#### Money-Saving Repairs & Maintenance Shortcuts

#### **Shop Engine Hoist Mounts On Pickup**

Michael Veatch, Republic, Mo., modified a jack-operated shop engine hoist so that it can be quickly attached to the receiver hitch on his pickup.

"At farm auctions I often buy something that requires a couple of extra men to help me lift it into my pickup bed," says Veatch. "I hate to impose on people to help me load, so I decided to build something that could take the place of 3 or 4 people. It works great and is safer to use than several people loading by hand. No part of the hoist support I made weighs more than 30 lbs., so the entire unit can be assembled in only about 5 min."

He bought the hoist for \$15. The main alteration was to add a "pipe-in-pipe" rotating joint at the base, which allows the crane to rotate 360 degrees. "I used the hoist's existing slip joints, along with adjustable stands that keep the hoist steady on uneven surfaces," says Veatch.

He made a bracket and bolted a bumper



"Pipe-in-pipe" rotating joint at base of hoist allows it to rotate 360 degrees.

jack to the hoist's base to aid in setting the adjustable stands to the correct height. "The entire assembly can be left on the pickup by removing the adjustable stands and hooking the boom onto the pickup bed," says Veatch.

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# Tool Straightens Warped Posts

Joseph Stearns didn't listen to neighbors who said he needed to replace a bunch of 4 by 4's he was using to build a garage. They'd been set in concrete the year before but had warped because he and his son weren't able to finish the project right away.

"I came up with a design for a tool to straighten them out," says the Champlain, Va., resident.

He had a welder make two of the tools, which have 4-ft. pipe handles. A 3 by 9-in. piece of 1/2-in. steel plate is welded flat across the end. Another piece of 1/2-in. steel plate is welded perpendicular to the flat piece, and is held in place by adjustable 12-in. long, 1/2-in. dia. bolts that tighten the 2 plates together against the 4 by 4.

"Just tighten it on the post by hand," Stearns says. "With that 4-ft. handle you can almost twist a 4 by 4 in half."

He had the stud walls ready to place between the 4 by 4s, which are 8 ft. apart. So, as soon as he twisted the 4 by 4s straight, the wall could be nailed in place with 16-penny galvanized nails and then bolted.

"If the 8-ft. center was bowed out too far I put a tool on each of the 4 by 4s and used a come-along or ratchet strap to pull them together," Stearns says. He drilled 7/8-in. holes in the tops of the tools to hold clevises to hook into.

The tools worked well, and Stearns and his



Adjustable 12-in. long bolts are used to tighten two 1/2-in. thick steel plates together against 4 by 4 post to straighten it out.

son were able to put up straight walls for the 20 by 32-ft. garage.

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## "Propane Bottle" Engine Coolant Heater

"I needed an engine coolant heater for a hard-to-start diesel tractor. After looking at prices for the size heater I needed, I decided to make my own," says Charles Kunau, Bellevue, Iowa

He cut a hole big enough to accept a 1-in. pipe bushing in the bottom of an empty 1-lb. propane tank, then used JB Weld to seal the pipe in place and screwed in a 120-volt, 2,000-watt water heater element. He wired a heavy-duty extension cord onto the element and covered the connections with a plastic cap for safety reasons. Then he drilled two holes in the tank, one near the bottom and one in the top, to accept 5/8-in. hose barbs and used JB Weld to secure them.

"The cold coolant flows into the bottom of the propane tank as the warmed coolant flows out the top of the tank," says Kunau. "Within 20 min. I have a warm, easy-to-start diesel tractor. I didn't install a thermostat, but one could probably be added.

"I used an empty propane tank because



water heater element into bottom of propane tank. Cold coolant flows into bottom of tank as warmed coolant flows out the top.

Kunau

screwed a

120-volt

it's able to hold up to the pressure of water heating and expanding without blowing a

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## "Zerk Zapper" Opens Clogged Grease Fittings

The newest tool to clean out dried grease behind zerks is the Zerk Zapper from Horizon Products, Hot Springs Village, Ark.

According to the company, the Zerk Zapper is the largest grease fitting tool on the market and holds the most solvent, making it more efficient at cleaning clogged fittings. It also has a larger and stronger piston, with 2 O-rings to deliver higher and more consistent pressure.

To free up a frozen fitting, you fill the cylinder with an oil solvent, then use a hammer to tap the knob on the piston shaft to force solvent into the fitting. The Zerk Zapper comes with a check valve that holds pressure, allowing you to leave the tool on the clogged zerk so it can continue to work for up to 8 hrs. A pressure release valve allows removal of the tool from the fitting without damage.

The Zerk Zapper comes with a 20-year warranty. Sells for \$45 plus S&H. A heavier-duty shop-size model that holds twice as much fluid and has a bigger piston head sells



Its large size and heavy-duty piston make the Zerk Zapper more efficient at cleaning clogged fittings, says Horizon Products.

for \$50 plus S&H.

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#### Tractor "Rack" Saves Space

Gerald Suurdt, Frankford, Ontario needed to find room on his shop floor for his 6 Massey Ferguson tractors. "I built a shop with tall 17-ft. sidewalls so I decided to build a tractor rack to save space. A good friend, Ed Jackson, did all the welding," says Suurdt.

Each tractor sits on 12 in. I-beams. He cut notches in the beams and welded in 2 by 6-in. square tubing to fit the forks on his 5,000-lb. forklift to place and move the tractors.

Suurdt estimates the tractors to weigh between 4,000 and 5,000 lbs. each depending on the model. "The bottom one is the heavy one. I had to put a cement counterweight on my forklift for balance. It's a lot for the forklift but that tractor is only 16 in. off the ground."

Some of the I-beams came from a carport that was torn down at a local church. "I had to buy more, and the square tubing. In the end, I would guess I have \$2,000 in it," says Suurdt.

The project was completed on Saturdays over a month.

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Suurdt built a rack using 12-in. I-beams and 2 by 6-in. square tubing to hold his 6 Massey Ferguson tractors. He moves them with a 5,000-lb. forklift.

Ontario Canada K0K 2C0 (gerald.suurdt@gmail.com).

## **Hinged Shelf Brackets Save Space**

"Permanent shelving is a great idea for some areas, but in others I like the idea of having a flat wall when the shelves aren't needed," says handyman Tom Hohl. To achieve that he came up with a space-saving idea that he uses in his main shop, as well as on the side of his woodshed and in his sugar shack. Hohl's simple approach was to build heavyduty L brackets and mount them on sturdy door hinges that are screwed into studs on his shop wall. When he needs the brackets to hold a temporary work shelf, he folds the 3 brackets out and places a 4-ft. plank on the horizontal surface.

"I make the brackets in the shop with 2 by 4's that extend out 16 in. with an 18-in. vertical support that bolts to the hinge. A single 2 by 4 provides diagonal support at a 45 degree angle."

Inside his sugar shack, two brackets on one wall are installed to hold his sap boiling tank after it's removed from the firebox. "After the sap is boiled down we empty the tank and have to remove it from the firebox so it doesn't overheat," Hohl says. "Because the tank is very hot when we take it off the fire, I covered the horizontal arms of the brackets



Hinged brackets made from treated lumber fold flat against wall when not in use

with 1/8-in. steel to protect the wood."

When the tank is returned to the firebox, the hinged brackets fold flat against the wall. This allows about 2 1/2 ft. of walk space beside the firebox and tank to tend the sap fill and pre-heating tank.

"The brackets didn't take long to build, didn't cost anything except for the hinges, and they sure are handy," Hohl says.

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