Christian made cleaner from an old fan, plastic drainage tubing, and sheet metal .

HEAVIER DIRT PARTICLES AND WEED SEED FALL OUT THE BOTTOM

His Combine Cleaner Sucks Trash From Grain

Bill Christian, Pullman, Wash., used an old fan, plastic drainage tubing, sheet metal, and hardware cloth to build a combine "vacuum cleaner" that mounts just above the grain tank on his International Harvester 1470 combine.

As grain passes from the clean grain elevator to the grain tank auger, trash is sucked out the top by the fan or falls through a screen at the bottom of the cleaner and drops to the ground.

The 18-in. dia. fan is belt-driven by the combine's clean grain unloading auger. Trash is drawn into a back pressure chamber (an L-shaped sheet metal box bolted to the top of the elevator head), sucked up a 6-in. dia. drainage tube, through the fan and down more tubing onto the ground. Heavier trash such as weed seeds and clumps of dirt drops through a screen at the bottom of the chamber and into a 2-in. dia. pipe that extends through the side of the grain tank.

"I built it because the fan on my 1470 combine doesn't have enough volume to clean all of the trash out of grain passing over the sieves and into the elevator," says Christian. "Using suction, rather than blasting air through the grain, is more effective in lifting trash away from grain. The L-shaped design is an important feature because it prevents grain from being sucked out by the fan along with trash when the combine is on steep hills. Since we installed the cleaner our elevator operator recognizes my grain because there's never a dust storm during unloading. I can also get more grain in my bins. Before I built my cleaner there was always a 4-in. layer of dirt on the bottom of the bin. Now there's barely a layer of dust."

The cleaning chamber, built from 14 ga. metal, is 8 in. wide - the same width as the elevator - and is built in two parts that are bolted together. A short length of aluminum pipe welded to the chamber connects it to the plastic tubing. Christian unbolts the top half of the cleaner to get the combine in his shed.

The screen, made from hardware cloth, extends diagonally from 2 in. above the bottom of the cleaner to just above the elevator auger. A 2-in. dia. hole in the bottom of the chamber allows trash to fall into the pipe. Christian says he plans to cut a slit in the chamber so he can install screens equipped with handles. "The screens will be of varying sizes depending on the type of crop I'm harvesting," says Christian.

Contact: FARM SHOW Followup, Bill Christian, Rt. 2, Box 674, Pullman, Wash. 99163 (ph 509 334-5933).

LIVESTOCK WON'T CHALLENGE IT

Do-It-Yourself ATV Ramp

Concrete reinforcing rod was welded together to make the 2-ft. high ramp.

"My 1-ton bull will walk right through a wooden gate but he took one look at my ATV ramp, shook his head, and walked away," says Larry Zenz, Parks, Ark., who came up with a simple design that works.

Two different sizes of concrete reinforcing rod were used to make the ramp. It's 4 ft. wide, 13 ft. long and 2 ft. high.

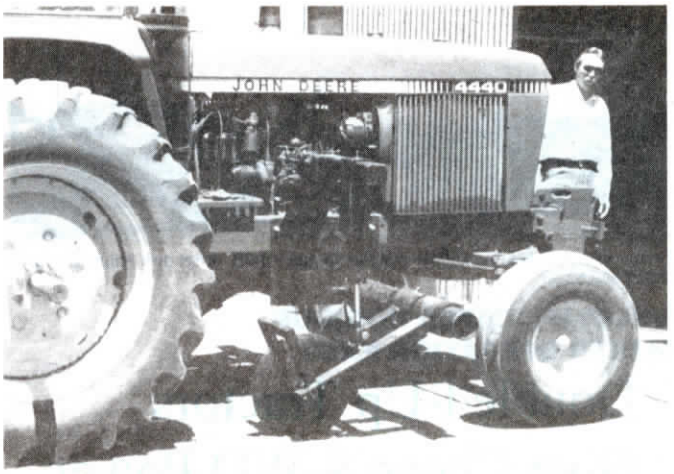
The two main "bows" are 1-in. dia. rebar that Zenz bent by strapping it to a tractor loader. The curved rods are held in position by two 13-ft. lengths of 5/8-in. dia. rebar welded to the ends of each bow. Two short braces run from each bow down to the bottom crosspieces.

The bows are positioned 32 in. apart. A 4-ft. length of 1-in. dia. rod runs across each end of ramp. Then 4-ft. lengths of 5/8-in. rebar were welded across full length of the ramp spaced 4 in. apart (Zenz used 140 ft. of rebar for this).

The final step was to attach a length of 5/8-in. rebar to the outside edges of the ramp, welding them to the ends of the 4-ft. crossbars.

"The ramps save a lot of time and energy moving between pastures to feed or check cattle," says Zenz.

Contact: FARM SHOW Followup, Larry Zenz, HC 60, Box 154, Parks, Ark. 72950 (ph 501 577-2677).



Sharp-edged wheel makes a furrow that's 7 to 9 in. deep and 5 in. wide. Furrow is easy to follow with single rib tires on tractor and guidance wheels on cultivator.

USES TRACTOR WEIGHT TO CREATE DEEP GUIDE FURROW THAT WON'T WEAR AWAY

Tractor-Mounted Guide System Runs 7-9 In. Deep

"This is the guidance system everyone's been looking for," says Emeric Bernard, Tintah, Minn., about his "under-tractor" guidance system that uses the weight of the tractor to form guide furrows 7 to 9 in. deep and 5 in. wide.

Bernard designed and now manufactures the new system, which uses sharp-edged wheels to make the deep furrows. "I built it because we weren't happy with other systems on the market. Other systems use the weight of 3-pt. mounted implements to dig a furrow. This system uses the weight of the tractor and forms a deep, distinct furrow that'll stand up to heavy rain and irrigation. Guidance systems that use wand-type sensors require lots of electronics and can be thrown off the row if they hit a corn stalk or a dirt clod. This system makes a trench that's hard and distinct. It's the only guidance system that works well in heavy trash. The furrow is easy to follow with single rib tires on the tractor and the guidance wheels on the cultivator. Once you're in the furrow, you can take your hands off the wheel and forget about steering."

The system consists of two wheels made up of two heavy-duty 7 ga., 20-in. dia. concave discs sandwiched together over a center plow coulter which protrudes about 1/4 in. to provide a cutting edge. Each wheel is 5 in. wide at center. The disc assemblies mount on a toolbar that runs under the tractor and bolts to the tractor frame. A pair of hydraulic cylinders raises and lowers the discs. In operation, Bernard recommends running the discs 7 to 9 in. deep so that the bearings run just above the soil surface. Discs are mounted on breakaway mountings for protection from rocks or other obstacles. Bernard is working on a unit with hydraulic bypass to provide automatic reset for use under rocky conditions.

Bernard built the first prototype 3 years ago while working as a farmhand in the Red River Valley. "I realized it was a marketable idea after the first time I took it to the field. When other farmers began to approach me to build one for them, I decided to go into business."

He formed a corporation with several partners and contracted with a manufacturer to build the units. He's been selling them for the past two seasons. The first year he sold 7 systems. Last season he sold 47.

The system itself is built heavy, weighing about 1,000 lbs. It includes two 3-in. dia. hydraulic cylinders. "Everything is built extra heavy to stand up to the weight of the tractor," says Bernard.

The under-tractor mounting system is designed for 3-pt. mounted planters. With pull-type planters, the wheel assemblies mount directly on the planter toolbar so no under-tractor frame is needed. For cultivating and other chores, the wheel assemblies are simply switched to the tillage toolbars.

Bernard says the system allows 50% higher speeds when cultivating and makes it possible for inexperienced help to do the job well. "It also lets you reduce chemical rates when banding the row. Instead of setting spray patterns 7 to 9-in. wide, you can make them 4 to 5-in. wide."

The under-tractor system sells for $3,500. If you use a pull-type planter, you'll need only the breakaway wheel assemblies for mounting on the toolbar. They sell for $816.

Contact: FARM SHOW Followup, Bernard-Hensch, Inc., Rt. 1, Box 58, Tintah, Minn. 56583 (ph toll-free 800 648-0506, or 218 369-2458).