

## Self-Propelled Grain Cart Built From IH Combine

"It's highly maneuverable which makes unloading into a semi truck a much easier job. It also frees up a tractor," says Noel Hicks, Palmyra, Ill., who built a self-propelled grain cart out of an International Harvester 1480 combine with a 650-bu. Brent grain cart on back.

The machine was in the field for the first time last fall.

The combine came equipped with a Mud Hog rear wheel assist steering axle. He tore the machine apart from the top down, saving only the drive train, 200 hp 466 cu. in. diesel engine, cab, and variable 3-speed transmission. The combine's original frame wasn't heavy enough to support the weight of the grain cart, so he built a new frame out of steel off a Deere moldboard plow. He reversed the position of the combine's axles, so that the combine's rear steering axle is now on front and the front driving axle is on back. He mounted the engine below the cab and under the grain cart's sloping front end. About 70 percent of the grain cart's weight is on the

rear axle and 30 percent on the front axle.

Power is provided to the cart's 14-in. unloading auger by the electric clutch that originally drove the combine's rotor. The auger is controlled by a hydraulic lever that lets the operator precisely control the flow of grain.

The cart has a hydraulic-controlled gate inside the hopper which controls the flow of grain to the unloading auger.

"I like how it handles, especially when I steer it up to a semi trailer for unloading. The response is immediate," says Hicks. "It also works great on soft ground. Carrying a load is completely different than pulling a load, because it takes much less power. No matter how big a tractor you use to pull a wagon, the axles will drag on soft ground. Another advantage is the cab is positioned up high so I can see down into the semi trailer when loading it."

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Noel Hicks and the self-propelled grain cart he built out of an IH 1480 combine.



Richard Ackerman converted this 40-ft. long, 8-in. dia. auger into a low-cost crane. "It works great for trimming trees and for lifting rafters onto buildings," he says.



The "Pelletizer" is gravity fed, with no auger assembly and no bulky blower.

## Mini Pelletizer Heats Grills, Smokers, Heaters

The "Pelletizer" is a completely new and better way of burning wood pellets for a variety of different applications with none of the many problems that other pellet-burning systems have, according to inventor Patrick Leverty of Boy River, Minn.

The compact 10 by 10 by 6-in. burner is gravity fed, eliminating the need for an auger assembly, and there's no bulky blower. It's made from aluminum, stainless steel and high temperature silicon fiberboard. The patent-pending Pelletizer prototype weighs only 5 to 6 lbs., Leverty says, and the new technology is both portable and affordable.

"At an estimated \$300 price, once the Pelletizer is in production, almost anyone will be able to afford a pellet stove whereas most existing pellet-burners start at least \$700," he points out. "My burner produces a flame at well over 2,000 degrees Fahrenheit, and it can be used in a multitude of different applications such as for a grill, smoker, camp stove, orchard heater, kiln, metal melting pot or emergency heater. It's small enough to keep in the trunk of car and very versatile, due to its size, simplicity, and the fact that the fuel is in solid form, making it easy to handle and replenish."

Leverty invented the device while experimenting with wood gasifiers. He soon real-

ized the Pelletizer had a lot of promise.

The Pelletizer is powered by a 12-volt air pump. It draws about one amp. and can heat a 12 by 16-in. grill to over 450 degrees.

The prototype has an adjustable heat setting and a 12-volt electric starter which gets the unit running within 1 to 3 minutes. Once the flame is established, it's clean burning and makes "just enough noise to let you know it's working," Leverty says.

It's also inexpensive and efficient to run because wood pellets cost less than half the cost of propane or charcoal. A full hopper of wood pellets will run for about 3/4 of an hour and can be refilled at anytime during a burn.

"Gas grills feature quick starts, however they don't infuse any desirable flavors to the food being cooked," Leverty points out. "With rising fuel costs, people start looking to renewable fuel alternatives. Charcoal is a renewable fuel resource and produces good flavor, but the fuel cost is quite high, and the slow starts are a definite disadvantage."

Leverty is willing to consider selling or licensing the rights to this invention.

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## "Grain Auger" Crane

Old worn-out grain augers can be easily converted into low-cost cranes that work great for trimming trees and for lifting rafters onto buildings, according to Richard Ackerman of Columbia, S. Dak.

He found a 40-ft. long, 8-in. dia. auger at a local dump complete with engine and gearbox. The only thing wrong with it was a worn-out wheel bearing which he easily repaired.

He welded a ball hitch receiver onto the lower end of the auger so he could pull it to various locations with his pickup, and so that he could hitch the auger to his skid loader bucket via a hitch ball mounted at the center of the bucket.

On the upper end of the auger he installed a swinging "man carry" - a 4-ft. long, 2-ft. wide metal platform equipped with a safety belt - that's secured to the auger by pins. He fastened a shaft to the man carry and a tube to the auger to form a brace, with adjustment holes for a pin. Once the auger is raised to the proper height for tree trimming, painting, or repairing, the operator pins the brace to keep the man carry steady while he works.

The auger is balanced so that the upper end can be pulled down to the ground by a length of rope permanently attached to that end.

"It works great - we don't use it all the time, but it's nice to know it's there when we need it," says Ackerman. "It really comes in handy for trimming tree branches that hang over buildings and saves the expense of hiring someone to do the job."



An electric winch with cable was installed on the bracket originally used to hold the auger gearbox.

"One time we used the auger as a crane to install the rafters on a building project. We installed a 12-volt, 8,000-lb. winch on the bracket that was originally used to hold the auger gearbox. We put a cable pulley on the upper end and ran the cable over it with a hook on the end. We were able to easily install the rafters and position them exactly in place. In fact, we were able to lift four rafters at a time.

"There are a lot of smaller augers like ours lying around going unused or in dumps, because so many farmers have switched to high capacity augers," he notes.

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