

TECHNOLOGY

High-Power Auto Engines

► **MOTOR VEHICLE** engines now in production, some for both civilian and military uses, others for military only, are claimed to be greatly superior to older types, giving higher power, greater fuel economy and longer life in service.

One is a diesel engine revealed by General Motors which is designed to power trucks and is called the "Million-Miler" because it is good for a million miles in highway service. Others are products of Continental Motors Corporation and are intended for use in military tanks and in Air Force ground installations.

Two Million-Milers are being built. One is a four-cylinder 150-horsepower type to replace former 133-horsepower engines. The other is a six-cylinder 225-horsepower unit, a step-up of 25 horsepower over the engine it replaces. Although horsepower has been increased, a highly important fuel economy has been effected.

This economy is due to a fuel modulator which automatically feeds exactly the right amount of fuel and air for maximum efficiency regardless of throttle position. The modulator is incorporated in a new gov-

ernor assembly. Acting like a mechanical brain, it exerts its modulating effect at speeds below 1,500 revolutions per minute where drivers are apt to waste fuel by using an uneconomical gear.

Important in the Continental production is a new line of air-cooled engines, two of which are already in use by the Air Force in ground installations. The engines can be started in temperatures as low as 65 degrees below zero Fahrenheit and have a range of power from 15 to 250 horsepower. They are military adaptations of certain models of Continental's airplane engines. They are built with two, four, six or eight cylinders.

A unique feature of these engines is a load-sensing governor which operates in accordance with speed changes and pressure to increase or decrease engine speed automatically as the applied load changes. For starting at low temperatures, the engines are pre-warmed by a self-contained system which burns gasoline. A blower drives the heated air through the crankcase and over the cylinders.

Science News Letter, September 1, 1951

PSYCHIATRY

Love Prevents Breakdowns

► **OLD PEOPLE** need to feel loved and wanted, just as do children, or for that matter, persons of any age. The need is more acute at the extremes of life, perhaps because the very small child and the very old person are both to a large extent physically dependent on others. And just as children learn more quickly to tie their shoe laces and help with the dishes if mother shows confidence in their ability, so many old persons can do more if someone shows confidence in their ability.

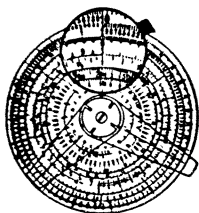
These two feelings, love and confidence in their possibilities for improvement, have helped many senile patients in Topeka State

Hospital in Kansas to recover and go home to useful lives, though they had previously been considered hopeless senile mental patients. Their story is told by Dr. Walter Woods, resident psychiatrist in the hospital, in the *MENNINGER QUARTERLY*, published by the Menninger Foundation.

"One man of 90 developed an interest in carpentry, music and painting," Dr. Woods relates. "Another, 87 years old, aided by a new hearing device and an artificial leg, now walks to a favorite shaded spot on the hospital grounds to study his self-taught shorthand and Spanish grammar. A 78-year-old patient, blind for many years, has learned to walk unaided to the piano for his lessons in boogie-woogie. Still another 78-year-old will go home this month, as others have done before him; he will keep books to help his son with the operation of his farm."

The breakdowns of elderly people which send them to state mental hospitals often can be prevented, Dr. Woods states. The old people can be helped to accept their limitations and to develop new skills within the range of their capabilities. Community planning is needed, and it should be the kind that lets the old person "live his last years in the same place and with the same people with whom he has spent his life."

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"Planning for the aged is planning for ourselves," Dr. Woods warns. "Three of every 10 of us born 50 years ago could expect to live to be 70. Today the figure is five out of 10, and going up."

Science News Letter, September 1, 1951

INVENTION

Sunlamp Phosphor Coats Fluorescent Lamp Tube

► A **SUNLAMP** phosphor to use for coating the inside of the tube of a fluorescent lamp was awarded patent 2,563,901, issued to Rudolph Nagy and Robert W. Wollentin, Bloomfield, N. J. Westinghouse Electric Corporation, East Pittsburgh, Pa., has acquired the patent rights.

The particular object of the invention is to produce an efficient phosphor whose peak of emission is near that of the erythral spectrum, the portion that emits the radiation required in a sunlamp. It gives only a small output of visible radiations. In the preparation of the phosphor, there is produced a solid solution of magnesium and calcium ortho phosphates activated with thallium.

Science News Letter, September 1, 1951

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