

Air System Moves Silage

Minnesota farmer John Hellerman, of Melrose, has invented a new "Forage Convey Air System" that transports corn silage, haylage, shelled corn and other grains.

"Commercial pneumatic systems can't handle corn silage or haylage because the stems have problems going through the airlock systems and plug up," explains Hellerman, who's tested the air system for 2½ years on his own farm.

He runs silage 112 ft. through 4 in. aluminum tubing from the silo to an ensilage mixer in a feed room. "Without the air system," says Hellerman, "It would take 3 conveyors to reach the mixer."

To prove the air system's effectiveness, Hellerman designed a special pipe "test course." He ran 235 ft. of pipe from the silo to the far side of his barn, putting five 90° turns plus a 26 ft. lift into the line to see if corn silage would move through the system. It did at the rate of 3½ tons per hour. Haylage capacity is lower.

The air system is ideal for farms where you need to move



feed to a distant area and where conveyors would be too costly and difficult to put up and maintain, says Hellerman. Another advantage is that if there is a breakdown, maintenance is in one easy-to-reach location. Also, by putting a flex tube on the discharge, you can have pipes running to separate groups of livestock.

The key to Hellerman's air system is the air lock, which he explains, works much like a revolving door, to move material into the air flow without losing air pressure.

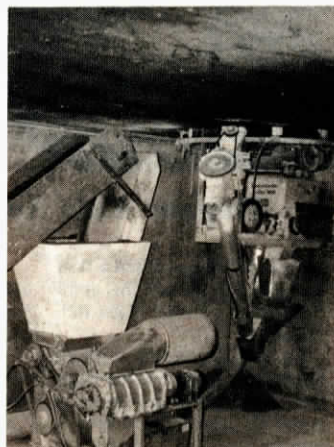
Air flow is generated by a 7½ hp. motor powering a blower with a 4 lb. per sq. in. maximum air pressure rating. This air is forced through a tube picking

up the material from the air lock and exiting into the 4 in. pipe.

The air lock consists of 2 rotors, powered by a 1½ hp. motor, that pack the material, and feed it into the air flow. The top rotor, with a 6½ in. dia., turns at about 500 rpm while the bottom rotor, with rubber tip paddles, is 16 in. in dia. and moves at 10 rpm.

Hellerman notes that the unit can be moved to other sites as needed. He's working on getting the unit into commercial production, estimating that the price would be competitive with running a conveyor 100 ft.

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Old Gravity Box Becomes 330-Bu. Grain Wagon

"I converted an old grain gravity box of 125-bu. capacity into a 330-bu. wagon with a center dump," says Alfred Jessen, Rt. 2, Tyler MN 56178.

The old model (Little Giant) wagon was 10 ft. long by 7 ft. wide before Jessen cut a foot off each end, using his circle saw with a metal cutting blade. Then he bent the ends up and bolted them to the sides and turned the whole box crosswise.

Next, he bought sheets of black steel and had them fashioned by a local blacksmith into 2-ft. extensions which were bolted to the top of the box.

The new box, now with a capacity of 330 bu. is mounted

on a 5th wheel trailer which also is made of salvaged materials. The trailer main frame is built of 10 in. bridge channel iron, and the axles are I-beams. Wheel spindles came off a pull-type combine and wheel rims off an old truck.

No changes were made in the dump mechanism, which Jessen says works good at the elevator or on the farm.

Total cost of materials was under \$100, plus labor. Jessen likes it so well he built a second converted wagon and is now working on a similar conversion of an old gravity box into a 400-bu. wagon.

Home-Made Stove Burns Wood and Waste Oil

This home-made, wood-burning farm shop stove can overcome almost any temperature extreme northwestern Wisconsin has to offer, says its designer-builder Arlen Strate, of Roberts.

A partner in Russmar Farms, Strate built the stove with an electric fan on its lower back side which forces air up and across the top through warming tubes and out into the shop itself. Backing up the forced-air system is an overhead "Casablanca" fan.

Strate used ¼-in. sheet steel to make the fire chamber plus air tubes, which measures 2 ft. wide, 3 ft. high and 40 in. deep. Along with wood, the stove also burns about 200 gal. of waste oil a year, dripped in from a reservoir tank shown in the upper right of the photo.

The pole-type, metal-clad shop measures 40 by 35 ft. and is insulated. Strate says the home-built stove is capable of keeping the shop warmed to a 60-70° temperature range.

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