

diaphragm made of heavy ditching machine conveyor belting for a tight fit with a thin, circular iron sheet back.

Materials loosened from the walls are blown out ahead of the cleaner through holes in the "nose" of the device.

Pushed by pressure the go-devil can travel with a speed of from 3 to 5 miles

an hour under ordinary conditions. Continuous sections of $5\frac{1}{2}$ miles have been cleaned successfully.

Two trips with the scarifier and one or two trips with the go-devil make the inner walls of the pipe bright and shiny even in the low spots where accumulations are heaviest.

Science News Letter, August 19, 1939

AERONAUTICS

Patent Describes New Blind Landing System

Four Beams Are Used By New Method Which Gives Both Audible and Visual Signals to the Approaching Pilot

THE NEWEST blind landing system for aircraft, just granted a patent (No. 2,165,256) at the U. S. Patent Office, "talks" a pilot down to safety through four cigar-shaped, but invisible, radio beams that form a "funnel" leading down to the airport.

Invented by Clarence W. Hansell of Port Jefferson, N. Y., with patent rights assigned to the Radio Corporation of America, the new system provides a guide path in space formed by four sharply-directed radio beams.

When on the proper line the pilot hears only a buzz. If he is too far to the right he hears a voice repeating

"left-left-left." If too far up, the voice says "down-down-down." Similar "right" and "up" signals are given for incorrect landings that are too far off to the left or too far down.

Because the four beams are sent upward at low angles with one another the open end of the "funnel" is much larger than the other end which, of course, is a spot on the landing field.

The directions to the pilot can be either audible—as in the voice that repeats up-up, down-down, right-right, left-left, or they can be by visual means on an instrument in the cockpit.

Audible signals are perhaps prefer-

able, states the patent, because they leave the pilot's eyes free to search the fog-covered airport for first glimpses of the landing surface.

Other blind landing systems have quite intentionally gone over to instrument indications rather than voice signals, according to Washington radio engineers.

One method uses the interacting radio fields of two beams to provide a zone of equal intensity of signal that marks a horizontal line passing through the landing field. At the same time a third beam, properly pointed, provides a signal down which the plane can glide to a landing, in correct vertical orientation.

The Hansell system, in contrast, uses two beams to obtain this proper vertical line rather than a single one.

Science News Letter, August 19, 1939

BOTANY—GENETICS

Dean of Plant Explorers Honored With Medal

DR. David Fairchild, dean of America's plant explorers, is now decorated with the Meyer medal for plant introduction, a surprise tribute from the little group of men who search the world that our fields and forests may be enriched by crops and trees from other lands.

At the U. S. Department of Agriculture's plant introduction garden in rural Maryland, Secretary of Agriculture Henry A. Wallace handed Dr. Fairchild the bit of metal symbolizing the spirit of adventure and service of those who hunted vegetative immigrants fit for our continent.

Just 40 years ago Fairchild, now 70, came to Washington to pioneer the important work of plant introduction. The world became his garden. Many who worked with him in the years that followed joined in the Meyer medal ceremonies.

Many of the pioneers are dead, among them Frank N. Meyer, the USDA's first full-time plant explorer, lost at sea in 1918, who left a fund which makes possible the medal bearing his name. From China Meyer brought soy beans, the Chinese elm, and other living plants now very much at home in America.

Dr. Fairchild, now retired from government service, is still exploring for plants. He is planning another trip to the Spice Islands, sailing in a specially built Chinese junk.

Science News Letter, August 19, 1939

The first training school for teachers was started in the seventeenth century.



HONORED

Dr. David Fairchild, left, dean of America's plant explorers, is receiving the Meyer Medal for plant introduction from Secretary of Agriculture, Henry Wallace, with Mrs. Fairchild and P. Howard Dorsett, retired plant explorer, looking on.