Current Patents

DATA PROCESSING

Safeguarding Computer Tapes

As the business world becomes more and more enmeshed in the computer era, the notion of accidentally erasing a tape full of valuable data becomes more and more terrifying. Computer companies have been working overtime to make such a mistake impossible.

Two ways of doing this have been developed at Bell Telephone Laboratories, where tape losses once ran as high as one a day, out of perhaps 200 handled. In more than a year since the ideas were put into use, says Frank R. Michael, "we haven't lost a tape."

Michael calls one technique the "fail-safe circuit." This is designed to prevent a careless operator from recording over a valuable tape that was not removed from the machine after use. A computer equipped with the circuit simply refuses to operate if the reel of the tape that has been rewound on it is equipped with a ring-shaped device that indicates it to be a tape that must be preserved.

In the second system, each tape reel is equipped with an adhesive patch to which is stuck a card equipped with metal tags to indicate the number of the tape. Putting the card in an electronic reader eliminates the human error in identifying tapes that used to occur when tape numbers had to be dialed into the computer by hand.

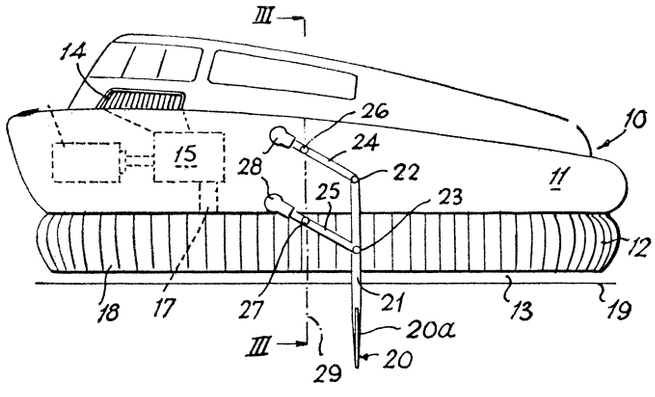
Michael and co-inventor John Y. Baskin assigned rights to Bell Labs in New York. PATENT: 3,335,410

HOVERCRAFT

Back to the Paddle Wheel

The old-time paddle wheel is better than the conventional screw propeller for driving a vehicle over water, says the British inventor of the hovercraft, Christopher Sydney Cockerell. It can work in shallower water, he says, and, unlike the propeller, it needs no fixed supporting structure below the surface to offer resistance—everything underwater is helping to propel the vehicle.

Cockerell last week patented a variation on the paddle wheel for use with air-cushion vehicles. Despite the



device's shallow draft, however, it still cancels a major advantage of most existing hovercraft, which are driven by propellers in the air: the ability to go on both land and water. Cockerell's invention is limited to nonamphibious hovercraft.

Conventional paddle wheels, he says, are somewhat inefficient because their blades, pointing outward from a central axis, do not enter and leave the water in truly vertical positions, and thus cause drag. Cockerell's design uses two or more blades, which alternately move down into the water, back and out again, remaining parallel to each other and at a fixed angle throughout each stroke.

A pair of crankshafts, one above the other, give the blades their motion, while moving one shaft relative to the other enables the angle of the blades to be changed.

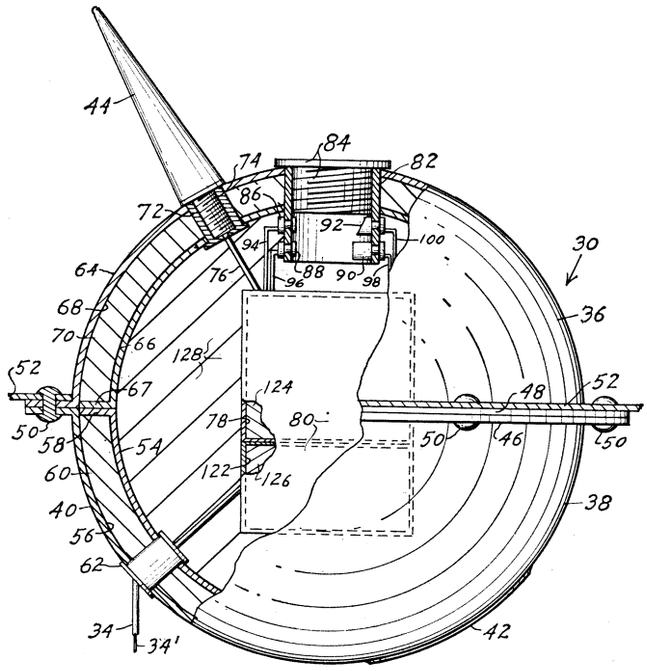
Cockerell assigned his rights to Hovercraft Development Ltd., London. PATENT: 3,334,609

ELECTRONICS

Rescue Beacon For All Craft

An emergency radio beacon for any land, sea or aircraft, designed to begin transmitting automatically if the vehicle crashes or is damaged, such as from weapons fire, was patented last week by a California inventor.

The unit, which looks rather like a World War II mine, goes on when a cable that extends along the vehicle is



broken, or it can be turned on manually. Half a dozen layers of casing and insulation are intended to armor the transmitter against just about anything, possibly including even a direct hit.

The outermost layer is noncorroding metal, to protect the unit from exposure. Next comes a thick heat shield of granulated asbestos, a second layer of metal, a shock-absorbing jelly, the steel housing for the transmitter, an electrically insulating material that fills all the empty space in the housing, and the radio itself.

The unit is "shockproof, fireproof and foolproof," says inventor Calvin L. Yandell of Fontana, Calif., and will work even if it is thrown completely clear of the vehicle. PATENT: 3,335,371