

mix it yourself. When you're broke, you learn to save money in a lot of different ways."

Don Wooley, Lawton, Okla.: "If you're in a hurry, strapping a rusty gas tank to a tractor wheel or a concrete mixer is a good idea. If there's no hurry, add 2 in. of water and a pint or two of coarse sand, then carry the tank in your truck bed for a week. Very easy."

Jay E. Wulff, Council Bluffs, Iowa: "When disassembling or assembling anything with small parts, you'll likely drop one on the floor. I've found that if you get a flashlight, turn it on, lay it on the floor, and shine it around where you think you lost the part, the light will cast a shadow and make it look larger, making it easier to find."

Mark Froemming, Deerwood, Minn.: "I just replaced my rusted-out air compressor tank with an old, used 100-lb propane tank. It works great and has more air capacity."

Max Blowers, Bryant, Ind.: "I bought a box scraper from Tractor Supply and added a bar across the ends of the teeth. Then, with a few more pieces of scrap iron, I built a system to raise and lower the teeth using a hydraulic cylinder. If I set the upper link of the 3-pt. hitch so the box rides on the back scraper, it won't dig in. I can go to where I want to get dirt, run the teeth down, fill the box, raise the teeth, and the box will slide along the grass to where I want to drop the dirt by raising the box. Back I go for another box full. I pull the box with my 530 Case tractor."



Larry Goodman, Ionia, Mich.: "Tired of sorting through loose wrenches, I used a large carabiner for 9/16 to 3/4-in. wrenches and a medium-sized one for 1/2-in. and smaller wrenches. It's easy to remove them for use."

Ronald Carroll, Clearmont, Mo.: "Hands dirty from greasy engine repairs? Squirt liquid dish detergent on your hands, then sprinkle with baking soda. Rub well, then rinse with water."

Monty Montgomery, Hayden Lake, Idaho: "To remove frozen or rusted nuts, bolts, lug nuts and more, the Bolt Buster heat induction tool can save you a lot of grief (www.boltbusterinc.com; ph 630-628-8083). It really works."



Tom Harmon, Dinwiddie, Va.: "I have a simple hand-washing station outside the shop door with GOJO and a laundry soap dispenser filled with water."

Frank Gross, Kingston Springs, Tenn.: "I saw a YouTube video showing how to replace valve stem oil seals without removing cylinder heads. Remove the valve covers and the spark plug. Connect compressed air to the cylinder through the spark plug tube. This prevents the valve from falling in. You can now access the seals and replace them."

Stan Rivers, Beaverton, Ore.: "I use an old fold-up ping-pong table in my shop as a large parts and tool storage table when working on equipment. I can roll the table to where I'm working, spread out my old and new parts and tools, and have a place to set my coffee mug, too."



William Watner, St. Marys, Kan.: "Tubes of caulk always harden. I've tried big wire nuts, and they help. But the best solution I've found is to wrap the end of the tube with electrical tape until a tail forms. Sometimes I bend the tail over and tape it back as well."

Darrell Cooper, Chillicothe, Mo.: "A simple way to keep your grease gun clean is to wrap a piece of aluminum foil around the end to catch the oil. You can also do this with any grease line while working on a tractor."

"When you need to replace roller chain, take a zip tie, wrap it around each end of the chain, tighten it, and then add a connector link to the chain. The zip tie works like a third hand."

"The Stihl GTA 40 steel chainsaw comes with a small screw wrench, but you can use a small zip tie to release it without any tools. You just insert the zip tie into the little round hole on the chainsaw to release it if you need to tighten the chain."



Alan "Lindy" Linda, New York Mills, Minn.: "The picture above shows an easy way to remove heavy batteries from the hole they're in."

"A couple of years ago, I bought a new Stihl MS 250. The bar plugged up at the end. I had to stop and clean it several times. I went back to the dealer, but he said there wasn't a warranty on the bar. I sold the saw. Then I saw a post somewhere about Stihl bars plugging up and that you should just buy a bar from a different manufacturer."

"I had a chance to buy my brother's 250, so I did. The bar plugged up on pine and popple, just like the other one. I switched to a different brand, and no more plugging."

"Stihl gas and oil plugs gave me all kinds of fits. I've poured oil and gas down my leg numerous times. I broke a couple of them. I got to looking at one one day when it absolutely refused to turn in and lock. You have to be careful with them because the inside of the cap can turn around to the outside and no longer lock. All you have to do is rotate the inside back to where it should be. No more trouble."

Nifty Removeable Cooler Frame

Dale Freeman doesn't believe in wasted space. When he found room under his backhoe seat for a cooler, he put it to use. As with his chainsaw holders (Vol. 50, No. 3), he used a receiver hitch mount so it's removable. To access the cooler, he simply tips his seat forward.

"I welded a 1 1/2-in. receiver hitch to the chainsaw holder on the backhoe and fabricated the cooler-holding frame with 1 1/4-in. square tubing on the underside," says Freeman. "I just pull one clip to remove the frame and the cooler."

He was surprised when he first lifted the seat to check the available space.

"I discovered an equipment manual for the backhoe in a plastic holder under the seat," says Freeman. "I had another manual and didn't know the plastic-covered one was there. Removing it gave me another 3 in. of space."

After selecting a cooler that would fit the space, Freeman designed the frame. He used four 3/8-in. bolts for the cooler frame's vertical elements, double-nutted the ends, and welded them to two 1-in. wide, 1/4-in. steel flat stock pieces for the base. He then welded half-inch round stock to the top of the bolt heads to complete the frame.

He attached the frame's flat steel stock base to the 1 1/4-in. square tubing using countersunk flat head bolts. The bolts allow



Freeman attached the frame's flat steel stock base to the 1 1/4-in. square tubing using countersunk flat head bolts, allowing the cooler to lie flat on the base.

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Freeman added a drawer-handle-style footman loop to the front of the cooler lid to make it easier to open.

"I used a rubber rivet with a nut inside," says Freeman. "The rivet expands as the nut is tightened, locking the loop in place. I get them from Valley Fasteners, one of the best places to get bolts and fasteners."

Contact: FARM SHOW Followup, Dale Freeman, Monroe, Va.

Security System Stops Copper Theft

"Copper wire theft is a multi-billion-dollar problem just in agriculture, not counting municipalities and cities, where the loss impacts so many people," says Bobby Rader, co-creator of the Farmblox COP-R-LOCK Security System.

COP-R-LOCK is a patent-pending system that integrates with electrical panels and supply lines serving well heads, irrigation towers, other farm equipment and commercial businesses. A typical setup will cost a fraction of the repair costs associated with theft.

Rader says, "If someone tampers with the system, an alarm sounds, and soon there's going to be a police siren and flashing lights. The farmer gets an immediate alert on their phone that activates when the theft is occurring. Law enforcement will also be notified. The wire is protected on the outside and inside of conduits. Motion and distance sensors can also be placed inside the box."

COP-R-LOCK is built on rugged hardware that works reliably in remote agricultural environments, even those without internet, says Nathan Rosenberg, CEO and co-founder of Farmblox. Tamper-proof equipment is installed on wellheads, irrigation systems, buildings, fences and other equipment that uses costly wiring.

Sensors plug into the Farmblox Monitor, which communicates wirelessly with the Base Station and sends data in real time to a phone or computer app. The system instantly detects problems and sends out alerts. Systems are currently in use by growers in the Central Valley of California and other areas.

"Sales have exploded because of how well the system works," Rosenberg says. "We have more than 15,000 COP-R-LOCK devices deployed, protecting more than 680,000 acres of farmland."

William DeBoer, a dairy farmer in Tulare County, Calif., had wires stolen four times from irrigation wells, resulting in a \$100,000



Security system integrates with control panels and supply lines on wellheads, irrigators and other equipment, instantly sounding alarms and notifying owners and law enforcement when tampering occurs.

loss. Thieves used battery-powered tools and Sawzalls to cut the conduit and wires.

"More lights and fences didn't solve the problem," DeBoer says. "We put cement blocks over conduit, built steel enclosures, and tried other means of protection that thieves were able to break into. After we installed COP-R-LOCK, the devices were totally protected. It gives me peace of mind that my equipment isn't being messed with. Now I can actually sleep at night."

Contact the company by phone or through its website for information on pricing, availability and installation.

Contact: FARM SHOW Followup, Farmblox (ph 617-237-0392; sales@farmblox.ag; www.farmblox.com).