

INVENTION

Patents of the Week

A Harvard University psychologist who taught pigeons to play table tennis was granted a patent for a cheat-proof machine for teaching humans.

► THE SCIENTIST who taught pigeons to play table tennis earned a patent for a machine to teach humans.

Dr. Burrhus F. Skinner, Harvard University psychologist, won U. S. patent 3,056,215 for his aid to teachers. He assigned patent rights to Rheem Manufacturing Company, New York.

The cheat-proof machine, about the size of a typewriter, has a window in which the items to be learned appear one by one. Only after the student has written his answer and moved a lever does the machine reveal the correct response.

The machine can also be set so as to provide a hint of the correct answer if the first response was incorrect. The items are all carefully graduated so that there are no big jumps from point to point.

Dr. Skinner believes that prompt reward for the right answer is the key to effective teaching by programmed machines. The immediate knowledge that his response was correct is the student's reward.

As an aid in determining whether the teaching program is unduly difficult in some parts, any incorrect replies marked by the students are also marked on the program, thus allowing direct observation of the occurrence and frequency of wrong answers for the individual questions.

Translator for Computers

The co-developer of the first all-electronic, general purpose computer, the ENIAC, was awarded a patent for an apparatus that translates information into computer language, known as binary code.

John Presper Eckert Jr. of Remington Rand Division, Sperry Rand Corp., Philadelphia, with Edwin I. Blumenthal and Herbert F. Welsh, also of Philadelphia, were granted patent 3,056,947 for the device, rights to which were assigned to Sperry Rand.

Their invention consists of a method for electrically converting information from punch cards to a binary code form, with means for detecting any improper punch code combinations.

For devising a method of making drinkable water from sea water, William F. McIlhenny of Lake Jackson, Texas, and Albert B. Baker of Freeport, Texas, were awarded patent 3,056,651, one of the 827 patents granted this week. They assigned rights to The Dow Chemical Company, Midland, Mich.

Their method consists of softening the water by removing part of the calcium and magnesium as well as the sodium chloride, or salt, using a cation exchange resin. This softened water is then distilled. The concentrated solution of alkali salts remaining

is then used, possibly after being strengthened, to regenerate the cation exchange resin for repeated use.

Softening the water before distillation decreases scaling of the equipment, providing more economical production.

Other Significant Patents:

Using copper sulfide or closely related compounds to influence weather artificially by turning undercooled clouds into ice particles to make rain or to prevent hail formation. Raymund Sanger of Wallisellen, Switzerland, and Hans-Rudolf Pruppacher, of Zurich, Switzerland, assigned rights to patent 3,056,556 to Machine Tool Works Oerlikon, Administration Company, also of Zurich.

Four methods for treating a slurry of asbestos fibers and rubber latex to form sheets. David A. Feigley Jr. of Manor Township, Lancaster County, Pa., and Leonard N. Ray Jr. of East Hempfield Township, also Lancaster County, assigned rights to patents 3,056,714 through 3,056,717 to Armstrong Cork Company of Lancaster.

An improved amplifier for neutrons. Dr. Lyle B. Borst of New York University and Paul A. Michael, East Paterson, N. J., assigned rights to patent 3,056,737 to The Dow Chemical Company.

A method for aging and flavoring meat in a home refrigerator in 12 to 48 hours using the mold *thamnidium*, which includes ergot, truffles, molds and yeasts. Rights to patent 3,056,679 were assigned by Beverly E. Williams, La Grange Park, Ill., to Hodges Research and Development Company, New York.

An explosive device for scaring pesky birds from farm lands, set up on a turntable so as to frighten them away in all directions, for which Peter J. Bender of New Castle, Del., received patent 3,056,376.

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ARCHAEOLOGY

Cave Paintings Found In Russian Mountains


► CAVE PAINTINGS done by paleolithic cave dwellers have been found in Kapov's cave in the Southern Urals in Russia.

The pictures of bear, wild horses, camels, red deer and others were scratched or painted in ochre 40,000 to 50,000 years ago, Soviet specialist, Prof. V. I. Gromov, reported in the Soviet Monthly, Science and Life, July, 1962.

• Science News Letter, 82:263 October 20, 1962

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