high as 10 megacycles." He assigned the patent to International Telephone and Telegraph Corp., which is now working to perfect the device. Patent 3,339,086.

CONSERVATION

Saving Fingerlings

A system for transporting fingerling fish safely downstream past a dam or similar obstruction was patented last week by John P. Roscoe of Cutten, Calif.

Although salmon and other fish can be transported upstream by fish ladders without difficulty, there is a problem in moving fingerlings downstream from spawning grounds, especially when dams are of considerable height. The difficulty is that fingerlings tend to follow flowing currents, and such currents often pass through power turbines, thus killing many of the fish.

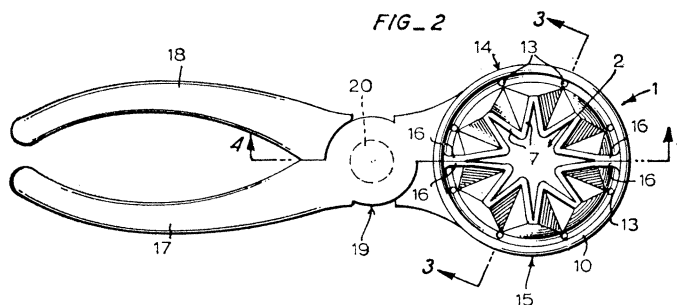
Roscoe's solution provides a by-pass flow that gives the fingerlings a descent ladder at one side of the dam. It requires only a relatively small amount of power to operate, Roscoe claims. Patent 3,338,056.

SANITATION

Diaper Wringer

An inexpensive plastic diaper wringer was patented last week by Esther M. Williams of Marysville, Calif., and Jack E. McLaughlin of Yuba City, Calif.

McLaughlin said he expected it to be in production within six months.



The wringer is hand-held, having a passageway through which a wet diaper can be drawn to squeeze out moisture and impurities. The operator holds the diaper by one of its dry edges. The wringing is most easily accomplished over the toilet bowl in which diapers are initially rinsed. Patent 3,338,076.