

# • Top Patents of The Year •

If you want the patent numbers of the inventions described here send a three-cent stamp to SCIENCE NEWS LETTER, 1719 N Street, N. W., Washington 6, D. C. and ask for Patent Bulletin 1948.

Notable and interesting inventions patented during the year include:

Analysis of the atomic makeup of minerals by means of a microanalyzer, built somewhat like an electron microscope except that X-rays are used instead of a stream of electrons.

Improved method for rapidly boring minute holes through tiny diamonds with an electric current fed through the steel needle, the diamond itself completing the circuit.

Increased production of penicillin through treatment of the molds that produce it with X-ray doses powerful enough to create mutated strains that produce larger "crops."

Penicillin in higher concentration and with less tendency to break down before removal from the culture fluid by adding the glucose or corn-steep liquor gradually and including considerable quantities of protein.

Use of weak solutions of 2,4-D to prevent the growth of air-borne bacteria without damaging the mold from which penicillin is harvested.

More efficient extraction from Southern pines of the gum that yields turpentine and rosin by spraying with 2,4-D cuts made through the bark of pine trees.

Food rich in fats, proteins and vitamins from the plant-disease fungus *Fusarium lini*, long notorious as the cause of flax wilt, that can be grown in large quantities on spent sulfite liquor.

Production of the rare-earth element thorium in metallic form 99.5 per cent pure by mixing thorium oxide with metallic calcium and freeing the thorium by converting the calcium into calcium oxide.

Methods of making germanium metal impregnated with helium gas suitable for high-grade rectifiers to convert alternating current into direct current.

Efficient and safe method for producing uranium deuteride by bringing concentrated deuterium or double-weight hydrogen into contact with solid uranium under heat and reduced pressure.

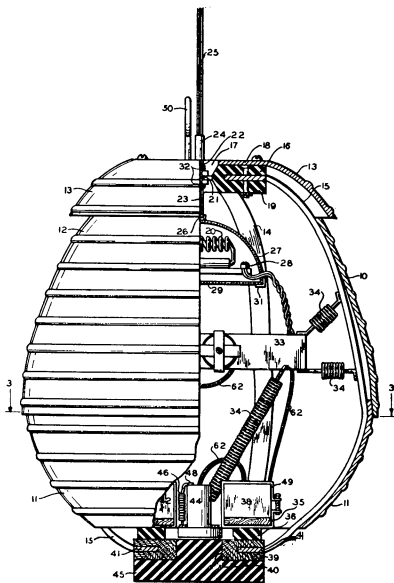
Production of uranium, source of atomic energy, from low-grade domestic carnotite ores by chemically separating from the worthless ingredients the uranium, radium and vanadium in the ore.

Simple, practical and reliable method for giving stainless steels increased resistance to high-temperature stress-rupture by heating up to 2,250 degrees Fahrenheit.

Exhaust nozzle for rockets and rocket motors, with an asphalt composition protective coating to keep the metal from melting in the extreme heat of the discharge gases.

Sweet-potato starch of superior quality obtainable in four hours, as against the 72 required at present, by slicing and grating the roots, adding lime water, and separating the starch in a centrifuge.

Clutch device for motor vehicles which combines the advantages of an electromagnetic clutch and the mechanical centrifugal type.



Robot weather station, on the same general principle as the radiosonde, built to be dropped from aircraft in the midst of polar wastes or on top of unscalable mountains. Picture shown above illustrates this invention.

Starting a fire at the bottom of an oil well to heat the oil-bearing sand and speed up flow in low-yield or nearly exhausted wells.

Replacement for certain uses of optical "flats" with carefully selected pieces of plate glass.

Glass lenses of field glasses, telescopes and range-finders made scratch-proof by depositing on them in a vacuum a thin layer of vaporized quartz.

Corn sheller that can be attached directly to the picker; machine that not only shells the grain but shreds the stalks.

Railway car wheels, without heavy axles, mounted in tandem with a strong supporting frame on both sides that enables trucks to "lead" each other around curves.

Electric motor with rotor of three or more segments of a piezoelectric crystal whose vibrations, in tune with a rapidly oscillating current, can be converted into rotary motion.

Microscope in which the angle of the eyepiece alone can be adjusted while the rest of the instrument remains unchanged.

Movie projector that sweeps the completed picture onto a curved screen as much as a full half-circle in extent by scanning the screen with a several-sided rotating mirror.

Automatic telephone instrument for dialing any number in any city in any state.

Science News Letter, December 18, 1948

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