

## “Concave Popper” Stops Combine Plug-Ups

In the 1970's and 80's, Washington farmer and custom combiner Ben Grant owned 13 Massey Ferguson combines, replacing them every year. That made him one of the company's best customers. He was also one of the most innovative so Massey Ferguson engineers regularly brought their latest prototypes to him to test. (In fact, he still owns one prototype combine that the company never put on the market. He was allowed to keep it but had to agree he would never sell it.)

Recently, Grant's one-of-a-kind self-propelled grain cart was featured in FARM SHOW (Vol. 19, No. 4). In the course of discussing several other pieces of equipment he's built, he happened to mention that one of the best ideas he ever had never came on the market and has never - to his knowledge - been installed on any combine other than his own.

Called a “concave popper”, he says the add-on device totally eliminates cylinder plug-ups in his Massey combine. He feels the idea would work on any combine with conventional cylinder and concave.

What he did was to install a sensor on the cylinder that monitor's rpm's, and a small hydraulic cylinder on each corner of the concave. If the cylinder's rpm's drop 10 percent or more, a hydraulic valve opens, activating the four cylinders in less than 4/10ths of a second, opening the concave up to let whatever material is slowing the cylinder down pass through. After a 4 second

delay, the cylinders retract, pulling the concave back into operating position.

Operation of the system is totally automatic. “It's almost impossible to plug up this combine now. We harvest a lot of irrigated crops that often have tough, viney stems. We used to waste a lot of time clearing out plug-ups. Now they just pass through. You'll be driving along and all of a sudden you hear ‘boink’ as the concave pops up and lets a slug through. You don't have to do anything, although you can adjust the system to make it more or less sensitive depending on what conditions you're operating under.”

Grant used conventional 1 1/2 in. dia. cylinders on the concave, positioning them between drive chains. When activated, they open the concave 4 1/2 in. wide at the front edge and 2 1/2 in. at the back.

“You could feed a 2 by 4 into it and it would roll right through. We tried to plug it up once by feeding wet burlap sacks through the cylinder with the concave set tight with just a 1/8-in. gap. We got up to 8 wet sacks fed in together before it plugged,” says Grant, who says he doesn't have any plans to put the “concave popper” on the market but “wouldn't mind if some manufacturer picked up on the idea. It would save a lot of hassles for most combiners”, he notes.

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“Best  
Ideas”



Beach balls placed in cattle pens help reduce stress, New Zealand researchers say.

## Beach Balls Keep Livestock Happy

Researchers in New Zealand say giving livestock something fun to do pays off in better conversion rates and less disease.

Dr. Christian Cook, an animal scientist at a government research center, has been experimenting with putting big beach balls into cattle pens. You might say he's turning them into “playpens”.

Cook says research has shown that stress in livestock can severely affect the production and quality of meat, resistance to disease and reproductive capability. “Children given a rich environment with lots of things to play with and explore do far better as adults when faced with stressful situations. The same applies to animals,” says Cook who uses remote telemetry equipment to measure the benefits of play to cattle.

There are other aspects to reducing stress that Cook has identified. For example, he notes the benefits of keeping young animals together as a group. “Herds establish strong

social linkages which tend to reduce stress. They don't like to be mixed with unfamiliar animals. It produces a lot of aggressive behavior. Instead of putting their energy into growth, they put it into fighting other animals.”

By keeping animals happier, stress may be reduced when they're later transported to market. Cook straps telemetry units to the back of sheep and cattle to measure heart rates, electrocardiogram and body temperatures during transport. He notes that laws have already been introduced in Europe governing transport of animals and that it's only a matter of time before it becomes a concern worldwide. He says the agricultural community needs to discover ways to handle animals that cause less stress before solutions are forced upon them by the government.

(Story and photo courtesy Farm Equipment News, Auckland, New Zealand)



Twine hobbles are a quick, low-cost method of keeping cows from kicking.

## Here's How To Fix A Metal Roof

Fixing leaks in an aging metal roof is a job that can tax the skills of any do-it-yourselfer. Here's a solution developed by professional roofing contractor Wesley Fox.

“As far as I know, there's no better or cheaper way to stop leaks,” says Fox. “There are four places where leaks develop on a metal roof: along seams, around fasteners, around vents or other protrusions, and holes in flat surfaces. You can use this method to repair any of these types of leaks.”

Fox uses a product called Kwik Kaulk, a sealer that comes in 2-gal. buckets, and 100-ft. rolls of 4-in. wide poly fabric.

“To repair a long crack in a seam, you first brush the caulk onto the surface and then apply the fabric on top so it's embedded in the caulk. Then you brush another layer of caulk on top of the fabric. This gives you a seamless, reinforced seal that'll last for years. Kwik Kaulk is easy to apply, stays flexible, and cleans up with water,” says Fox.

You can make the same repair over leaky fasteners and rusted-through holes in flat surfaces. And Fox points out, Kwik Kaulk also works to repair flashing, chimney's and



Kit includes 2-gal. bucket of Kwik Kaulk and a 100-ft. roll of 4-in. wide poly fiber.

other problems spots on all types of roofs.

“One secret for long term metal roof maintenance is to give plenty of attention to the fasteners. Remove any loose fasteners and replace them with screw-type fasteners, which will secure the roof better.”

Fox sells a roof repair kit for \$85 that includes a 2-gal. bucket of Kwik Kaulk and one 100-ft. roll of poly fabric (shipping included).

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## Twine “Hobbles” Keep Cows From Kicking

When beef cows have sore teats from severe weather they often get ornery when calves try to nurse and will kick them away. One way to stop the problem is to hobble their rear legs. You can do that cheaply with baling twine, according to Heather Smith Thomas, Salmon, Idaho.

She and her husband Lynn use four strands, making a non-slip loop around each leg above the dewclaws, leaving 12 to 15 in. of space between the legs. They say that the most important thing is to use a non-slip knot so the hobbles don't tighten down

and cut off circulation.

When sores on teats heal, they just snip the hobbles off with a shears and throw them away. Thomas notes that another use for hobbles is on first-calf heifers that don't want to nurse their calves. Once the calf has nursed a couple times, you can usually take the hobbles off.

For more information, contact: FARM SHOW Followup, Heather Smith Thomas, Box 215, Salmon, Idaho 83467 (ph 208 756-2841).