



Minnesota farmer Jason Christians built this twin rake hitch from the frame of a mounted rotary hoe and wheels off a self-propelled combine.



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Twin Rake Hitch Made From Rotary Hoe

"I built my own twin rake hitch from the frame of a mounted rotary hoe and wheels from a self-propelled combine," says Waltham, Minn., farmer Jason Christians.

First he removed the hoe wheels that were bolted to the 16-ft. wide, 4 by 4-in. frame. That gave him a clean bar to work with. Then he cut the bar about 2 ft. from one end and put in a pivot point. He welded mounting brackets to the main frame and the wing, then attached a dual-acting 3 by 8-in. cylinder.

Christians made two hitches from used scrap steel and welded one to the main bar and the other one to the wing. The base of the hitches are supported with hubs from an old Deere 45 combine and 15-in. wheels that Christians had laying around. The hitches ride about 20 in. off the ground so the 2 rakes

that he uses, a Case and a New Holland, ride level in the field.

"Using the cylinder I can swing the back rake to one side and make 2 individual windrows," Christians says. "I can also make a bigger windrow by swinging the back rake to the other side and rake 2 windrows into one." The double acting cylinder adjusts right from the tractor seat.

A full-time mechanic during the day and a part-time farmer on nights and weekends, Christians says his homemade hitch cut his raking time in half. "With one rake it seemed like I was at it forever, but the double hitch works exactly like commercially-made models." He says he built the hitch in a month during evenings after work. Out-of-pocket costs were less than \$500.



A double acting hydraulic cylinder at the pivot point is used to move the back rake from one side to the other.

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Oliver and Gloria Maier didn't want to lift and move their chicken coop by hand from place to place. So they added 10-in. wheels that fold out when needed.



Fold-Out Wheels Added To Chicken Coop

In their retirement, Oliver and Gloria Maier liked the idea of raising "free range" chickens to supply eggs for their kitchen table. So they bought a chicken coop kit called the Chicken Chalet (www.urbanchicken.com). The coop measures 3 by 8 ft. and houses 4 to 6 chickens.

The Maiers, in their 80's, didn't want to lift and move the coop by hand from place to place. So they added 10-in. wheels on one end and a handle made from 3/4-in. galvanized pipe on the other end. The wheels mount on a 1/2-in. rebar axle that goes all the way across and goes through holes drilled near the end of a 2 by 2 wooden arm on each side. The arms pivot on a bolt on the other end which is attached to 2 by 2 vertical boards added to the coop.

The Maiers also added a 1-in. angle iron on both sides across the bottom to make the coop more rigid.

When not in use, the wheels normally are in a free-float position out in front. One person can move the coop, but it's easier with 2 — one

person to raise the end with the wheels while the other rotates the wheels back under until the coop rests on the axle. The weight of the coop keeps the axle against the angle iron pieces.

"It's much easier to move than picking up the coop and moving it by hand," says Maier. "Some commercial chicken coops of this size have a set of stationary wheels out in front like a wheelbarrow. But this way, with the wheels partly under the coop, about one third of the coop's weight is on the wheels making it much easier to move."

"I bought the wheels at Tractor Supply Company on sale for \$5 apiece and used scrap pieces of angle iron, pipe, and rebar that I had laying around."

Gloria wanted the coop to look more decorative so she painted the roof to match the trim of another outbuilding.

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To keep bears and other predators away from his chicken coop, Paul Stanley added solar-powered electric fencing to a pen on back.

Electrified Coop Solved Bear Problem

After a bear ripped his backyard chicken coop apart, Pal Stanley added solar-powered electric fencing to his new coop.

Since he only keeps 4 to 5 chickens at a time, he started with a small, 4 by 4-ft. Harbor Freight trailer, which pulls easily behind his lawn tractor. He built a 2 by 4-frame coop onto the trailer frame. It's insulated with foil-faced foam board insulation and has a metal roof.

He included a door for easy cleaning and built two nesting boxes on the front with easy access with a roof that hinges open. Instead of buying expensive paint for the floor, he installed vinyl squares and covered them with a protective sealer that has made the floor easy to clean.

As a further precaution to keep out

raccoons and small predators, he beefed up the two cross-ventilation windows with expanded metal screwed on the inside walls with big washers.

Stanley built a 4 by 4-ft. pen out of a wooden frame, with fencing. The pen is secured to the coop with tailgate latches. Stanley wrapped three rows of electric wire around the coop (two around the pen), and connected them to a solar charger. He turns it off when he moves the pen.

"We have a sow bear with three cubs in the neighborhood this year, and they have not bothered the coop yet," he says.

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