

# Current U.S. Patents

► A SYSTEM for landing aircraft on a cushion of air, rather than on the traditional wheels or floats, was patented by the U.S. Patent Office.

Using an air cushion instead of conventional landing gear would allow an airplane to come to a complete stop a few inches above a paved landing surface before touching down. The craft could, therefore, not only land on a very small spot, but cruise down to it over such otherwise inaccessible terrain as sand, ice, snow or tundra. The plane could land also on water.

The landing unit would be emptied of air in flight and would fit snugly into the fuselage so that the craft is aerodynamically sound. How such systems would perform is now being tested in wind tunnels at Textron's Bell Aero-systems Company, Buffalo, N.Y., to which rights to patent 3,275,270 were assigned.

Thomas Desmond Earl, and Wilfred James Eggington of the Bell company stated in the patent that the system makes high-speed landings and take-offs possible. The air cushion landings are designed for commercial and cargo planes as well as for military aircraft.

The landing gear would consist of a giant rubber tube, perhaps three feet in diameter when inflated, encircling the bottom of the plane's fuselage. The reinforced bottom of the tube is pierced by thousands of tiny vent holes through which the pressurized air jets out, forming the air cushion on which the plane floats above the ground.

The wind tunnel tests of the air cushion system are expected to be completed by the end of this year. The next step will be to attach a prototype unit to a C-119B Flying Boxcar in the spring of 1967 to investigate how the system operates for full-scale landings and take-offs.

Development of the system is supported not only by the company but also by the U.S. Air Force.

## Mechanical Digital Computer

A new computer patented is a binary digital computer that works mechanically instead of either electrically or electronically. This makes the computer a simple device with which the operations of binary digital machines can be visually demonstrated.

The motion of the parts as the midge-mechanical computer adds, sub-

tracts or multiplies are not only easily seen but can be followed by touch, since each operation is reduced to basic essentials.

The midget device reproduces mechanically the "on-off" and the "and-or" circuits of an electronic computer. It is available commercially from E.S.R., Inc., Montclair, N.J., to which rights to patent 3,273,794 were assigned.

The mechanical computer that has already helped several hundred thousand teachers, students and parents find out for themselves the basic operations of an electronic digital computer was developed by Dr. William H. Duerig and Charles D. Hogan of Montclair, N.J., and Irving J. Lieberman of West Orange, N.J.

The educational device, known by the trade name Digicomp, looks somewhat like an abacus but is operated mechanically.

## Other Interesting Patents

A ball-point pen that carries its own reconditioning device earned patent 3,274,975 for James J. G. P. Dehlsen, South Pasadena, Calif., who assigned rights to the Parker Pen Company, Janesville, Wis. The device, housed within the pen barrel, can be used to adjust the clearance between the ball point and its socket, the opening through which the ink flows.

Aircraft ranging from the F-104G Starfighter now in Viet Nam to a proposed supersonic transport still on the drawing boards owe or will owe much of the efficiency of their radar, communications and navigation systems to a device granted patent 3,274,597. By automatically comparing the signals from a miniature test antenna mounted on a slowly rotating model airplane, the "spiral integrator" helps to determine the best combination of shape, location, power and polarization for the antennas on a given aircraft. Alton M. Archer and Gene R. Wyatt, engineers at Lockheed-California Company, Burbank, Calif., assigned rights to Lockheed.

# Do You Know?

Huge rubber tanks that look like giant pillows are in use in Viet Nam as portable, easily operated gas stations, storing fuel for planes and tanks.

Quick clays that lose all their cohesive strength and act like a liquid when they are jarred or vibrated are generally found in far northern areas of the world.

The first of five dish-shaped antennas that will combine greater sensitivity and a sharper focus than any radio telescope of its type now existing will be finished in two or three years for use in California.

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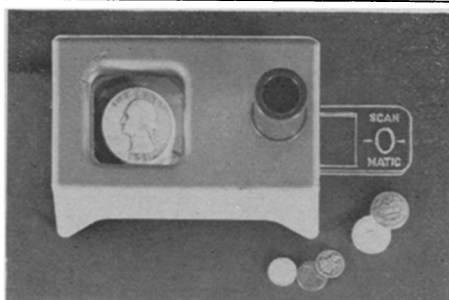
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