



Running on alcohol and water, Hanson doubled the mileage of this Ford Pinto.

"READY TO BRING ON THE MARKET"

Illinois Man Develops Alcohol Fuel System

After nearly a year of searching for parts and refining ideas, Herb Hanson, of Elgin, Ill., inventor of the first-ever vaporizing carburetor for alcohol, says he's ready to begin producing his carburetion system commercially.

First featured in FARM SHOW last year (Vol. 5, No. 3), Hanson has been driving and testing his prototype Ford Pinto fitted with the system for more than a year, doubling his gas mileage from 32 to 75 mpg. on 130-proof alcohol. This winter, he ran the car through record low temperatures of 26° below zero. Although the mileage was lower than in warmer weather, he says it still was double what the same vehicle would have gotten running on gasoline.

Hanson's fuel system uses both the heat of the engine and two 100-watt electric immersion heaters to vaporize alcohol before it's fed to the cylinders through a propane gas-type regulator. The car actually starts on propane and runs on it for about 5 min. until the engine warms up.

"In converting a vehicle, we remove the carburetor, radiator, fan, and catalytic converter. The vaporizer mounts where the radiator was. Because the engine burns cooler with alcohol, you don't need that cooling system. What's more it burns clean enough so the catalytic converter is wasted equipment," explains Hanson.

Although Hanson's goal was to develop a car to run efficiently on alcohol, he also wanted to get rid of radiators. "The radiator is the biggest energy waster in any car, wasting 30

to 35% of all energy through heat dissipation," he explains.

One of the biggest problems in working out the innovative fuel system has been maintaining consistent vapor pressure for the engine. Heater coils wind through the alcohol fuel in the vaporizer, creating enough vapor under low load situations. Pressure switches in the vaporizing chamber trigger the electric immersion heaters if pressure falls below a certain level. This, says Hanson, occurs when passing, or going up big hills. When used in pickups, farm tractors and other equipment, the heaters may run a majority of the time.

A heat exchanger chamber built around the exhaust manifold warms the vapors to 200 plus degrees when they leave the vaporizing chamber. From there they enter the propane regulator.

"One of the big advantages is our ability to run on 120 to 140 proof alcohol, which most farmers can easily produce on their farms. If you buy 200 proof alcohol you can add 40% water to it. The water, which turns into steam, just adds power to the system," explains Hanson.

Hanson and his partner, policeman Dale Porter, are lining up manufacturers and plan to be in production later this year.

For more information, contact: FARM SHOW Followup, Pate/Hanson Enterprises, Herb Hanson, 432 Wing Park Blvd., Elgin, Ill. 60120 (ph 312 741-6071).

KEEP FEED ROOM NEAT

Handy New Funnel For Silo Chutes

Ken Glendinning, of Lucan, Ontario, got "fed up" with the mess of handling silage out of his silo discharge chute. He developed a fiberglass discharge funnel that not only solved his problem but has solved a similar problem for more than 300 farmers within a 50 mile radius of his farm who have purchased the device since he began selling it several months ago.

"Most farmers either put up with the mess or build a variety of devices that plug up and may make the problem worse. Nearly every farmer who sees our funnel understands the need for it immediately," Glendinning told FARM SHOW.

Made from smooth fiberglass to prevent plug-ups, the "Fiber Funnel" comes with an adapter plate designed to fit any silo discharge chute. It's available in either a 20 or 40° angle, depending on height of the discharge and to where the farmer wants to funnel the silage. Extra 9-in. pipe is fitted, as needed, to its 24-in. length to funnel feed to conveyers, mixers or carts.

The funnel comes off fast with quick-release handles.

The funnel sells for \$115 plus, \$6.50 per foot for extra pipe.

For more information, contact:



Glendinning's silage-handling funnel fits any silo discharge chute.

FARM SHOW Followup, Glendinning Farm Equipment, Ltd., Rt. 2, Lucan, Ontario, Canada (ph 519 227-4593).

ADD 55 TO 75 BU. MORE CAPACITY

Fold-Down Combine Bin Extensions

If you own a "20 series" John Deere combine, you'll like these fold-down bin extensions that let you add an extra 55 to 75 bu. capacity to the grain tank. They're made of expanded metal steel mesh and fold down when eight pins are removed.

The extensions bolt onto the grain tank through a hinge that lets each of the four sections fold down separately. When folded, the combine returns to its original height for storing indoors. The extensions add an extra 24 in. to the grain tank height when extended.

Three sizes are available to fit Deere 6620, 7720 and 8820 combines. All three models sell for \$425 from Harv's Farm Supply, Giltner, Neb. Owner Harvey Bish also manufactures the popular Bish head changer kits featured in previous issues of FARM SHOW that allow you to put a Deere or other make of header on another company's combine or field chopper.



Grain tank extensions add 24 in. in height to the combine when in the up position.

For more information, contact: FARM SHOW Followup, Harv's Farm Supply, Rt. 1, Giltner, Neb. 68841 (ph 402 849-2293, or 2674).