

# Made It Myself

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## Outdoor Furnace Looks Like Steam Engine Locomotive

You've never seen an outdoor furnace like the one built by retired truck driver Jim Dunn, of Cayuga, Ind. The "furnace" is an 11-ft. long mini railroad steam engine that stands in Dunn's back yard.

The steam engine, which Dunn built from scratch, "rides" on steel tracks and "pulls" a coal car and caboose. A nearby railroad crossing is complete with flashing warning signals. The steam engine's cab is used as a firebox and is connected to a large boiler. A fan forces heated air out of the boiler, through a 10-in. dia. underground pipe, and into the basement of Dunn's house.

"I've had lots of compliments on it because it looks so professional. Some people even think I bought it," says Dunn, who built the steam engine furnace last

spring. "I built it because I love trains. I have a model railroad in my basement so I spend a lot of time there. My house has electric heat upstairs, but I've been using kerosene to heat the basement. However, it costs \$1.50 a day just to heat the basement and the fumes can give me headaches.

"Because it's outside, my steam engine furnace won't leave any ashes, bugs, or smoke inside the house and I can store firewood in the coal car. Smoke comes out the steam engine's exhaust stack."

The steam engine has four dolly wheels and four drive wheels. Dunn built it for about \$300.

Contact: FARM SHOW Followup, Jim Dunn, Rt. 1, Cayuga, Ind. 47928 (ph 317 492-3917).



## Rototiller Built From Old Hay Conditioner

Old hay conditioners can be converted into low-cost garden rototillers, says a New York farmer who made a 42-in. wide, 3-pt. rototiller out of an old 8-ft. pto-driven hay conditioner.

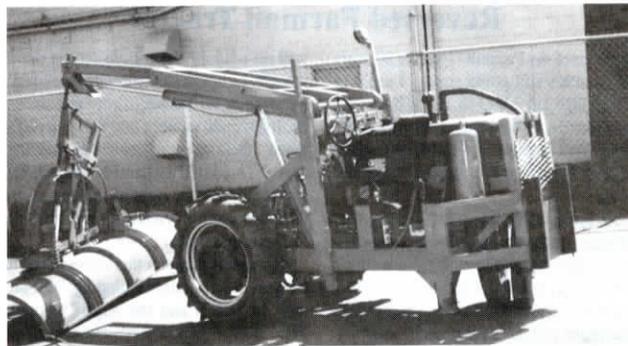
"It works as good as any commercial rototiller and cost only about \$20 to build," says John Davies. "Commercial rototillers of comparable size cost about \$1,200. It digs 6 to 7 inches deep and works so well I even do tilling for neighbors."

To make the main rototiller shaft, Davies cut the conditioner roller down to 42 in. and welded a sprocket on one end that's chain-driven by a driveshaft above the

tiller housing. The conditioner roller was equipped with 1/2 by 1-in. flat steel bars welded onto evenly-spaced discs along the shaft. Davies cut the bars off the discs and welded four L-shaped tines onto each disc. He made tines out of 1-ft. long leaf springs salvaged from an old Willys jeep.

The hay conditioner gearbox and a short length of driveshaft mount on top of the tiller housing. Davies used a short pto shaft from an old Woods mower and lengths of flat iron to make a 3-pt. hitch.

Contact: FARM SHOW Followup, John Davies, 9192 Hardys Corners Road, Cuba, N.Y. 14727 (ph 716 437-5315).



## "Backwards" Tractor Has Telescoping Boom

A "backwards" 1958 International B equipped with a telescoping boom makes a great every day shop "crane" for Jake Langer, St. Paul, Minn.

"I converted it in 1975 and it still goes to work every day," says Langer, who owns a utility equipment reconditioning business. "My main goal was to get the loader boom over the drive wheels rather than the steering axle to make it easier to operate. I use it to lift anything that's too heavy to lift by hand. It'll handle up to 400 lbs. The end of the boom is fitted with a steel hook. It works better than a forklift because I can lift equipment without having to get under it and worry about scratching off the paint."

Langer reversed all the transmission gears and switched the clutch and brake pedals. He turned the seat around so that you face toward the boom when operating it. He also had to rework the steering so you still go left when you turn left, and so on. A hydraulic pump that's chain-driven off the engine supplies oil to two 3 by 24-in. hydraulic cylinders that are used to raise the boom. A 4-ft. long cylinder is used to telescope the boom which is built on a steel framework that's bolted to the tractor.

Contact: FARM SHOW Followup, Jake Langer, Truck Utilities & Mfg. Co., Inc., 2370 English St. at Hwy. 36, St. Paul, Minn. 55109 (ph 612 484-3305).



## Bobcat Repowered By Toyota Engine

When the engine blew out in his Bobcat skid steer loader, Edward Kaderly, Juda, Wis., was looking at a \$1,000 outlay for a new short block. He decided to save his money and instead fitted the loader with a Toyota 20R engine out of an old pickup.

Because the engine is so much bigger than the original, it sticks out the back a couple feet on a cantilevered frame. That reduces maneuverability in tight spaces, but Kaderly says the increase in power, and the money he saved, makes up for the drawbacks.

"The Toyota engine has four times the original power. That's more than I need but it comes in handy," says Kaderly.

At times, having the engine hang out the back works to his advantage. For example, one job Kaderly did with the repowered loader was to repair feeder roofs blown off by high winds by rigging the Bobcat with 10-ft. long loader extension arms. While raising the heavy roofs back into position, the extra weight of the

engine provided the counterbalance needed to keep the rear wheels on the ground.

To mount the engine, Kaderly first welded a frame made out of steel tubing to the Bobcat chassis. Then he built a second frame inside the first that slides in and out. The engine mounts on the second frame so Kaderly can easily slide the engine in and out for maintenance.

The engine mounts at a 90° angle to the Bobcat transmission so Kaderly ran three V-belts from the engine driveshaft to the transmission. There's about a 1-ft. distance between the drive pulleys on the transmission and engine. In addition, he had to change rotation of the transmission to match the engine. He did it by turning the bevel gear around inside the transmission.

Contact: FARM SHOW Followup, Edward S. Kaderly, RR, Juda, Wis. 53550 (ph 608 897-4831).