INVENTION

Patents of the Week

A method for training keyboard operators, a locomotive running on pulverized coal and a new kind of nuclear reactor fuel element have been patented.

➤ A METHOD for training keyboard operators accurately, now being used by the U.S. Post Office Department to give new skills to workers replaced by machines, has been patented.

The method relies on teaching by conditioned reflex. The student learns to push down on the correct keys that are slightly elevated toward his fingers during training. Since the learning process does not involve any trial and error on the student's part, bad habits leading to mistakes are avoided, giving a considerable increase in accuracy.

For the "method and apparatus for teaching physiological selection skills," John D. Goodell or Silver Spring, Md., and Edwin F. Shelley of New Rochelle, N.Y., won patent No. 3,021,611; rights were assigned to U.S. Industries, Inc., New York.

The device is known as Digiflex. Increasing numbers of operators must be trained to operate finger-keyboards and similar devices as machines take over more and more of the routine sorting and other jobs previously done by hand.

The usual trial-and-error method of learning is "long and tedious," and the quality of resulting work "generally unpredictable," the inventors said. Error patterns established by this method are difficult if not impossible to eliminate completely.

Using the Digiflex, the trainee advances through a prescribed training program learning only the correct keyboard operations. The keys to be pressed are displaced slightly upward and the trainee, as a natural reflex action, presses down for correct operation.

The inventors recommend presenting the visual image about half a second before the keys are moved upward. This gives the trainee sufficient time to recognize the image.

Post Office employees being trained, for example, can be taught in one step, rather than the conventional two steps, to read an address and rapidly convert it to a code number equivalent. The Post Office has 55 Digiflex consoles for trainees and seven for instructors.

Pulverized Coal Locomotive

Peter Robert Broadley of Elizabeth, N.J., was awarded patent No. 3,021,797 for his electric locomotive that runs on pulverized coal. He assigned rights to Bituminous Coal Research, Inc., Washington, D.C.

The coal-burning power plant was devised as a substitute for diesel power in conventional diesel-electric locomotives. It can also be used for permanent power plants.

The raw coal used as fuel has a particle size less than three-eighths of an inch. This size is "free from danger" of spontaneous combustion in the pressurized air conveying it to the burner. Incompletely burned particles are removed before the hot, pressurized gases resulting from burning the pulverized coal are used for power.

New Nuclear Reactor Fuel

A new kind of nuclear reactor fuel element for use in reactors of high-power density to generate steam for producing electricity won patent No. 3,022,240 for Charles H. Bassett of Riverdale, Md. He assigned rights to the U.S. Atomic Energy Commission.

The fuel elements are made of uranium oxide pellets enriched with uranium-235. They are spaced apart by wedge discs formed of uranium-238 or thorium-232 that absorb slow neutrons to produce plutonium-239 or uranium-233, respectively. Both are fissionable. The reactor, therefore, "breeds" more fuel as it burns uranium.

Method Separates Chemicals

Also assigned to the Atomic Energy Commission were rights to patent No. 3,022,134, awarded to Paul R. Fields of Chicago and Nadine M. Isaac of Brussels, Belgium. They devised a method of separating curium and americium, both of which are produced in nuclear reactors burning uranium-238.

After separation from americium, the curium is valuable as a power source for use in satellites, since it takes more than five months to lose half its radioactivity. The separation is achieved by contacting the molten salt of the two elements with a dilute organic solvent at a temperature of 300 degrees Fahrenheit.

Patent No. 3,022,236, rights to which were also assigned to the Atomic Energy Commission, was granted to Aaron J. Ulrich, Wheaton, Ill., James W. Butler of Hinsdale, Ill., and Albert J. Hatch of Chicago. It covers a device using radio-frequency methods for containing the plasma necessary for controlled thermonuclear reactions.

• Science News Letter, 81:158 March 10, 1962

INVENTIONS

Common Market Patent Possibility for Future

➤ THE IDEA of a common market patent that might replace the multiple patent procedures in the Western world is creating a considerable amount of interest and apprehension in industrial and patent law circles.

In order to have manufactured products flow freely from one of the common market nations to another, it is argued that barriers imposed by patent rights separately determined for each country would have to be lowered. One way to do this would be to have a common market patent, which would be valid in all of the countries.

The idea of such a patent seems to have originated in Germany because of the intensive manufacturing interests and operations in that country.

At the present time patents have to be applied for and obtained in a multiplicity of national jurisdictions. The patent laws and the criteria for patentability are somewhat different in each of the countries of the world. The United States and Canada have the most closely allied patent systems.

Trademarks are becoming a concern of common market countries, and the question arises as to whether they, also, can be put upon an international basis.

While the common market is not concerned, it is known that the trademark Bacardi for rum, which was previously held by a Cuban corporation, has been transferred to a United States organization with the prospect that it may not be possible for Cuba to export rum with the Bacardi label to non-Communist countries where the trademark is recognized.

• Science News Letter, 81:159 March 10, 1962