

Prototype mower mounts on front of tractor. Cutting rotors are fitted with paddles that spread hay out as it's cut.

## COMBINES THE BEST FEATURES OF SICKLEBAR AND ROTARY MOWERS

# Revolutionary New "Rotary Sicklebar"

You've never seen anything like this revolutionary new "countershear" rotary mower that combines the low knife speed of a sickle bar with the rotating motion of a rotary mower, allowing fast, safe cutting and reduced bunching of hay.

Sverker Persson, agricultural engineer at Penn State University, University Park, Penn., spent years looking for a new mower design that would make use of the best features of existing machines. He says tests of his prototype "countershear" mower have been exciting. "It gives you the benefits of sicklebars and rotary mowers without the slow forward speed of conventional sickles and the high power and dangerous speed of rotaries," he says.

The prototype mower is fitted with a pair of cutting units, each unit consisting of two counter-rotating rotors, one above the other. The top rotor has 2 1/2-in. long curved fingers while the bottom rotor is fitted with 2-in. long cutting knives that run just below the curved fingers, turning in the opposite direction.

"The knives are able to run at a much slower speed than the knives on a rotary mower because of the countershear action of the rotors," says Persson, noting that his new mower requires much less power than a conventional rotary mower. "The design makes the rotor less vulnerable to damage from rocks and less likely to throw them. The fingers, which are longer than the knives and move slower, push rocks out of the way

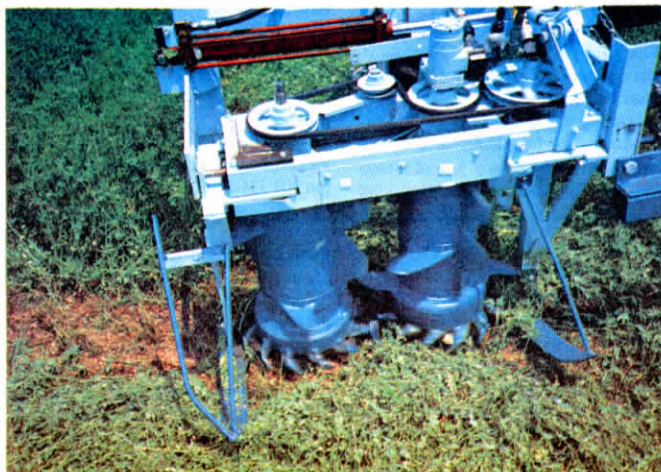
before the knives can hit them."

According to Persson, the rotary action of the mower produces much less vibration than a sicklebar mower which allows a faster travel speed, about the same as a conventional rotary mower. "The rigid design of the rotors keeps knives from working loose like they do on a sicklebar mower and allows them to work with less clearance for a cleaner cut. I've tested the mower successfully in everything from heavy weeds to fine grass. It doesn't plug up as easy in bunched hay as a sicklebar mower does. The curved fingers and the paddles mounted on the sides of the cutting columns keep hay moving. Cut material is left in a fluffy swath that dries fast."

The rotors are belt-driven by a hydraulic motor. Front-mounted skid shoes and an adjustable rear-mounted support wheel are used to adjust cutting height. A hydraulic cylinder folds the unit inward for transport.

Persson's small test mower is front-mounted on a Deutz-Allis tractor, but could easily be converted to a pull-type unit with additional cutting units. Persson says at least one company has already shown interest in manufacturing the mower.

For more information, contact: FARM SHOW Followup, Sverker Persson, Dept. of Agricultural Engineering, 249 Agricultural Engineering Building, Pennsylvania State University, University Park, Penn. 16802 (ph 814 865-2963).



Curved 2 1/2 in. long fingers "counter-rotate" against cutting knives.



Fold-down bin extension is made out of 12-ga. steel panels fitted with see-through mesh-covered portholes. Short add-on auger mounts inside tank to fill extension.

## ADDS UP TO 235 BUSHELS TO CAPACITY

# Huge Combine Bin Extension

New "giant-sized" fold-down combine bin extension adds up to 235 bu. to your combine's total hopper capacity, allowing you to make a complete 1-mile round trip with an 8-row corn head so you only have to unload grain at one end of the field, according to Dick Vortherms, manufacturer.

The huge bin extension fits the largest Deere, Case-IH and Gleaner combines and is available in two models that add 18 in. or 24 in. to the grain tank height. It's supported by a steel subframe that bolts on top of the existing grain tank and by a pair of stabilizer arms that mount on the frame of the combine at the front and rear.

Vortherms, owner of Dick's Welding, Inc., Windom, Minn., has been custom building bin extensions since 1982 and is now marketing them through a distributor, Implement Dealer Supply, Inc., Mountain Lake, Minn.

"As far as I know it's the largest bin extension on the market," says Vortherms. "It eliminates the need to leave trucks on both ends of a half-mile long field or to run a grain cart alongside the combine. It brings total combine capacity up to 500 bu. on the Gleaner R-60 model and 425 bu. on the Deere 9500 model. The existing Gleaner tank holds 300 bu. and an 18-in. high bin extension adds 200 bu. while the Deere 9500 tank holds 190 bu. and a 24-in. high bin extension adds 235 bu. Farmers who've used it haven't had any problems at all. I don't know what effect it has on the combine warranty, but for the last five years I've been selling bin extensions direct to some Deere dealers who install them on brand new combines. It can be mounted on the Deere 9600, 9500, 8820, and 7720 combines, but not the 6620 combine because the frame and rear axles aren't heavy enough. It can also be mounted on the Case-IH 1680 and 1660 models as well as Gleaner R-40, R-50, and R-60 models and N-5, N6, and N-7 models. The extensions are painted to

look like part of the original combine.

"The bin extension is no wider than the combine itself. The weight of the extra grain is supported by the subframe instead of the original tank, and the stabilizer arms provide extra support when the combine drops into a hole or bounces over end rows. One stabilizer arm is mounted on the right side of the combine in front, and the other is mounted on the left side at the rear."

The extension is made of four 12-ga. steel side panels that bolt onto the subframe through a hinge that lets each of the four sections fold down separately when pins are removed. The sides can be automatically folded up or down from the cab by using an optional battery-driven electric winch that controls four cables, one supporting each side panel. The operator simply pushes a button in the cab to fold the sides down. When folded, the combine returns to its original height for storing indoors. Eight see-through mesh panels let you see when grain in the bin nears the top.

A 30-in. long, 8-in. dia. vertically-mounted auger can be mounted inside the grain hopper to take the pressure off the combine cross auger or fountain auger. It lets you fill the extension more completely and evenly. By loosening two set screws the auger quickly folds down for storage or slides back and forth on its mounting bar to reposition the peak of the grain. The add-on auger is powered by an orbit motor that mounts on the bottom end of the auger and is hooked up to the hydraulic hoses that drive the combine's reel.

Both the 18-in. and 24-in. bin extension models sell for \$1,895. Optional electric winch sells for \$450.

For more information, contact: FARM SHOW Followup, Implement Dealers Supply Inc., West Hwy. 60, Box 368, Mountain Lake, Minn. 56159 (ph toll free 1 800 523-6227).