

## INVENTION

# Patents of the Week

A method for making champagne from wine using a thin covering of petroleum jelly or paraffin oil during the process won three Russians a patent.

► A METHOD for making champagne from wine in a continuous process won three Russians a patent.

The Russians are known the world over as vodka drinkers. However, they also drink champagne. To improve the quality of champagne, three Soviet citizens have patented a method of covering the fermenting wine with an extremely thin layer of deodorized petroleum jelly or paraffin oil during the production process.

The wine is fermented with yeast in a series of connecting tanks and saturated with carbon dioxide, which helps to give the "bubbles" typical of champagne. The wine is cooled continuously until the temperature is reduced to freezing when it is discharged from the last tank.

Then liqueur, a solution of sugar and aged wine used to produce further fermentation, is added, and the champagne product is further cooled to 24 degrees Fahrenheit.

This process for "champagnizing wine" and the equipment for doing so won patent 3,062,656. It was awarded to Georgui Gerasimovich Agabalianz and Artemi Artemievich Merzhanian of Novokuznechnaia, Krasnodar, and Serguey Alexeevich Broosilovski of Moscow, USSR.

## Growing Crops in Dry Regions

Two related methods for growing crops in dry or semi-arid regions were awarded patents 3,061,974 and 3,061,975. Robert A. Louis of Fanwood, N. J., and Irven F. Wagner and Henry J. Hibshman of Plainfield, N. J., assigned rights to Esso Research and Engineering Company.

Their inventions cover the use of petroleum-based coatings to establish and sustain grass or other crops on lands that receive insufficient rainfall for normal cultivation without irrigation.

Asphalt mulches are placed over the seed beds in order to trap and conserve the moisture. Provision is made for storing rain that falls in excess of that needed for crop growth.

Millions of acres of potentially valuable grazing lands in the western half of the United States as well as in other countries normally do not receive sufficient rainfall to reseed and establish grass crops for raising livestock. The aim of the asphalt coating method is to put such lands into productive use.

## Electric Toothbrush Design

The design for the cordless General Electric battery-powered electric toothbrush now on the market was given design patent 193,972. The toothbrush holder is stored in a container whose cord can be plugged

into any household outlet, thereby recharging the battery. Individual brushes can be inserted in the holder. Many dentists recommend certain electrically safe automatic toothbrushes because they give better cleaning than the usual hand brushing.

## Other Significant Patents Include:

An electronic method of amplifying the light received from faint sources, such as stars, so that it can be photographed. Dr. James Dwyer McGee of London, England, assigned rights to patent 3,062,962 to the National Research Development Corporation, also of London.

For campers and fishermen who want to make toast on a camp stove, a device that is inexpensive to manufacture and simple to use. For the toaster attachment, which can be adapted for other applications, Robert A. B. Lang of Renfrew, Ontario, Canada, received patent 3,062,127.

A drawing instrument for producing ornamental designs, useful not only for children and adults but as part of occupational therapy, for which Margaret F. Carty of Painfield, Vt., was granted patent 3,061,946.

A child's vehicle consisting of a platform propelled by two hand rollers. Patent 3,062,560 was awarded to Phillip E. Dunstan of Seattle, Wash.

An improved method of manufacturing high wet-strength paper that won patent 3,062,703. Bernard T. Hofreiter, George Earle Hamerstrand and Charles Louis Mehltretter of Peoria, Ill., assigned rights to the Government through the Secretary of Agriculture.

A process for making panels more sound-proof for which Bill G. Watters of Nahant, Mass., assigned rights to patent 3,062,316 to Bolt Beranek and Newman, Inc., Cambridge, Mass.

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## Do You Know?

California has about 50,000 miles of irrigation *ditches*.

The future may see *batteries* that run on a hydrocarbon and air.

Muscular *dystrophy* now afflicts some 200,000 Americans, or one person in 925.

The first *agency* established by the government as a result of scientific study was the U.S. Steamboat Inspection Service, in 1837.

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General Electric

**DIAMOND CRYSTAL**—Dr. Francis P. Bundy shows models of carbon atoms, widely spaced in the graphite crystal structure (black) and more tightly packed in the diamond structure (white). Both models have the same number of "atoms," indicating the much higher density of diamond compared with graphite. The spacing of the spheres representing carbon is about 300 million times the actual spacing of the carbon atoms in graphite and diamond.

## CHEMISTRY

### New Method for Making Diamonds

► A NEW "DIRECT PROCESS" for making diamonds was announced by General Electric scientists.

Dr. Guy Suits, General Electric vice president and director of research, said that converting carbon from its ordinary form as graphite into diamond requires compressing the carbon atoms into a tighter atomic arrangement.

General Electric first announced the achievement of man-made diamonds nearly eight years ago. Two keys to the diamond-making process have been described as the use of a metal catalyst that facilitates the transition of carbon atoms from the graphite crystal structure to the diamond crystal structure, and the practical achievement and maintenance for long periods of the highest combined pressures and temperatures.

Now, as the result of new techniques developed by Dr. Francis P. Bundy of the General Electric Research Laboratory, it has become possible to achieve pressures and temperatures so high that the metal catalyst is no longer needed.

Dr. Bundy's new process uses an improved superhigh-pressure apparatus in a large hydraulic press. He has simultaneously achieved pressures as high as 3 million pounds per square inch (equivalent to the pressures believed to exist 400 miles beneath the earth's surface) at temperatures above 9,000 degrees Fahrenheit.

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