



Big Butch's cab sets above and forward of rear tires, providing a panoramic view to all sides. The frame is just 12 in. wide at the rear so the two inside rear tires can be positioned just 24 in. apart.

**BUILT-FROM-SCRATCH 375-HP.
2-WD IS FITTED WITH "TRIPLES"**

Shop-Built Tractor Saved Farmer \$100,000

By Gene Schnaser

Canadian farmer Russell Turner needed some big power to work his 2,600 acres in the eastern part of Alberta. But he suffered "sticker shock" when he saw that what he needed would run him \$140,000 to \$150,000.

So he began accumulating parts. After four years of off-and-on work, he and his teenage sons finally put the finishing touches on "Big Butch," a 375-hp, 2WD tractor that's now been field tested through two seasons of use. His investment, besides labor, totalled only \$50,000.

He is only one of a handful of farmers uncovered by FARM SHOW who have assembled a big-muscle tractor completely from scratch. "It was a dream of mine," he says. "When I was 19, I built a small 110-hp 4WD tractor, and I always dreamed of building a big 2WD. The tractor has lived up to expectations; in some respects I like it better than anything I could buy."

The tractor's powered by an engine salvaged from a wrecked insurance claim truck. It had a 375-hp Cummings diesel that had been overhauled.

The transmission in the truck was too light to use. He finally located an almost-new Spicer 1414, rated at 1,400 ft.-lb. and equipped with oil cooler. It has 14 gears forward and 3 in reverse.

The hardest part to find was the rear axle. He found a Clark 85,000-lb. planetary axle with a 22:1 ratio through a dealer in Oklahoma. While a used rear end of this type usually sells for about \$15,000, he picked it up for \$6,000. After locating the rear end, he began designing the frame. For the high-torque area over the rear axle he used 1-1/4-in. thick plate. The plate, which runs from the back of the tractor to just ahead of the rear tires, transitions into 1/2 by 15-in. channel iron which forms the front end of the tractor.

He used the radiator out of the wrecked truck, but bought new parts for the hydraulic system, including a Cessna 26-gal. pump

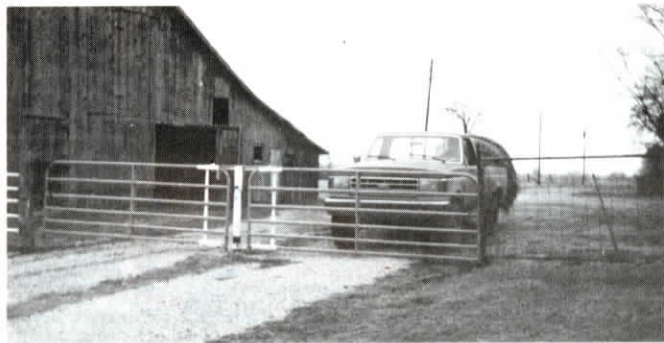
and valves. The hydraulic system is pressure compensating and load sensing for both tractor and implement. This means that when there is no load on the hydraulics, the system uses only about 2% of total horsepower. Turner notes that this is an advantage over the hydraulic systems on some 4WD tractors which can use up to 35 hp or more just for steering alone.

To get enough traction for the 375-hp tractor, which weighs 32,000 lbs., he used 20.8 x 42 radial triples on the rear. For the front he used 18 x 26 bias-ply lugged tires. Turner says he finds that having lugs on front help get more traction for steering.

To keep the six rear tires from getting too wide, Turner made the frame just 12-in. wide at the rear so the two inside rear tires could be positioned just 24 in. apart. This led to the design of a unique double-action drawbar which operates with only 9 in. of swing room within the frame. "Without the improved swing, the tractor tended to walk straight in the corners. It took awhile to design," Turner says, "but it solved the problem. Most people who see it in action can't believe how well it works."

Normally on a 2WD tractor the cab sits down between the tires. But, because the two inside rear tires are only 2 ft. apart, the cab on Big Butch is positioned above and ahead of the rear tires. Turner designed the cab for clear visibility all around, using safety glass from a local supplier. He positioned the roll bar at the center of the tractor and, to minimize obstructions, ran the exhaust pipe next to the roll bar on one side. The cab is isolated from the engine compartment with dead-air space and has a sand-filled frame to dampen vibration.

The cab's climate controls include a heater and an air conditioner. He mounted eight lights on top of the cab, and two halogen road lamps at the front of the tractor. The tractor could have been outfitted with a pto, but since he didn't need it, he saved some



Two stock gate panels mount on a center pivot pole that's the "brains" of the new gate.

A PAIR OF STANDARD STOCK GATES ROTATE AROUND A CENTER PIVOT

You'll Like This New "Revolving Door" Gate

After you get a look at this new "revolving door" bump gate, you'll wonder why no one's come up with the idea before.

The revolving self-closing gate is totally automatic. You never have to get out of your truck, tractor, or car to open or close it. It consists of two standard-size stock gate panels mounted on a center pivot pole that's the "brains" of the patent-pending new gate.

"I was tired of climbing in and out of my pickup all the time to open and close gates. One day this idea just popped into my head and I went out to the shop and built it," says Mitchell Grainger, who says the gate works so well he's decided to begin manufacturing it for sale in addition to running his farm near Butler, Mo.

When closed, the gate is held in place by spring-steel latches which are released by the first "bump" of a vehicle passing through. You continue to push the gate out past 90 degrees at which point the center pivot pole "cams over" and the second gate closes behind. No electricity or other outside power source required.

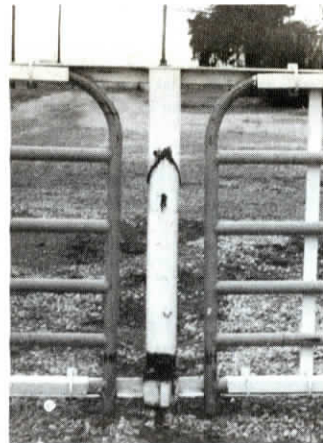
"It's simple, totally mechanical, and it works," says Grainger, adding that cattle and other livestock can't open the gate because of the "bump" required to release the spring latches. Also, you can adjust the heavy-duty spring inside the pivot pole to make it harder to open as needed.

Grainger plans to begin selling the pivot pole by early summer for \$225 (gates not included). It weighs 225 lbs.

For more information, contact: FARM SHOW Followup, Mitchell Grainger, Box 184, Butler, Mo. 64730 (ph 816 679-5409).



As you push the gate out past 90 degrees the center pivot pole "cams over" and the second gate closes behind.



When closed the gate is held in place by spring-steel latches which are released by the first "bump" of a vehicle passing through.

money by bypassing that option.

Big Butch is used primarily to pull tillage implements—a 47-ft. field cultivator and a 64-ft. culti-weeder which has cultivator shovels ahead and a Leon rod weeder behind. The 64-ft. rig doesn't tax the tractor, and Turner says he doesn't need to shift down even going up hill. "Without a powershift transmission it was important to have an engine with good torque rise," he says. "That's why I used the Cummings; it has excellent lugging power."

While building the tractor Turner says he ran into some bottlenecks which made him stop and think, but that the biggest chal-

lenge was balancing the weight. "But I put it all together, fired it up and everything worked fine," he says. "I have never had a bit of trouble with it."

After two seasons and 1,000 hours of use, he estimates the tractor will have a service life of 10 years or more. His next dream project? "If I were to build another," he smiles, "I'd probably try a six-wheel-drive version with 450 hp or more. Maybe if farm prices improve I'll get to it eventually."

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