

**Jim Donald, Woodland, Wash.:** "We've discovered that you can shake frozen rusted bolts and parts loose by using an air chisel with a dull bit to vibrate them. Ninety percent of frozen parts will come apart readily after vibrating them for a bit. Some take longer than others, but it usually works."

**Milo Rifenberg, Hillsboro, W.V.:** "You can make your own lock nut by screwing a nut halfway onto a bolt and then placing the nut on an anvil and distorting it with a large hammer. Then when you screw it down, it will lock in place."

**Donald Burton, Glen Arm, Md.:** "If the disc brakes on your old International or Deere tractor stick or are hard to stop, you can solve the problem by lubing the expansion disc balls inside the expansion discs. Just take off the small springs that hold the discs together and give the balls a thorough cleaning. Then coat the balls with lubricant. Make sure to keep the lube off the brake pads."

**Dean Hertzler, Veteran, Wyo.:** "We had carburation problems with two 1976-78 International 1800 Loadstar 446 gas trucks. Instead of rebuilding the expensive original Holly carburetors, we replaced them with high-performance Holly carbs, increasing horsepower for less cost."

**Fred M. Schrader, West Lafayette, Ind.:** "I run my log splitter off the wet kit on my semi-truck. The truck only has to run at slow idle. It's quiet, fast and has plenty of power. Saves maintenance on one more engine and doesn't use a lot of fuel."

**Stuart James, Hammond, Ill.:** "When spraying weeds around my barn lots and farmyard with a hand-held sprayer, my back was taking the worst of it. I solved the problem by mounting the sprayer on a hand-pulled golf cart."

**Lorne Orr, London, Ontario:** "Here's how I repair worn-out tie rod ends. I make up two short pieces of angle iron and drill a hole in one that slips over the bolt on top of the steering arm. The second piece goes under the tie rod end and then I weld the two pieces together so they can't fall off. The makeshift bracket holds the joint tightly together. Turns freely with the tie rod since it's not bolted down or welded to the tie rod. It's strong, safe and costs next to nothing."

**Dale Hallett, Carstairs, Alberta:** "One of the handiest ideas we came up with for our shop is building a couple enclosed heavy-built wood boxes for resting equipment on in the shop. The boxes are about 24 by 20 by 16 in. and are internally reinforced with 2 by 4's. The three different dimensions of the boxes make them handy for support various types of equipment or parts by just turning them one way or another."

**Richard Siems, Melvin, Ill.:** "My father took an old set of vice grips locking C-clamp pliers and fashioned screwdriver tips on the ends of the jaws. They're perfect for removing grease caps from wagon hubs. Saves your hands."

"Neighbors showed me how to use candle wax to remove stubborn frozen parts or rusted bolts. Just heat the metal red hot and put the candle to it. The wax will follow the threads or the shaft and make separation much easier."

**Kenneth LaHaye, Ville Platte, La.:** "Instead of paying \$10 apiece to replace sweeps on my field cultivator, I use my Mig welder to build the worn sweeps back up with hard surfacing. Works good, they last longer, and saves money."

**Mark Blakely, Avon, N.Y.:** "When hanging flexible duct or anything else that you would normally hang with perforated

steel strapping, I've found that old 300 ohm outdoor antenna wire makes a great substitute. It's flexible, corrosion-proof, and easy to cut and install with a deck screw between the copper leads. It's strong, too."

**Russ Bayne, Eddyville, Neb.:** "I use 8 by 16 by 2-in. thick concrete patio blocks on top of my welding table to absorb splatter and help keep the table clean and cool. Works great."

**Joyce Miller, Independence, Kan.:** "I've built bumpers on all six of my tractors to prevent front-end damage. On some of them I also installed radiator guards that are heavy enough to push with the full force of the tractor."

"I'm 89 years old and still work 8 hrs. a day, 6 days a week and don't plan to retire until I have to. My best maintenance tip for equipment is nothing unusual but it works: Just service it regularly. Grease properly and change oil and air filters regularly."

**Denis G. Phillips, Tisdale, Sask.:** "My Massey 90 had poor traction until we installed an 8-in. higher hitch for field work. It eliminated the need for extra wheel weights. When you're doing light field work you don't have to carry the extra ballast, which would compact the land. We've since installed higher hitches on all field tractors."

**Ronnie Reedy, Roscoe, Texas:** "When we were pouring the floor in our garage, the contractor suggested we put in a 2-in. slope from back to front in order to make it easier to wash down the floor. It works well and the slight slope is not noticeable when walking or standing."

**Danny Bigler, Floyd, N.Mex.:** "I was working in my shop last winter and needed steel cut at a different angle so I went to town and bought several steel cutting blades for my electric saw. They were expensive and I used them all up. Then I thought about all those blades from my cut-off saw that I threw away when they got worn down. They were the right size but the hole in the center was too large so I found a washer that would fit the shaft of my saw and the hole in the blade, putting a larger washer on each side of the blade. It worked as good as the expensive blades I was buying and they last as long or maybe longer."

**Bill Reeks, Cromwell, Kent.:** "I buy grease in bulk and have found that if I mix about a can of STP oil treatment into a gallon of grease, it feeds out of the grease gun a lot smoother and seems to do a better job of lubrication. Bearings run quieter."

"I've also had good luck filling a grease gun with rear end oil or manual transmission oil in order to pump the oil into hard-to-reach spots. I've also had good luck putting nuts, bolts and other small parts into plastic peanut butter jars. I carry a bunch of jars around in 5-gal. buckets. They don't break and you can easily see what's inside."

**Daniel J. Krenzler, Cullman, Ala.:** "In Vol. 19, No. 5, Glen Grice of Beechy, Sask., says he uses a piece of 4-in. I-beam to change the sickle blades on swathers and mowers. He rests the main bar of the knife on the beam and then pounds the blade sections with a sledge hammer to break both rivets. Based on my experience, I think one should use caution with that idea. My uncle used the same idea on our 16-ft. Deere swather sickle and he ended up with a 'corkscrew' knife back, and when he tried to straighten the knife it ended up in a long curve. He had to buy a new sickle bar."

In general, the less pounding you do on a sickle the better it will stay aligned.

"The motor on my grinder rotates at 1,750

## Shop Hoist Built From Plow Beams

David and Jason Baan built a heavy-duty, versatile shop hoist out of plow beams.

"We used the two main beams off a Massey Ferguson 880 5-row (16-in.) plow," says Jason who helped his dad with the project. "We used one section to make the 13-ft. tall base post, which is sunk in concrete and bolted to the end of the loft above the shop."

They cut the other plow beam down to 9 ft. to make the horizontal swing arm, which pivots 360 degrees. It attaches to the base post with plates from the plow frame and stainless steel pins from an old Behlen silo unloader.

The mounting brackets and kicker are made from the stabilizer arms of a 3-pt. hitch off a Massey 1085 tractor.

"We bolted an old stable cleaner chain/hook on the end of the horizontal member as an extra feature," notes David. "The 2-ton chain hoist cost me a total of \$149 (Ca-



nadian) to build. I first saw this principle used in a metal shop years ago."

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## Heavy-Duty Home-Built Bridge Crane

This might be the handiest shop crane we've ever seen. It's fitted with two heavy-duty hoists so you can turn a piece of equipment to any angle in midair to make it easy to work on.

Duane Sorben mounted the hoists on a 14-in. steel I-beam that travels back and forth on a pair of 30-ft. steel I-beams mounted along the sides of his shop. An electric motor and gearbox walks the I-beam "bridge crane" across the shop. A separate electric motor and gearbox powers each hoist. Sorben made one of the hoists out of a 6,000-lb. Garrwood winch. The other hoist is a commercial Benson and Meyers model. A wired remote control hangs from each

hoist. "I do a lot of welding and machining so the crane gets used a lot," says Sorben. "At first I used only one hoist. However, I later decided that two would work better because it lets me position equipment in the most convenient working position. For example, I was recently able to install a hoist on a truck box with the box tipped up. After I got the hoist on, I set the box down on the truck. Each hoist has a 1-ton capacity rating."

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rpms while the wheel turns at 3,450 rpms. Optimum surface grinding speed is 5,500 ft. per minute, which is about 60 mph. A 6-in. dia. wheel that turns at 3,400 rpm's has a face speed of about 5,500 ft. per min. You should shoot for that wheel speed if you ever make your own grinder. The rpm's are important because at an improper speed the wheel can shatter and come apart like a 'hand grenade', possibly causing injury. You won't appreciate the problem until you have a grinding wheel explode in front of you. Hopefully, you'll be able to 'walk' away from it."

**Landis Shelton, Webbers Falls, Okla.:** "I made a portable battery charger using a 2 1/2 hp gas motor that belt-drives an alternator. The motor is equipped with a centrifugal clutch. I mounted a small pulley on the clutch and a larger pulley on the alternator. Jumper



cables run from the alternator to the battery. All I do is push a button on an amperage

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