

## Made It Myself

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### “Double Windrow” Rake Built From Two Used 3-Pt. Rakes

Paul Michener, Waynesville, Ohio, wanted a way to speed up raking hay without damaging hay quality or having to spend a lot of money. So he bought two used, 3-pt. mounted 4-wheel rakes and built his own “double windrow” rake that puts two windrows together at the center.

“It gives me better quality hay and cuts my raking time by more than half,” says Michener.

He flipped one of the rakes over and reversed the wheels, then mounted both rakes on a home-built 2-wheel trailer equipped with a 10-ft. long hitch and 10-ft. long manual-fold swingout arms that are hinged at the rear. The finger wheels are mounted on the arms. A rear-mounted hydraulic cylinder raises or lowers the arms.

“I can go up to 10 mph, if the field is smooth enough, without shaking off many leaves,” says Michener. “The finger

wheels don't turn very fast because they're set at a 45 degree angle and are dragging sideways as they go forward. Hay travels only half as far as other rakes that roll hay from one windrow to another. The arms can be set narrower if the hay is heavy or if I want a smaller windrow. I can hydraulically lift the rake in light hay or when turning corners to keep hay from bunching up.

“When I built it I didn't know of any commercial rakes like mine. Now there are similar rakes on the market that sell for \$3,500 to \$6,500. I spent only about \$1,000. I paid \$300 for both rakes. Even though I built it four years ago, I'm still making improvements on it. I plan to either add more raking wheels or build a larger rake. The additional raking wheels could be added when the hay is lighter or removed when it's heavy.”

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### Fast New Way To Measure Grain Loss

You can check grain loss quickly and easily with this on-the-go powered “drop board” for combines unveiled at the recent Northwestern Ag Show in Portland, Ore.

Inventor Chris Tolke, St. Helens, Ore., built the first device for his father's Case-IH 1680 combine in 1993 and it's been used on a total of 2,000 acres of grass, vetch, and clover since then. Although the men do not harvest small grains, Tolke says it should work on them, too.

The device consists of a framework made of 3-in. channel iron that mounts underneath the combine grain separator fan just ahead of the sieve discharge. It holds one, two, or three 2 by 4-ft. drop boards made of 1/4-in. thick plywood.

Tolke simply flips a switch in the cab

to drop one sample board at a time. He used an electric windshield wiper motor to power the unit. With each flip of the switch, the motor makes one revolution and drops one of the boards which are held in place by “catches” that attach to rods connected to the windshield wiper motor.

The system works good for gathering samples of crop and chaff at different speeds and different locations throughout the field, Tolke notes. It could be custom-built to fit any combine, he adds.

He estimates the price to manufacture them would be \$1,000. He'd like to find a manufacturer or he may build them himself.

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## Hand-Cranked “Car Wheel” Manure Scraper

When Larry McKay, Woodstock, Ontario, decided to add a farrowing room to the upper floor of his barn, he needed to find a low-cost method to scrape away manure that accumulated under the farrowing crates.

He saved the expense of installing electric-driven manure scrapers by making his own manually-operated “car wheel” scrapers.

“They're a simple, inexpensive way to scrape out manure and saved me about \$2,000 on the cost of electric-drive units,” says McKay, who built the scrapers two years ago.

McKay's farrowing room is arranged with three rows of farrowing crates, with five crates per row. The ends of the crates rest on top of 8-in. high concrete curbs. He made three 6 1/2-ft. long, 4-in. high, 1/4-in. thick scraper blades, one for each row of crates. Each blade connects to a continuous stainless steel cable that runs to a car wheel rim mounted on a steel pipe. The end of the pipe is welded to a 6-in. length of 2 1/2-in. steel tube that's free to slide up or down on a vertical 2-in. sq. steel tube. The 2-in. steel tube is lag bolted to the floor and ceiling next to a gutter. The cable wraps around the wheel rim and over a pair of pulleys that are bolted on near the bottom of the 2-in. sq. tube.

He welded four lengths of 3/4-in. steel pipe onto each wheel rim to serve as handles. Turning the wheel one way pulls the blade toward the gutter, and turning it the other way returns the blade to the back of the crates.

“The cable wraps once around the wheel rim and works like a clothes line,” says McKay. “I can tighten it up by turning a nut on top of a length of redi rod that's welded to the 2 1/2-in. steel tube. The redi rod goes up through a steel bracket that's welded to the 2-in. sq. tube.

“I operate the scrapers about twice a week.



Each blade weighs about 50 lbs. but all the manure is liquid so it isn't that hard to pull. The manure kind of comes down in a wave toward the gutter. From there it drops into a pipe and empties into a tank on the barn's lower level. The scrapers remove all the manure from the room, leaving it clean and virtually odor-free.

“I spent about \$40 to build each scraper system. My biggest cost was for the steel tubing. I paid \$2 per foot and \$2 for each wheel rim.”

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## Mobile Pasture Watering System

This portable watering system can be easily moved from pasture to pasture to make it easy to rotate livestock with no need for permanent installation of water supply.

Mike Reicherts, New Hampton, Iowa, simply mounted a 500-gal. supply tank on top of a wagon chassis. Hoses run from outlets at the bottom of the tank to water troughs made from plastic 55-gal. drums. The floats are protected inside pieces of pvc pipe mounted on the side.

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