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## Multi-Hitch Plate Makes Moving Equipment Easier

By Chad Smith

Dan Nahlers, the owner of Dan's Custom Welding Tables, LLC., in Gibbon, Minn., says he's been making multi-hitch plates for several years.

"I put one together to use at my place," he says. "I figured if it worked well for me, someone else might find it handy too."

Two hitch arms stick straight out from the hitch plate at a 45-degree angle, with one at the top of the plate and the other underneath it at the bottom of the plate.

"You can hook a regular wagon or something similar on the bottom arm," Nahlers says. "The one above it works for gooseneck trailers. Just lift them up by the hitch and back them to wherever they need to go."

"The two other hitches, stored in arms on top of the plate, can both be interchanged with the bottom one," he says. "So, if you're backing a hay rack or grain wagon into a shed, you use the one already on there."

The heavy-duty hitch plate is 3/8-in. thick and framed out with 2 1/4-in. square tubing.

They're also powder-coated and come in any color.

Items included with a multi-hitch plate are four male receiver hitches, two hitch pins, one clevis, two 2 5/16-in. balls, one 2-in. ball, and one mounted chain hook.

Each arm is extendable. "Most of the time, you'll want the arm extended all the way out, and it works fine," he says. "Plus, you'll always have good visibility from the cab to see exactly what's going on."

Nahlers also offers a fifth-wheel camper attachment as well as a pintle-hitch attachment for larger and heavier equipment.

The multi-hitch plate retails for \$1,459 and he ships them all over the country. The fifth-wheel camper attachment is \$105, and the pintle-hitch attachment is \$120.

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## Mechanical Trailer Ramps Deploy Automatically

Kenny Vandeventer's skid steer flips its trailer ramps up or down as it drives on or off the trailer. The automation is strictly mechanical with no hydraulics, electronics or remotes involved.

"I racked my brain for many years to figure an alternative to manhandling the ramps," says Vandeventer. "I had the trailer in the shop one winter to pack some bearings, and the light came on."

Vandeventer's solution was to take advantage of the dovetail-type ramps with their flip-over lower sections and permanently mounted uppers. He mounted a 9-in. roller chain sprocket to the side of the rear end of the trailer. A 2 1/2-in. sprocket is mounted on a 3/4-in. steel shaft at the joint of the left-hand ramps. The shaft runs through both sets of ramps and is fixed to the lower ramps. A third and smaller sprocket pulls the roller chain down from the large sprocket to run along the side of the upper ramp. It also adds tension to the chain.

He mounted activator bars at the top of the upper ramp and about 4 ft. forward on the trailer.

When the ramps are down, the forward bar rides about 5 in. above the bed, while the rear bar rests on the upper ramp. A length of channel iron runs from the forward bar to a bolt welded to the sprocket. A 1-in. wide steel strap connects the two activator bars.

When the rear wheel of the skid steer backs over the forward bar, the arm moves the large sprocket about 3 in. The gear ratio translates this to a half revolution of the drive sprocket and shaft. At the same time, the activator bar on the upper ramp is raised up off the bed about 5 in. after the front wheel of the skid steer has passed over it. When the skid steer is driven off, the front wheel depresses the rear bar, which pulls the channel iron shaft forward, reversing the direction of the



Trailer ramps move up and down when wheels cause activator bars to move and drive sprocket and roller chain.



sprocket and roller chain and returning the forward bar to its 5-in. height.

"If you back on fast, the lower ramp slams into place," says Vandeventer. "Drive off fast and it slams back down."

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# FARM SHOW®

## Money-Saving Repairs & Maintenance Shortcuts

Have you come up with any unusual money-saving repair methods for fixing farm equipment? What maintenance shortcuts have you found? Have you had any equipment recalled by the factory? Name a particularly tough mechanical problem you've had with a piece of equipment and how you solved it.

These are a few of the questions we asked randomly selected FARM SHOW readers. If you have a repair tip, maintenance shortcut, or other mechanical experience you'd like to share, send details to: FARM SHOW, P.O. Box 1029, Lakeville, Minn. 55044 or email us at: editor@farmshow.com.

Mark Newhall, Managing Editor

**Charlie Matthews, Petersburg, Tenn.:**

"Another solution for the unvented fuel container is to determine where the vent should be, drill a 1/8-in. hole and stick a golf tee in it.

"The next time you need to remove the mower deck from under your riding mower, turn it upside down, wire brush it and then spray it with those leftover, almost empty cans of spray paint you've been saving. Color doesn't matter - your mower doesn't care. This will accomplish three things: Reduce rusting, help keep grass clippings from sticking, and get rid of those cans you probably weren't going to use anyway."

fridge all the way up and plug it into the cooling side of the Inkbird. A replacement part for the fridge was \$200.

"To keep it warm in our 55-degree shop to brew beer, I put a magnetic heater in there, away from the plastic, and plug it into the heat side of the Inkbird."



**Clinton Whitney, Warsaw, Ind.:** "I have patched leaks in my stock tank and stock tank float with JB Weld. It's good stuff."

**Mike Mitchell, Fairbanks, Alaska:** "When my Suburban died, I didn't know if it was an electrical or fuel problem. So, I took the air cleaner off and had someone try to start it while I held a propane weed burner over the throttle body inlet, letting it release propane. When the engine started, I let it run a little, then I cut the propane off, and the engine died. So, I figured out it was a bad fuel pump.

"Suburban fuel tanks are hard to install because you need to reach above and make all the connections before lifting it back in place. There is a lot of potential for stressed connections that you won't know are damaged or leaking until the tank is back in place. So instead of that, I took up the carpet in the cargo area of the Suburban, and after I pulled the fuel tank, I determined how big an access panel I'd need to make to check all of the connections on the top of the tank. After making sure no electrical or fuel lines were in the way of the cuts, I cut out a rectangular access in the steel floor. It made connecting the fuel line and electrical connectors much easier. I patched up the floor by using sheet metal strips to support the patch, securing them with short self-tapping screws, then 'siliconed' the gap where the cuts were made.

"When I use spray foam, I don't always need the whole can. When that happens, immediately after I'm done spraying the foam, I unscrew the plastic nozzle,



**Mark Gumpert, Grand Junction, Mich.:**

"I got tired of changing corner insulators on posts over the years. I thought there had to be a better way of doing it. I've used the wrap-around post insulator but over the years they get little pinholes in them, and then you have a short in your wire that's hard to find. I wanted something simple and durable. I came up with an idea I've been using for about a year now and it holds up great.

"I made a die for my pipe bender. I used 1 1/4-in. flat stock, made a U-shape, and put three 3/8-in. holes in it. One is to lag or bolt to the post. You can use a 3/8-in. by 3-in. galvanized lag screw or a carriage bolt. The other holes are for the pin that holds the insulator in the bracket and put the pin through. If insulators break or crack, just loosen the fence, pull the pin, slip in a new insulator, then tighten up the fence and it's done. Very simple and it works for ceramic or plastic insulators."

**Fritz Groszkruger, Dumont, Iowa:** "A \$35 Inkbird Temperature Controller controls a fridge that had the thermostat fail (www.amazon.com). To keep it cold, I turn the