

INVENTION

Space-Saving Machine

► U. S. PATENT Office officials now are creating a "space-saving device" to solve their acute filing problem. They report, however, no plans to get a patent on their machine.

The space saver will be too specialized in its work to merit a patent, reports T. B. Morrow, Patent Office executive officer.

By 1955 all patent-storage space in the vast underground three-acre file room will be exhausted. Patent officials have two choices:

1. They can expand their files—a costly procedure in the eyes of nimble-scissored budget trimmers.

2. They can microfilm about 250,000 patents, install a \$130,000 reproducing machine and, in five years, cut expenditures for filing equipment and printing by as much as \$70,000 above the machine's cost.

Patent officials are excited over the possibilities offered by the latter choice.

In plan, the machine will microfilm the first 250,000 patents granted by the Patent Office. This will compress on 1,400 feet of film enough patents to extend the files another five years. By the end of that time, more patents can be microfilmed to extend the files another five years.

Made up of electrical assemblies already proven, the machine will be able to scan as many as 1,000,000 patents a day on micro-

film. It will be able to select automatically and reproduce about 1,000 patents a day. This is more than adequate since requests for the old patents are comparatively few.

The machine's economic advantages become vivid when it is considered what must be done if the Patent Office has to expand its files. This would entail renting or constructing more storage space, either of which would be costly.

The storage space would have to be filled with steel files to house the patents. These files are specially designed for the purpose. They are divided into inch-wide slots, 50 slots to a row and 10 rows tall on both sides. The file slots are arranged according to a decimal system to make it easy to file and pull patents. Steel files to handle one year's normal issue of 40,000 patents cost \$25,000.

Increasing the file space also means increasing personnel to handle the patent copies. One patent puller working at top speed can only draw about 1,000 patents a day from the files. Normal draw, at present, is 20,000 patent copies a day.

Since the machine will make photo copies of patents ordered, the Patent Office's printing bill will be cut. It costs about \$15,000 a year merely to replenish the printed supply of old patents that becomes exhausted in the group to be microfilmed.

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studying the body's temperature-regulating mechanism in the brain. This is located in the hypothalamus and controls shivering.

In animal studies, it was found that an electrical stimulus of a certain area of the hypothalamus stopped shivering suddenly. In actual practice, shivering is initiated when sensory nerves react to cold exposure. A sudden emergency involving self defense or flight may call for use of muscles involved in shivering, and thus "turn off" the shivering.

The practical value of the research is related to problems of cold encountered by airplane pilots.

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VETERINARY MEDICINE

Disease Prevention Studies

► A METHOD of experimentally producing erysipelas, the nation's number two swine killer, will help solve the problem of controlling the disease.

A scarification of the skin method, which produces the disease in selected hogs, has been developed by Dr. R. D. Shuman of the Bureau of Animal Industry, U. S. Department of Agriculture. It is similar to a smallpox vaccination for human beings.

Tests of an experimental vaccine for erysipelas have been greatly handicapped by the lack of a means of producing the disease. Hogs were vaccinated in field tests, but scientists were unable to determine definitely if the animal had been immunized.

The scarification method makes it possible to determine a hog's immunity or susceptibility to the disease. For the first time, it is possible to measure the degree and length of immunity produced by vaccination. Experiments have indicated that sows should be vaccinated before breeding, and baby pigs at weaning age.

As yet veterinary scientists have been unable to determine how swine get the disease. The American Veterinary Medical Association has suggested that the new method may be used to trace the complete history of the infection.

Erysipelas is caused by a bacterium. In the acute septicemic stage, it is frequently fatal and its symptoms are similar to hog cholera. One form of the chronic disease is akin to arthritis, with lameness and swollen joints. A skin form is frequently called the diamond-skin disease because of the red diamond-shaped patches that form on the skin.

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PHYSIOLOGY

Body's Natural Defense Against Cold Studied

► TO PROVIDE better evaluation and treatment of injuries resulting from exposure, the human body's natural defenses against cold are being investigated.

Dr. Alan Hemingway of the University of California at Los Angeles is performing the study under a grant from the U. S. Air Force.

Cold defense mechanisms include: 1. shivering, 2. constriction of certain blood vessels near the skin's surface to reduce heat loss, and 3. increased activity of certain hormones, which produces additional heat.

Particular emphasis has been placed upon