

INVENTION

Patent Business Booming

Creative genius in United States is on the upswing if number of patent applications made is any indication. Nearly 8,000 more "new" ones await action this year than last.

► AMERICA'S CREATIVE genius seems to be in good health, the Patent Office observed after issuing its first group of patents for 1954.

C. L. Roberts, patents application officer, said a total of 105,303 "new" patent applications either have been acted upon by patent examiners or are awaiting the attention of the 70 specialists. This compares with a figure of 97,747 reported at the beginning of 1953.

This figure, however, does not include patents that have been referred back to attorneys for amendments that have not as yet been received. Neither does it include the thousands of patents still in the mill from past years.

Patent Examiner J. L. Brewrink leads the list for 1954 with a total of 3,675 applications awaiting his initial or further attention. Mr. Brewrink examines patents covering guns and torpedoes, explosives, radar, and electrical directional and distance instruments.

Examiner H. Surle comes in second with a waiting list of at least 2,148 patents dealing with natural resins, proteins, amide chemical compounds and general organic processes.

Examiner E. J. Drummond follows closely with a total of 2,141 applications for patents

on various types of metallic, paper, wooden, glass and special receptacles.

"Low" man in the list of 70 examiners is E. L. Morse who has 919 applications dealing with gadgets that push and pull, wind and reel, keep time or govern other machines by time machines, or inventions that apply to railway mail delivery.

With the first week's issue of patents, the Patent Office now has given protection to 2,665,420 mechanical, chemical and electrical inventions since it issued its first patent "Making Pot and Pearl Ashes" to Samuel Hopkins on July 31, 1790.

Although only three patents were issued that first year, the business of protecting ideas with patents caught on quickly and soon America's genius was turning out inventions at a furious pace for the times.

From 1790 to 1873, inventions patented included: Brooms, cotton gins, bedsteads, animal traps, corn shellers, school desks-and-seats door locks, fences, foot warmers, gas lights, gold washing devices, ink-stands, horseshoes, hoopskirts, patent medicines, looms, linaments, pantaloons, oil cans, printing presses, rotary steam engines, spectacles, sewing machines, street-sweeping machines, railway car spittoons, the telegraph, water wheels and washing machines.

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in an attempt to reduce the economic loss. They have reported that, in many respects, the cancers they have found in animals resemble those cancers that are known to humans.

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BOTANY

Plant Root Takes in Minerals Just Above Tip

► BOTANISTS USED to be puzzled as to how a plant or tree could absorb sufficient mineral nutrients through its root tips. Now it appears that the plant actually does not rely on the tips; instead absorption occurs higher up in the more mature regions of the root, where root hairs are present.

In experiments by Drs. H. H. Wiebe and P. J. Kramer, botanists at Duke University, radioactive nutrients, such as phosphorus and strontium, were supplied to barley roots at various distances above the tips. By exposing the roots to ordinary photographic film, Drs. Wiebe and Kramer were able to get pictures showing the distribution of these mineral nutrients.

These pictures, or autoradiograms as they are called since the radioactive plants are really taking photographs of themselves, showed, on a black background, a bright area in the root zone proportional in size and intensity to the amount of radioactive mineral present.

When only the root tip was supplied with the mineral nutrients, the resulting photograph showed a bright area only around the tip, indicating that the nutrients had not moved up the root to other parts of the plant. When, however, the radioactive minerals were supplied to a section of the root about an inch higher up, the autoradiograms showed that the minerals were distributed throughout the plant.

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PUBLIC HEALTH

Cancer in Food Animals

► CANCER AFFLICTS animals on our farms and ranches, as well as human beings. Although cancerous meat is not known to be dangerous for human consumption, it is condemned by government inspectors. This cost the livestock industry an estimated \$2,500,000 to \$3,000,000 in cattle last year.

Dr. C. H. Pals, assistant chief of the meat inspection service of the U. S. Department of Agriculture, has reported that 10,235 carcasses, valued at \$250 to \$300 apiece, were condemned as food by inspectors because of malignant growths in fiscal year 1953. The total number slaughtered was 15,000,000.

In addition to these animals, cancer of the eye, or carcinoma, was found in 25,608 cattle and the heads were condemned. In these cases, the cancer was in an early stage and restricted to the head.

Lesser numbers of animals were condemned in other species. Only 1,638 out of 57,000,000 hogs were condemned.

Dr. Pals said no scientific research has

ever established that cancerous meat is injurious to humans. The meat is condemned because "the public would probably not want to eat such meat and it seems wise to take no chances with a disease like cancer where there is so much unknown."

An additional factor considered is that usually, by the time they are slaughtered, the animals are in poor condition because of the disease.

The incidence of cancer in meat animals is much less than in man. One important reason for this is that animals are usually slaughtered before or just after reaching maturity. Cancer has a much higher incidence among older humans than younger.

Dr. Pals pointed out that meat inspectors do not attempt to classify the cancers they see in meat. He reported that the largest number of carcasses condemned were from animals in which cancer of the eye had spread to other parts of the body. This condition is known as metastasis.

Veterinarians in the Department of Agriculture are doing research on these cancers

ENTOMOLOGY

Developing Corn Resistant to Borer

► CORN STALKS scorned by the Southwestern corn borer may be the foundation of the development of a borer-resistant corn. This would bring corn farming back to areas devastated by the borer in the past.

Dr. Herbert Knutson, entomologist at Kansas State College, has found that fewer girdled and fallen stalks of corn are seen in plots planted with seed from stalks that borers started to enter but left.

This means the development of borer-resistant corn is a distinct possibility, Dr. Knutson commented.

A major pest in Kansas, Oklahoma and Texas, the Southwestern corn borer has forced some areas to abandon corn production. It also affects crops in New Mexico, Arizona, Arkansas, Missouri and Nebraska.

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