

INVENTION

Current U. S. Patents

► A NEW BURGLAR ALARM telephones the police when someone is breaking in and automatically takes pictures of the intruder.

The burglar alarm system, which can be readily adapted for use as a fire alarm as well, is connected to the telephone in a home or store. When the system's electric eye is tripped, the alarm goes into action by ringing the police station or sheriff's office. A tape recorder then tells the officer answering the phone what is happening and where. A hidden camera can also be incorporated into the system.

Edward E. Ferrell, a retired engineer in Sanford, Fla., was awarded patent 3,188,392 from the U.S. Patent Office in Washington, D.C.

Super Concrete

A super-strong concrete, which can withstand the blistering heat of a rocket at blastoff, is being used at launching pads around the country.

The concrete is believed to last four to five times longer than regular concrete, John D. McClendon, Canoga Park, Calif., reported. Mr. McClendon, along with Robert F. Stewart and Ben T. Larsen, Granada Hills, Calif., earned patent 3,188,368 for the super concrete.

The concrete, which has a glass-glazed surface, is made of a special alumina cement and an aggregate of volcanic rock. It can withstand temperatures as high as 3,500 degrees without erosion and temperatures of 5,500 degrees with erosion of only one-

hundredth of an inch per second. In addition to having an extremely high melting point, the concrete can also withstand the thermal shocking of a blastoff.

Known as Fondu-Fyre, the concrete has been used in the building of test stands at the National Aeronautics and Space Administration rocket engine test site, Edwards, Calif.

The test complex is operated by Rocketdyne, a division of North American Aviation, Inc., which also was assigned rights to the patent.

Three-Way Mirror

A three-way mirror, which sits on the front fender of an automobile to let the driver see cars coming from all sides, earned a patent.

A rear-view mirror faces the driver, while long rectangular mirrors on each side sweep back at 60-degree angles to let the driver cautiously nose his vehicle into a blind intersection and make sure no cars are coming from either side. At the other end of the device, opposite the rear-view mirror, is a colored reflector, which acts as a guide for drivers coming the other way.

The three-way mirror earned patent 3,187,628 for Julius D. Canns, Jamaica, N.Y., Albert Bryant, Hollis, N.Y., and Carmen Lichau, Brooklyn, N.Y.

Other Interesting Patents

A space simulator, which produces solar radiations like those believed to exist on

Venus, has received a patent. The simulator, which utilizes a system of reflectors to produce uniform radiation inside the chamber, earned patent 3,187,583. Patent rights were assigned to the administrator of the National Aeronautics and Space Administration with respect to an invention of Melvin N. Wilson Jr. and Carl Thiele.

A newly patented cracked shell detector looks for cracks in egg shells as the eggs ride on a conveyor belt. Robert A. Whitmore and Harold J. Mumma, Riverside, Calif., were awarded patent 3,187,892 and patent rights were assigned to FMC Corporation, San Jose, Calif.

• Science News Letter, 87:408 June 26, 1965

TECHNOLOGY

200 Miles of Aluminum Used in Heat Exchanger

► TWO HUNDRED MILES of aluminum tubing, wound inside a 100-foot shell, is helping to extract helium from natural gas.

The shell is a space-age heat exchanger that weighs 55 tons, is 6.5 feet in diameter and nearly 100 feet long. It is believed to be the world's largest cryogenic heat exchanger.

Natural gas, which contains from four-tenths to eight percent helium, is made colder and colder as it is conducted through a series of the heat exchangers. As the temperature continues to drop, hydrocarbons and nitrogen change from gas to liquid. When the temperature reaches minus 320 degrees Fahrenheit, what is left is almost pure helium.

Helium, once used only to inflate balloons and blimps, has recently taken on an increasing number of critical defense and industrial roles, from pressurizing liquid fuel systems in missiles and rockets to shielding joint areas during arc welding.

Aluminum was selected over traditionally used copper and stainless steel primarily because it reduced the weight of the giant heat exchanger by 100 tons. In addition, aluminum is able to withstand the ultra-cold temperatures and required operating pressures of 600 pounds per square inch.

The heat exchanger was developed by Air Products and Chemicals, Inc., Allentown, Pa., with the cooperation of Aluminum Company of America, Pittsburgh.

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TECHNOLOGY

Machine Cleans Crabs, Eliminates Manual Work

► THE MACHINE AGE is coming even to the lowly blue crab, denizen of the East and Gulf Coasts.

A machine punches through the shell of precooked crabs, taking an amount of lump and flake meat comparable to that now obtained by hand. It will greatly help the shellfish industry, which now depends on manual labor to deback and clean the crabs.

The device was developed by the American Scientific Corporation of Alexandria, Va., for the Department of the Interior.

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Rocketdyne

F-1 ENGINE TEST—Mighty 1.5 million pound thrust F-1 rocket engine is tested at NASA rocket engine test site, Edwards, Calif. The test stands used are made of a newly patented concrete which can withstand the heat of a rocket blastoff.