

Current U.S. Patents

Asphalt "roads" laid about two feet below the ground hold water in the soil and may help increase crop yields—By Ann Ewing



American Oil Company

ASPHALT PLANT—The bean plants seen here were grown on plot with asphalt layer two feet beneath the ground without irrigation. The vigor, number of mature bean pods and size of plants resulting from the special treatment are quite evident.

► **THIN LAYERS** of asphalt, placed two feet below the surface of sandy or arid soil, may hold one key for relieving the increasing worldwide food shortage. The asphalt layers keep water from seeping down through the sand or ground, holding moisture where crop roots can use it.

A method of forming such a water barrier with asphalt earned patent 3,276,208 for John A. Bolt of Chicago, Ill., who assigned rights of Standard Oil Company (Indiana), a subsidiary of American Oil Company.

The barriers were tested on two Michigan farms during the 1965 and 1966 growing seasons. The tests showed that use of the underground barriers will permit cultivation of millions of acres of land not now suited to agriculture because it is too porous to hold the water it receives.

Using the barriers also results in significant increases in crop yields.

(See SN, 90 : 229, 1966.)

Computer Recognizes Patterns

A digital computer that can be taught to recognize the patterns found in letters of the alphabet or in numerals, in speech or from moving targets has been under experimental development during the past two years at Stromberg-Carlson, the electronics division of General Dynamics Corporation.

The pattern recognition system the

computer uses was granted patents 3,275,985 and 3,275,986, rights being assigned to General Dynamics, Rochester, N.Y.

The sensor used to observe the patterns can be electromagnetic, optical or acoustical.

Output of the sensor is transformed into a set of "observables" in digital form. These observables are applied to decision networks within the computer, which acts to classify them.

The system is believed to be the first using digital logic for pattern recognition.

It is known as APE, an acronym for Automated Pattern Equipment.

One of the principal designers of the system was Donald F. Smith of Stromberg-Carlson. Co-inventors also granted the patents were William H. Dunn, Curt F. Fey, Lavean N. Kanal and William L. McDermid.

A prime application of the system, which has been under development for several years, is for the U.S. Government. Specific uses are under security wraps.

Other Interesting Patents

A device for training people to perform heart-lung resuscitation was granted patent 3,276,147. Ralph M. Padellford of Nevada, Iowa, assigned rights to Iowa State University Research Foundation, Inc., Ames. Heart-lung resuscitation is an emergency pro-

cedure that combines artificial respiration and artificial circulation. Heart massage should never be applied to a person whose heart is beating, thus presenting problems in training in the emergency technique. These have now been solved by Mr. Padellford's device.

A three-dimensional radar system that has been kept under security wraps for slightly more than 20 years has finally been awarded patent 3,277,470. Dr. Robert M. Page, director of research at the Naval Research Laboratory, Washington, D.C., has given the Government free use of the system, one of several that have been developed.

A method for making sunscreens by extruding plastic rather than weaving wires earned patent 3,276,942 for Walkley B. Ewing of Fajardo, Puerto Rico. Mr. Ewing, who has some 30 patents to his credit, assigned the patent to Sunscreen Company, Fajardo, Puerto Rico. Sunscreens are a kind of non-movable Venetian blind in miniature. The extruded plastic ones change shape to deflect direct sunlight as the light intensity changes. They also do not require corrosion-preventing coatings, as do the metallic sunscreens now being produced.

Two different processes for treating cellulose fabrics with methylol compounds so that the material is flame resistant earned patents 3,276,838 and 3,276,897 for four scientists at the Department of Agriculture's Southern Regional Research Laboratory in New Orleans. Wilson A. Reeves and George L. Drake Jr. and their two co-workers assigned rights to the Government through the Secretary of Agriculture.

Do You Know?

Rose Island, a tiny nine acre dot in the South Pacific Ocean, is the *southernmost* land under control of the United States.

The salt cedar tree, common in the U.S. Southwest, "breathes" ground water into the air through its leaves, transferring 20 trillion gallons to the atmosphere every year and depriving a 900,000-square-mile area of the West of that much usable water.

Drowning not involving boats took an average of 2,808 lives in the United States during 1962-1964.

A double *bend* in the Mississippi River blocks off a 19-square-mile area in the extreme southwest of Kentucky so that it cannot be reached without passing through part of Missouri or Tennessee.

Pollution killed more than 11,750,000 *fish* in the United States last year.