Home-Built Crawler Rides On "Tire Tread" Tracks

"It'll push snow like you wouldn't believe," says 82-year-old Ranford Adamson, Carman, Manitoba, about the 4-WD crawler tractor he built using a 50 hp gas engine, a pair of Chevy Vega rear axles, and a 3-speed truck transmission.

"It's as big as a D-4 Caterpillar and will crawl over almost anything," says Adamson, who used 18.4 by 38 rear tractor tires to make rubber tracks for the tractor. The tracks have 7 1/2 ft. of surface contact with the ground and ride on 4 pairs of dual wheels on each side for a total of 16. The front and rear dual wheels on each side are 13-in. car tires and the center wheels are smaller.

A home-built 6-ft. wide dozer blade mounts on front.

"I've been building things ever since I was 12 years old," says Adamson, a former blacksmith who retired 17 years ago. "It works beautiful and is built so well that most people who see it can hardly believe that I built it. I built it all out of my head without using any blueprints. I use it to grade gravel and dirt and to move snow in the winter. The 4-WD keeps it straight - even when the blade is at an angle it won't pull sideways if it hits something. Also, it rides nice without the jarring up and down motion you get with steel tracks. In fact, it rides better than my 1993 Dodge Dakota 4-WD pickup.

"I spent about $1,700 to build it whereas a new D4 Caterpillar sells for about $30,000. I bought some new steel but was able to salvage a lot of used stuff. I bought the 50 hp gas Waukesha engine from a friend for $150. I got the tires cheap at a junkyard."

Adamson used 2 by 4 rectangular steel tubing to build the main frame and 3 by 2-in. steel tubing to build a separate frame at the rear that slides into the main frame and bolts onto it. The seat and gas tank are part of the rear-mounted frame. He welded U-clamps and a nut onto the rear axle and uses a pair of 20-in. long, 1-in. dia. threaded bolts to move the rear frame forward or back to tighten the tracks.

He made the tracks by cutting the sidewalls off each tire, leaving a 4-in. lip on both sides. To mount the tracks, he moves the rear frame up and jacks up one side of the tractor. To hold the tracks in place a row of 3-in. long steel guides inside of each track runs between the dual wheels. The guides are bolted to the track every 6 in.

The 4-cyl. engine is connected to a 3-speed transmission off a 1974 International truck. The transmission chain-drives a jackshaft which in turn chain-drives the driveshaft off a 3-ton Chevy truck that runs between the two drive axles.

"The engine has a lot of power," says Adamson. "It maxes out at 1,375 rpm's and idles at 375 rpm's so it's easy on fuel. It's the same engine used on old United Allis Chalmers tractors. I used 1/4-in. plate steel off a hot water boiler to build the blade. I can angle it up to 45 degrees in both directions by changing the position of a pin on either side of the blade's mounting system. The tractor has live hydraulics. I used the pulley and drive system off a 55 Deere combine and run the pulley directly off the engine crankshaft."

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Pickup-Mounted Soil Sampler Made From Stirrator Auger

An Iowa farmer, tired of paying for soil sampling services, has come up with his own pickup-mounted soil sampler made from a "stirrator" auger out of a grain bin.

Lynn Petersen of Elk Horn mounted his home-built sampler on a 1967 Ford 1-ton flatbed pickup. "It didn't cost much to build. I had the hydraulic motor, hoses, and other material on hand so my out-of-pocket cost was $30 or less. I even fitted it with a specially-designed auger tip that allows it to penetrate frozen soil," says Petersen.

The 3-ft. long, 2-in. dia. auger mounts on a steel frame that slides into steel brackets mounted on the side of the flatbed. The auger is powered by a Charlyn hydraulic motor that's driven off the pickup's power steering pump. The auger is raised or lowered by turning a large wheel on a shaft fitted with sprockets. The sprockets engage a pair of roller chains welded flat to metal tubing on the frame supporting the auger.

The auger deposits dirt into a metal tray and Petersen sweeps it out by hand into a plastic pail.

"I use it every fall and winter. Mike's Welding, Kimballton, Iowa, fabricated the soil tray and designed the auger tip which consists of two pieces of steel ground at an angle and welded together. The tip design is similar to what's found on ice fishing augers. I can make about 200 holes before I have to resharpen the tip.

"The tray design automatically limits auger depth. The tray is connected to a length of square tubing that slides inside a steel bracket as the auger lowers into the ground. A cotter pin on this piece of tubing limits how deep the auger can drop."

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"Roll-Around" Weed Whipper

"My roll-around weed whipper reaches under fences and rolls right around fence posts. It also works great for cutting along buildings, under guard rails, etc.," says Bill Kurtz, St. Croix Falls, Wis., about his home-built king-size weed whipper.

The 3-wheeled rig, which Kurtz says works just like an ordinary string trimmer, is built on the frame of an old International hay mower and has two car wheels on front and a smaller wheel on back. The homemade 2-ft. dia. weed whipper wheel is belt-driven by a 5 hp Briggs & Stratton gas engine. The weed whipper mounts on a hinged steel arm that's free to pivot up or down on a pair of spring-loaded telescoping pipes and also forward or backward on a bearing. An adjustable gauge wheel guides the wheel over uneven ground. The wheel "walks" its way around posts, so the tractor operator can drive in a straight line along the fence line.

"At first I used standard weed whipper string but I found that it wore out too fast. I replaced the string with lengths of roller chain which work much better," says Kurtz.

He used sheets of plastic and plywood to make the weed whipper wheel with a bicycle tire wrapped around the outer edge.

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