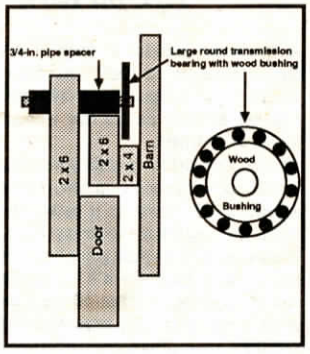
"No Friction" Sliding Door

"It works better than any sliding door I've ever seen," says Art Shepard, Curtis, Wash., who built his own door after being frustrated by commercial doors that were difficult to move and often got stuck.

Shepard first built a track for the door using a 2 by 4 and a 2 by 6, bolted on top of each other just above the barn door against the side of the barn. He then attached two lengths of 2 by 6 to the top of the door and fit them with two large transmission bearings. He presses wood bushings into the center of the bearings so that when the door is moved, only the outer race of each bearing turns, making for extremely smooth movement of the door.

"If it's a big door, you can use three bearings to support and roll the door. The size of the track and the size of the bearing can all be changed to fit available materials," notes Shepard, who installed the rolling door track on a heavy 20-ft. wide cedar door.



Contact: FARM SHOW Followup, Art Shepard, Box 635, Curtis, Wash. 98538 (ph 206 245-3749).

"Snout" Sickle Cuts Away Soybean Stems

A 1 ft. long vertical sickle, sticking through the right snout of his Gleaner combine's soybean head, lets LeRoy Bauer, Shakopee, Minn., cut away soybean stems that would otherwise "bunch up" on the snout.

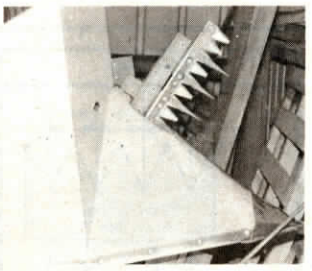
Bauer, who drills all his soybeans, says lodged plants often caused problems. "No matter which way the plants were leaning, they'd bunch up and eventually plug up the end of the sickle. Now, the plants go right on through. They didn't plug up once last fall."

To build the knife, Bauer bolted 6 knives to a sickle removed from an old silage chopper, then bolted 6 guards to a 10 in. length of 1 1/2 x 1 1/2 in. angle iron.

To make room for the sickle, Bauer cut a 1 x 6 in. slot in the snout. He also added a piece of tin, fitting it between the snout point and knife. The tin is shaped so beans slide smoothly into the knife.

A hydraulic oil pump connected to the bean head's drive shaft delivers oil from an 8 gal. beer keg, clamped behind the bean head, to a nearby orbit motor. This motor drives a 4 ft. shaft running diagonally along the bean head. The shaft's lower end is connected to a pitman which drives the sickle up and down.

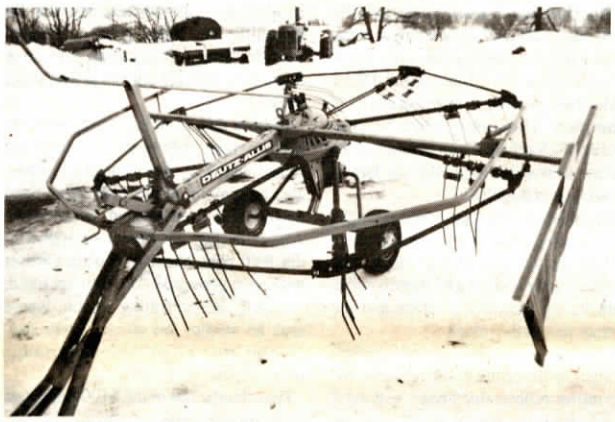
"All of the combine's hydraulic valves were used up, and that's why we had to mount the oil pump on the drive shaft," says Bauer. "Anytime the drive shaft is running, the vertical knife is running. The knife runs fairly slow, less than 100 revolutions per minute, so it hardly wears at all."



Bauer plants soybeans with a 13 ft. drill, leaving 1 skip row so that when he makes 1 round he has 2 tracks for his 26 ft. sprayer, used to apply postemergence herbicides. "I always begin combining by keeping the left edge of the bean head in the skip row, so the add-on sickle isn't needed for the left side of the bean head. After I go through the field once, I cut clockwise in small circles so that the left side of the bean head is always over beans that already have been harvested."

Bauer figures he spent less than $100 for his invention. He already had the orbit motor, and he borrowed the 4 ft. drive shaft from an old silage chopper. His main cost was the oil pump.

Contact: FARM SHOW Followup, LeRoy Bauer, 1845 W. 130th St., Shakopee, Minn. 55379 (ph 612 496-1703).



Solving Rotary Rake Tine, Arm Problems

Broken tines and bent arms on his Deutz-Allis rotary rake led John Grimm, Faribault, Minn., to improve the rake's design with 2 major modifications - which might work on other brands of rotary rakes as well.

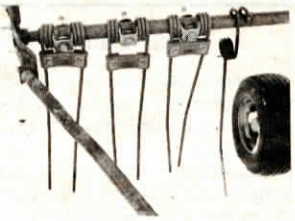
Grimm's 10-ft. dia. rotary rake features 8 arms extending from a hub mounted above 2 wheels. Each arm is factory equipped with 3 sets of 10-in. tines, and each set of tines has 2 coils supporting them.

Grimm had problems with both the tines and arms. He describes the tine problem as "a manufacturer's goofup."

"The coils are supposed to take the shock as the tines sweep up hay," he says. "Unfortunately, the coils were positioned 1 1/2 inches below the arm. A single rod, 1 1/2 inches long and clamped onto the arm, was taking the shock and breaking way too often. I went through a whole set of tines."

To solve the problem, Grimm got the help of neighbor Floyd Caron, who owns a machinery repair business. Caron cut off the top single rod and slid the coils over the arm, using the same clamps to secure them. "The coils now take the shock, not the single rod," says Caron.

The rake's other problem was that the arms were bending, especially when



Grimm used the rake in rough ground with gopher mounds or dead furrows. To solve the problem, Grimm and Caron connected the ends of all 8 arms with a series of welded-on pipes, 4 ft. long and 1 in. in dia.

On the end of each arm, Caron welded a 4-in. rod with a self-centering bearing. This bearing fits inside a hole cut into a 10 x 4 in. steel plate. The bearings allow for the pivoting motion of the arms as they raise or lower the tines.

The pipes are welded to these plates, forming an octagon-shaped barrier which protects individual arms from obstructions. "Before, when the rake hit an obstruction, at least one or two arms would bend badly," says Grimm. "Now, all eight arms work together to take the shock, and the whole rake slides over.

"You can't beat a wheel for strength. Also, I feel it's now a safer rake because a person isn't as likely to get hit by the swinging arms."

Since making the changes, Grimm says he's broken only 1 tine - and bent no arms. "I don't know how many other brands of rotary rakes have similar design flaws, but for those that do, these modifications just might be the cure," he adds.

Contact: FARM SHOW Followup, John Grimm, 18820 Cannon City Boulevard, Faribault, Minn. 55021 (ph 507 332-8325).

High Yield, "Twin Row" Corn Planter

It works great for planting high populations of corn used for silage, says John Joost about the "twin row," double toolbar planter he built 10 years ago on his farm near Stevensville, Mont.

Joost uses the rig to plant twin rows 4 in. apart on 30 in. centers. He built the planter by combining 2 International 4-row planters, models 185 and 225. Both are 3-pt. mounted, ground driven toolbar planters.

Joost combined the two planters into one by placing one planter in front of the other and welding in rods to connect their toolbars. Seed openers on the rear planter are 4 in. to the side of seed openers on the front planter.

The "twin row" planter allows Joost to double his plant population to a whopping 72,000 seeds per acre. According to Joost, such high populations result in a 33% higher silage yield than is possible with conventional planters. He feeds the silage to 130 dairy cows.

"The 'twin row' planter lets us go after high silage yields," says Joost. "Single row planters don't work as well for high populations, because in a single row, the plants are too close together. With twin rows, there's more growing space for each plant."

To combine the two planters into one, Joost removed the model 185's hitch, then positioned its toolbar and planter units behind the model 225. To connect the planters, he welded two sets of 4-ft. long, 2 x 2 in. bars between the toolbars. Each set of welded-in bars is 3 in. apart, and 2 ft. from the end of the toolbar.

He then mounted a 3/4 in. rod on the top link of the front planter's 3-pt. hitch, welding the other end of the rod to the rear planter's toolbar. "This rod keeps the rear planter's toolbar from sagging, so that both planters lift up evenly for transport," says Joost.

Contact: FARM SHOW Follow-up, John Joost, 3356 East Side Hwy., Stevensville, Mont. 59870 (ph 406 777-5528).

(Continued on next page)