



Prototype machine tumbles rocks inside a 25-in. tire. Inventor Don Emme sealed off the open sides of tire with steel plate. Since photo was taken he's put guards over chains.

Tractor Tire Rock Polisher

By Mick Lane, Contributing Editor

For the past two years, Don and Margene Emme, O'Neill, Nebraska, have supplemented their trucking business by buying field stones, cleaning them up, and reselling them for landscaping. Rocks that aren't sold are warehoused, so the Nebraska couple has a large supply on hand.

"We are always looking for ways to market our inventory of rocks," says Emme.

After looking at a small rock polisher their grandson got for Christmas last year, it struck them that larger polished rocks might be of interest to some people. "I measured his rock polisher and multiplied the dimensions to build our prototype machine," Emme says. As soon as he started working on it he realized he had stumbled onto an entire new marketing opportunity.

The first challenge was coming up with a tumbling chamber big enough to hold large rocks. Emme got the idea of using a 25-in. tire off an industrial front-end loader. He sealed off the open sides of the tire with steel plate and added hubs at the center. The plate on one side hinges open to add and remove rocks.

He built a frame for the tire tumbler out of 2 by 4 steel tubing. He tried several different ways of powering the polisher, including a tractor pto, but settled on a 3 hp, 220-volt electric motor with a variable speed pulley. A V-belt from the pulley drives a gearbox which salvaged from a silo unloader. A no. 60 roller chain from a sprocket on the gearbox turns a 28-in. sprocket mounted on one side of the tumbler.

"I've found a reduction of about 56 to 1 seems to work best," he says. "Right now, I have it geared so the tumbler runs at about 4 rpm's. I'm still experimenting to see what speed is best."

Emme loaded a 300-lb. rock into the tumbler to try it out and found that the one big rock was a bit too much. He backed off to a batch of 85-lb. rocks, and smaller. Emme says he's still experimenting (he just finished building the machine in February of this year) and will probably make a few more changes before it's perfected. But he already has one order for a quantity of polished fieldstones to be used around a fireplace.

He polishes the rocks with a mixture of sawdust, bits of plastic, sand, and steel slag, adding a bit of sawdust at the end to clean them up. He says the machine is very quiet when running. "You just hear muffled thumps as the rocks bump into each other inside the tire," he says. It takes a couple hundred hours to polish a large batch of rocks.

"It's encouraging to know people like the



A 3 hp, 220-volt electric motor with a variable speed pulley drives a gearbox, which chain-drives a 28-in. sprocket mounted on one side of tumbler.



Plate on side of tire hinges open to add and remove rocks.

idea," he says. "Once I get this going, I'm probably going to buy a rock saw so I'll be able to cut the polished rocks, too."

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Wood-Burning "Wheel Rim" Stove

"It was cheap to put together and really heats up my shop fast," says Howard Keele about the wood-burning stove he made by welding six wheel rims together stacked on top of each other.

The top two rims on Keele's stove serve as a smoke chamber. The next two rims contain the firebox which accommodates logs up to 8 in. in dia. and 15 in. long. The second-to-the-bottom rim contains the ash pit, while the bottom rim has vents that let air into the stove. There are hinged doors in both the firebox and ash pit, and a grate between them. A 5-in. flare pipe runs out the top.

The grate in the firebox was made from rebar. Ashes fall onto a steel plate that's welded in place just below the ash door.

Keele uses the stove to heat his 14 by 33-ft. shop. "It'll bring the temperature inside the shop from 27 degrees to 80 degrees in only about 27 minutes," says Keele. "Then I have to turn on a wall-mounted exhaust fan until the wood burns down a little to cool things off. If I could do it over I'd make the stove about 30 percent smaller. I'd also make the stove more airtight around the door openings so the wood would burn slower."

"The top and bottom rims are 14 in. diameter while the three middle rims are 15 in. However, you could use any size wheel rims."



Howard Keele made this wood-burning stove by stacking six wheel rims on top of each other and then welding them together.

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Massive gate was made using a large chain from an old oilfield dragline. It has 6-in. links.

Giant Chain Gate

Rico D'elia of St. Albert, Alberta, came up with a creative way to block unwanted intruders from entering a back driveway on his property. He made a massive gate using a large chain from an old oilfield dragline with 6-in. links.

D'elia used four 8-ft. pieces of 3-in. sq. tubing on the ends of the swinging gates. Gate posts are huge 20-ft. lengths of 10 by 18-in. H-beams.

The drive-through gate is 18 ft. wide and 10 ft. high where the hinges mount. The side beams are 8 ft. high. The chain links are

welded together solid on the double gate sections, but hang freely on the side sections.

"I just wanted to make something different and unusual that would stand out," he says. "I already had the materials available and didn't have to buy anything. Realistically, I don't think it cost me \$500. The only costs were the welding and driving in the posts."

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