INVENTION

Radiation Improves Oils

A method for using atomic radiation to improve lubricating oils and a design for a new reflex camera are two recent examples of patents issued by the Federal Government.

➤ THE USE of atomic radiation as a tool for improving lubricating oils and their additives has been described in two inventions recently granted patents by the Federal Government.

The first patent, No. 2,803,598, describes the polymerization and copolymerization of unsaturated esters by radioactivity. By a proper selection of starting materials, the inventors explain, along with radiation intensity and radiation time, polyesters useful as pour point depressants and viscosity improvers for lubricating oils are formed. In addition, lubricating oils containing such polyesters are improved proportionately.

Gamma rays, X-rays, beta rays and alpha particles can all be used and can be obtained in the course of converting uranium, thorium or other fissionable material in an atomic reactor. The use of the radioactive material to produce improved oils, the inventors state, is no more expensive than current methods used to achieve the same end.

They also point to four advantages of the process: high temperatures are not required to initiate the polymerization reaction; the reaction is easily controlled; there is no catalyst contamination; and radiation initiation is readily adaptable for continuous polymerization processes.

The invention was made by James F. Black, Roselle, and William C. Hollyday Jr., of Fanwood, N. J. Messrs. Black and Hollyday shared in the development of the second patent, No. 2,803,599, along with Thomas S. Tutwiler of Watchung and Henry R. Ertelt of Fanwood, N. J. Generally, it uses the same basic method for improving lubricating oils by using atomic radiation. It specifically relates to a new process for the formation of viscosity index improvers by polymerization of unsaturated nitrogen compounds.

Both patents were assigned by their inventors to the Esso Research and Engineering Company of Delaware.

Camera Receives Patent

➤ A TWO-IN-ONE reflex camera with a single setting mechanism for both cameras has been invented.

With the camera, a photographer can:

1. Take black and white and color pictures of the same subject.
2. Use either black and white or color film in two different sizes.
3. Use a filter on one shot and not on a second shot taken almost at the same time.

The invention that makes the two-cameras-in-one possible is the work of Hermann Friedrich Albrecht of Braunschweig, Germany, and is destined for use by the German firm of Franke & Heidecke, makers of the "Rolleiflex" and "Rolleicord."

To achieve his multiple camera using the same housing as that now being used for the conventional twin reflex cameras, Mr. Albrecht uses the upper chamber or finder chamber for the second picture-taking camera. He provides this once dormant chamber with its own shutter and supply of film and shifts the reflex mirror out of the way when a picture is to be taken.

Mr. Albrecht has also provided a single knob for setting the diaphragms of both cameras independently or together. With the dual setting device, he points out, the shutter speed can be changed while the aperture is kept the same or vice-versa.

He was granted patent No. 2,800,842 and assigned the patent rights to Francke & Heidecke, Fabrik Photographischer Prazisions-Apparate of Braunschweig, Germany.

Science News Letter, August 31, 1957

PUBLIC HEALTH

Urges Drive to Find and Treat Hidden Alcoholics

➤ A DRIVE to find cases of hidden alcoholics comparable to the mass X-ray program to bring to light hidden tuberculosis has been urged by Henry L. McCarthy, Commissioner of Welfare in New York City. He spoke at the annual meeting of the National Council on Alcoholism in Chicago.

One place to discover the hidden alcoholic before he winds up on Skid Row is in the family relations or Home Term Court. Each year in this court hundreds of cases are heard where a desperate wife has finally had to hail her husband into court because he has gone on a rampage and beaten her and sometimes beaten the children as well.

In case after case, it develops that the assault takes place when the husband is drunk and in case after case the wife says that the man is a wonderful husband when he is sober.

Yet in 80% of these cases, the men still have jobs and when they are sober they are supporting their families.

The most important aspect of this court, Mr. McCarthy told the meeting, is its "case-finding" function. Here the alcoholic can be spotted at a stage when something definite can be done to arrest the otherwise sure descent of that husband into a broken man who leaves a broken home.

The New York Department of Welfare, Mr. McCarthy reported, has joined with the Home Term Court in setting up an alcoholic clinic to try to deal with these defendants right at the point of case-finding. Stinging under the humiliating experience of arrest and arraignment, the alcoholic husband is likely to be receptive to an offer of help in overcoming his illness.

"If only one family is saved from long term dependency—say a family of a young man with several small children—" Mr. McCarthy commented, the saving in relief dollars will reach many thousands of dollars before the children are grown up.

"The saving of human resources and the substitution of a happy normal household for a lifetime of misery is, of course, the greater boon."

Science News Letter, August 31, 1957

CHEMISTRY

Make Glue With Strength Of 8,000 Pounds an Inch

➤ A SYNTHETIC glue with a strength of 8,000 pounds per square inch when cooled to 450 degrees below zero Fahrenheit has been developed by scientists at the National Bureau of Standards Laboratories, Boulder, Colo.

The material is epoxy resin, Drs. Michael McClintock and Michael J. Hiza reported to the 1957 Cryogenic Engineering Conference meeting in Boulder. Tests have shown the material, known to be an unusually effective glue at room temperatures, exhibits "remarkable strength" when cooled close to absolute zero.

The strong glue was needed to bind together the copper coils in an electromagnet used at the Los Alamos Scientific Laboratory in studies of tiny atomic particles. The coils are cooled with liquid hydrogen, and the epoxy resin was found to contract at the same rate as the copper.

Science News Letter, August 31, 1957

TECHNOLOGY

Army Develops Anti-Tank-Mine Planter

➤ A MECHANICAL mine-planter that works like a "Lazy Susan" is taking the load off soldiers' shovels, the U. S. Army Corps of Engineers Research and Development Laboratories, Ft. Belvoir, Va., has revealed.

The anti-tank-mine planter carries the mines in a round, rotating "Lazy Susan" type magazine, which automatically feeds them to the planting mechanism, mainly a large plow that opens a trench to receive the mines.

The planting mechanism arms the mine, lifts the turf, deposits the mine and drops the soil back into place.

The machine needs only one man to operate it. Formerly a number of soldiers had to go out into the field with shovels and "plant" each individual anti-tank mine.

The planter is the result of a joint effort of ERDL engineers of the Mine Warfare Branch, and the International Harvester Co., Chicago. The mechanical mine planter is mounted on pneumatic tires, and can be pulled by any large tractor. For transport, it can be towed at highway speeds.

Science News Letter, August 31, 1957