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INVENTION

Patents of the Week

A turbine-powered lifting device, a method for detecting chemicals in a mixture, a sun-tan device and a chemical stick for cooling beverages have been patented.

➤ A **TURBINE-POWERED** device to lift a person into the air for relatively short periods of time has been patented.

With full fuel supply, it weighs no more than 100 pounds. The device can be readily assembled or taken apart, and may be started with ease by an operator. Relatively little instruction is needed to learn how to operate the "turbo-fan lift device," inventors Cecil G. Martin of Cleveland and Robert L. Cummings of Wickliffe, Ohio, claim in patent No. 3,023,980.

Persons of varying weight can use the device. The turbo-fan assembly is mounted on the operator's back. Fuel from the container is fed into combustion chambers surrounding the turbine. Jet nozzles that can be rotated are on each side of the operator's body.

Rotation of the turbine drives a low-pressure, high-mass flow compressor that is mounted back-to-back with the turbine. The operator moves a hand control to rotate the nozzle for going forward or backward. The hand control also has a throttle to regulate fuel flow and, therefore, the amount of thrust.

Mr. Martin told **SCIENCE SERVICE** that Thompson Ramo Wooldridge, Inc., to which rights were assigned, is engaged in an active program to develop the lift device. However, he said, no details beyond those contained in the patent could be revealed at this time.

Chemical Analyzer

An improved method for detecting the chemicals present in a mixture by heating and then analyzing them by chromatography won patent No. 3,023,835 for Roy T. Brashear of Bartlesville, Okla. He assigned rights to Phillips Petroleum Company.

According to the patent, various methods of heating may be used, including both dielectric and induction fields. The heating element is moved along the column containing the fluid mixture to be separated and analyzed.

Chromatography is the procedure by which chemical mixtures are spatially separated on an adsorbing material. Usually the adsorption is reversible, so that the adsorbed substance can be removed by washing.

Sun-Tan Device

For a "device for sunning the body," Lee M. Wheless of High Point, N. C., was awarded patent No. 3,023,753. The device is collapsible, so that it can be compactly stored when not in use.

It is large enough for a person to recline in comfortably, and has its inner surfaces coated with aluminum or other reflecting

metal in order to distribute or reflect the sun's rays to various parts of the body "to obtain quickly a uniform, healthy tan." The exterior surfaces of the device are waterproof.

Chemical Cooling Stick

A stick containing chemicals for cooling beverages won patent No. 3,023,587 for Albert A. Robbins of West Covina, Calif., who assigned rights to Kwik-Kold of America, Inc., Las Vegas, Nev.

Attached to the stick are two plastic bags, one within the other. The smaller of the two plastic bags contains a liquid that filters down through a dry freezing chemical mixture in the larger bag after the inner one is broken. The plastic surface of the smaller bag is weakened at one point to make it easier to break at the desired time, when the stick is used to cool a beverage.

The dry chemical in the cooling stick is preferably ammonium nitrate, but can consist of other compounds that absorb heat when water is added to them. The stick will keep a beverage at low temperature for a "considerable period of time," according to Mr. Robbins.

Puppet Sock

A slipper sock that has a puppet mounted on the toe earned patent No. 3,023,420 for Rosabelle Kay Tann of Detroit, Mich. The puppet can be detached and used with the hand if desired.

The puppet sock is said to be simple and economical to make, and of rugged construction. When worn on the feet, the puppet bobs up and down, moving its mouth, as the wearer walks. The device is claimed to be particularly appealing to children.

Metal-Forming Press

Robert G. Le Tourneau of Longview, Texas, was awarded patent No. 3,023,799 for devising a large, metal-forming press. The press has structural simplicity, yet can be made economically. Mr. Le Tourneau reports that other metal-forming presses capable of exerting the required force are unduly complex, resulting in high initial and maintenance costs.

• Science News Letter, 81:190 March 24, 1962

A study showed that *shoppers* in supermarkets made larger purchases when exposed to soft music than when music was played loudly.

The foreign born in the United States have a higher death rate than native born *Americans*.