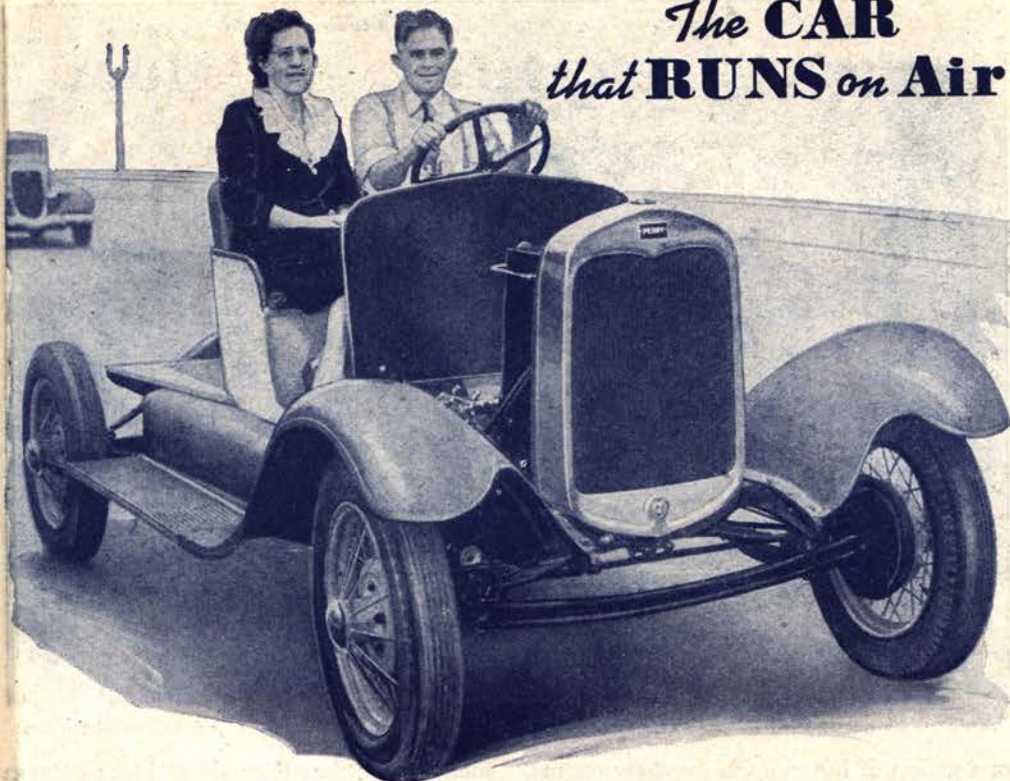


## The CAR that RUNS on Air



Compressed air and vapor supply power for the "Perrymobile" that travels 60 miles on a gallon of butane

POSTWAR motorists may climb into their automobiles, step on the air instead of the gas, and glide away swiftly and silently at 60 miles to the gallon with never a gear to shift or clutch to shove.

That's the prospect presented by Frank R. Perry, Los Angeles inventor, who has built a revolutionary car called a "Perrymobile."

Untried commercially, it's a novel combination of steamer and compressed air powered automobile. The motive power comes from a secret liquid, which vaporizes at a much lower temperature than water, and compressed air which serves as an ever-ready starting and reserve source of power.

Perry says he has driven several thousand miles with his machine which is mounted on an old Ford chassis. The Perrymobile weighs only 700 pounds—about 1,300 pounds less than standard automobiles powered by the conventional internal combustion engines. The engine installation alone weighs only 140 pounds.

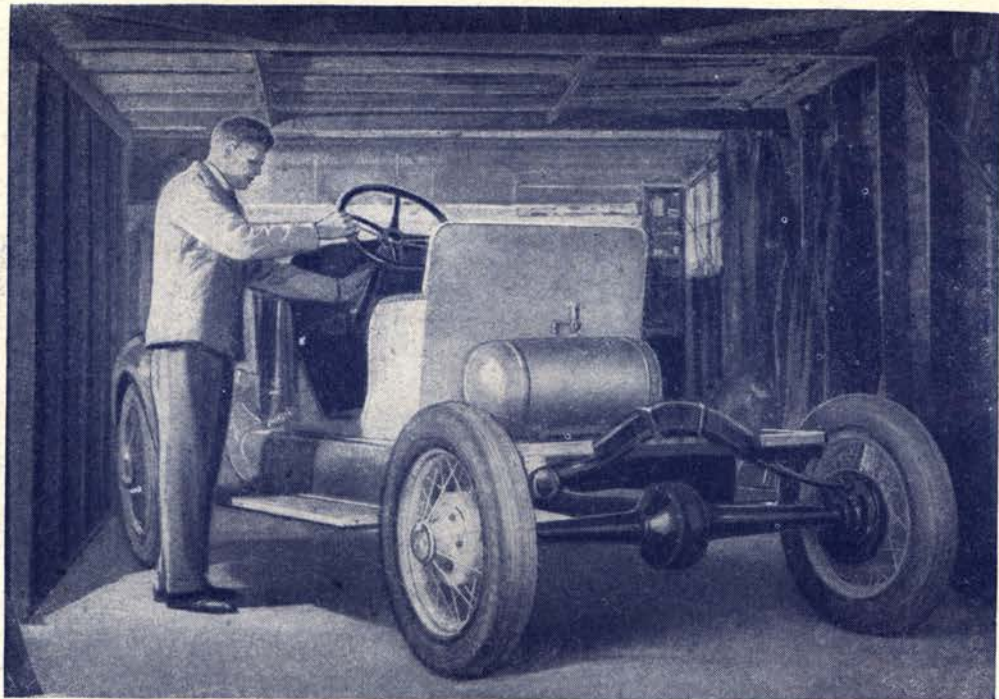
The 30-horsepower four-cylinder engine is turned over by pressures instead of by the explosions that move the pistons of an

ordinary auto engine. The Perrymobile engine is essentially the same as a steam engine. Inside each cylinder is a piston which moves up and down and is connected to the crankshaft.

The secret non-inflammable liquid, which boils at about 150 degrees Fahrenheit, is heated by a burner which uses anything from butane gas to crude oil. The car will travel 60 miles at 30 miles an hour on



The only floorboard pedal is the brake; a control on steering column regulates both speed and power



Built on an old Ford chassis, the air-vapor car carries enough butane in its fuel tank to run 600 miles

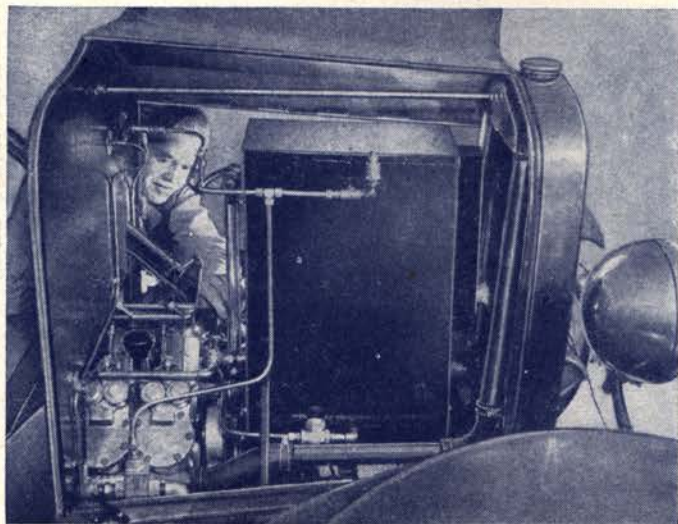
one gallon of butane, the inventor claims. He says this fuel costs about 8½ cents a gallon. (He sets the top speed at "better than 70.") Only one quart of the secret liquid is required in the boiler because it is exhausted as vapor into the radiator, condensed and returned to the boiler.

The vapor passes through an intake valve into the top of the cylinder, and with a pressure of about 150 pounds per square

inch pushes the piston down just as steam would do. At the bottom of the stroke the vapor exhausts through a port cut through the cylinder wall. As the piston starts up again a valve at the top of the cylinder lifts so the piston travels upward against no air pressure. At the top of the stroke more vapor is admitted which starts the piston down again.

Each of the four pistons supplies power to the rear wheels every time it is pushed down. This affords "two-cycle" operation instead of the conventional "four-cycle" shift in which each piston gets a shove only every second time it travels downward. Thus, Perry's four cylinders put out as many power impulses as an eight-cylinder auto engine.

The compressed air part of the power for the Perymobile comes from a tank under the seat. That tank is kept full of compressed air supplied by a small air pump connected



Oblong steel box houses boiler; four cylinders form a V

by a belt with the engine. The compressed air, which flows through the boiler into the cylinders, is used for a quick start and until sufficient vapor pressure has been built up to run the engine.

To operate this revolutionary automobile, you first open the fuel valve under the hood and the burners catch fire from a pilot light. Then you get in the car and pull down the throttle lever on the right side of the steering column. Compressed air from the tank flows into the cylinders and the car starts to move.

After you have driven a few blocks the flame in the boiler has built up sufficient vapor pressure so you can turn off the air. The pump quickly restores the pressure in the air tank. Heat in the boiler is regulated by an automatic valve.

Suppose you are driving out into the country and come to a long sloping downgrade. You close the throttle, just as you would in an ordinary car, and the flame goes low in the boiler, for no pressure is being used. Even while the engine is idling, air is pumped into the tank to maintain a constant pressure. To back up, a control on the left of the steering column changes position of the cams for reversing.

The inventor compares his single control for regulating speed and power to the control lever of an electric motor. The smooth operation of the Perrymobile is due to the fact that the power output is the same at all speeds—from 1 r.p.m. to 2,000. On a gasoline engine the horsepower is in direct ratio to the r.p.m.'s.

Even at full power with the throttle valve wide open, Perry says his engine runs so cool that the paint has never blistered on the cylinders. This makes the car adaptable to extremes of climate for the liquids in it do not freeze unless the mercury drops to 30 below zero. The engine turns over slowly. At 40 miles an hour it revolves only 800 times a minute compared with 2,000 or more for most present-day cars.

Other advantages of the Perrymobile, according to the inventor, are the "parts it does without." These include clutch, carburetor, spark plugs, distributor, coils, battery, fan, gear box and self starter. The car, of course, is equipped with brakes. Perry estimates that it will require less than one quart of lubricating oil a year. The Perrymobile makes no noise, smoke or smell. So smooth is its operation, he reports, that in a blindfold test it is impossible to tell when the car starts moving.

It cost Perry about \$400 to build his lightweight automobile, but he says it should sell for much less if it gets into mass production—about \$250. He believes the air-vapor engine can be used on helicopters and boats as well as automobiles.