

## INVENTION

# Current U.S. Patents

A vertical take-off and landing aircraft with delta wings that turn like helicopter rotors at take off and lock in place during flight can attain supersonic speeds.

► A JET-POWERED PLANE that can take off and land like a helicopter yet fly at speeds faster than sound was awarded a patent by the U.S. Patent Office in Washington, D.C.

The VTOL (Vertical Take-Off and Landing) aircraft has a modified delta wing which turns like helicopter rotors when the plane takes off. Once in the air the wing, mounted atop the fuselage, is locked in place for supersonic flight.

The heli-jet earned patent 3,159,360 for Tubal Claude Ryan, San Diego, and Peter F. Girard, La Mesa, Calif. Patent rights were assigned to the Ryan Aeronautical Company, San Diego.

The combined wing and rotor is very efficient over an extremely wide range of speeds, the inventors report in their patent. Since the wing is in a fixed position only in high-speed flight, its area can be much smaller than conventional aircraft.

The entire wing is used in both vertical and horizontal flight and at all speeds, without the need for retractable structures or changes.

In addition, the plane's entire control system can be operated continuously by the same pilot's controls during both vertical and high-speed flight, making the plane simple to operate.

## Coffee Substitute

It smells like coffee and tastes like coffee but it is made from the vines of tomatoes and from dandelions. The coffee substitute has no name yet.

The possibility of making a synthetic coffee on a commercial basis is now under consideration by a large food-processing company, Maxie L. Anderson of Albuquerque, N. Mex., who was assigned 11% of the patent rights, said.

Vincent De Santa Luce of Compton, Calif., was granted patent 3,158,458 for the coffee substitute and the method of making it and other food products. The preferred process, he said, is to use tomato vines without tomatoes but with the roots, and the entire dandelion plant.

## Other Patents Issued

A magnetic system of transportation uses the force of repulsion between magnets of the same polarity to propel a vehicle. Geoffrey Richard Polgreen, Wendover, England, assigned rights to patent 3,158,765 to the General Electric Company Limited, London.

Chemical compounds claim to be useful for fertility control. Alexander D. Cross of Mexico City, Mexico, assigned rights to

patent 3,158,604 to Syntex Corporation, Panama, Panama.

A basic method for making plutonium compounds earned patent 3,158,614 for Drs. Glenn T. Seaborg, chairman of the Atomic Energy Commission, John E. Willard and Stanley G. Thompson. Rights were assigned to the AEC.

• Science News Letter, 86:399 December 19, 1964

## Nature Note

### Tiny Owls

► THERE MAY BE AN ELF in your cactus. One of the tiniest owls in the world is the elf owl, *Nicrathene whitneyi*, about five and one-half inches high, which likes to set up housekeeping in a giant cactus.

This tiny saucer-eyed elf is one of the few birds to adapt to desert life. He hides in the cool depths of a prickly cactus during the heat of the day and hunts his insects for food by night.

All owls are birds of prey, feeding on other small birds, reptiles, mammals, fish and insects. They catch their prey mainly with their sharp powerful claws and are aided in their night hunting by their bright eyes, highly developed ears and by their talent for silent flight. Special fragile filaments on the edges of their wing feathers enable them to swoop down on their prey without a sound.

Most owls have a facial disc made up of special feathers surrounding each of their round, gleaming eyes, giving them a solemn, staring look that has caused many people to denounce them as birds of ill omen.

Owl's eyes are located on their heads in an unusual fashion—both eyes face forward, giving them a binocular vision. Other birds must scrutinize an object with only one eye at a time.

The 134 species of owls in the world are found in all sorts of habitats, from arctic wastes to high mountains, from lush tropical rain forests to barren deserts. The only places they are not found is the Antarctic and a few of the isolated oceanic islands.

Another tiny owl is the pygmy owl. This little brown bird with dark streaked breast is found along mountain streams and canyons. Having established his nest in an old woodpecker hole or a cavity of a tree, this little fellow prefers to hunt during the day.

The burrowing owl is a tiny bird of the plains and deserts. For his home he uses either an abandoned squirrel hole in the ground or digs his own.

• Science News Letter, 86:399 December 19, 1964

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