

Canadian Museum Features Old Threshing Equipment

Hovland Traveling Thresher

August and Ole Hovland's threshing machines may have revolutionized farming, but when it came to getting credit for their inventions, they missed the harvest.

Today's descendant of the Hovland brothers' "central delivery reaper" is the swather. The Hovland's other creation, the "travelling thresher", contributed to the development of today's combine. That's according to the Western Development Museum in Saskatchewan, which has the original Hovland inventions in its collection.

Although August and Ole Hovland planted the seed for a technological revolution in agriculture, they never made a profit from their ideas.

"My father was an extremely gifted person, and extremely modest," says Warren Hovland, 80, Ole Hovland's only surviving son.

August and Ole Hovland took out homesteads near Ortley, South Dakota in the early 1900's. Money was scarce and so was farm labor, and the brothers searched for a more efficient way to harvest because traditional threshing crews relied on teams of horses and a gang of people to gather sheaves and pitch them into the threshing machine.

The Hovland brothers came up with a simple idea that ushered in modern farming. They noticed that cut grain seemed to dry better when lying loose rather than bundled into sheaves. On Feb. 25, 1907, August Hovland took out a patent for the "central delivery reaper" that would leave grain in long rows to dry. He also secured a patent for a "traveling thresher" that when pulled behind a tractor, would pick up the rows and thresh them on the spot.

But a farming practice that is taken for granted today was strongly resisted 90 years ago. The Hovland brothers started a company in 1909, but were unable to convince many



"Traveling thresher" contributed to the evolution of today's combine.

other farmers about the merits of swath-threshing, as it was called.

The established farm equipment companies of the day ignored the Hovland brothers but paid close attention to the machines they created.

"The story came down that McCormick was resisting the idea, but when they saw the possibilities, they got patents that would prevent my father and brother from developing a commercial success," claims Warren Hovland, from his home in Oregon.

Hovland, a retired professor, says his father moved off the farm and spent most of his life as a telephone engineer in Chicago. Twenty years after helping develop the predecessors of the combine, he was able to see them become a reality on North American farms.

"I guess if my father had a better business sense about patents, maybe we'd be McCormicks instead of Hovlands," he jokes.

The Hovland brothers' machines sat deteriorating in a field in South Dakota until they were acquired by the Western Development Museum in 1963.

For more information about other artifacts in the Western Development Museum collection, please call the WDM Curatorial Centre at (306) 934-1400.

Stanley Jones Thresher

When Stanley-Jones threshing machines appeared in the early 1900's, some companies scoffed at what they called "little peppermills".

But it was a Saskatchewan entrepreneur named Arthur Stanley-Jones who had the last laugh. The innovative machines he helped build and sell enabled many farmers to thresh their own crops for the first time.

Stanley-Jones threshing machines were assembled until the early 1920s.

Today, Christopher Stanley-Jones says his grandfather saw the opportunity to build a machine that one person could operate.

"In those days there were threshing gangs touring the country," says Stanley-Jones from his farm in British Columbia.

"Without a one-man thresher, they were dependent on the larger gangs."

In the early 1900's, many people working homestead plots did not have enough money or labor to harvest their own crops. Every autumn, crews of young men crossed the plains, threshing from farm to farm. But the hectic schedule of the crews did not always suit the needs of farmers and as a result, some crops were harvested too early or too late. Farmers who weren't ready for threshing when the crews passed through could find themselves waiting until the following spring



Stanley-Jones threshing machines first appeared in the early 1900's.

to take their crops off.

Arthur Stanley-Jones farmed only a few years before launching into business. He plowed the land on his homestead near Jackfish Lake, Sask., in 1911. Three years later, he moved to North Battleford and sold Call of the West threshing machines manufactured by the Desjardins company. The Quebec-based firm was Canada's largest manufacturer of small threshing machines at the time. Call of the West machines were powered by a single-cylinder, 9 hp engine and could thresh about 700 bu. of wheat a day. Priced between \$400 and \$900, they were within reach for many farmers.

Arthur Stanley-Jones observed that the threshing machines he sold were not as efficient as they could be. Unlike the larger machines used by threshing crews, Call of the West threshers lacked a device to stack

Roto Thresh Combine

From the outside, Western Roto Thresh combines looked a little unusual. But it was inside the Saskatchewan-made machines where the real agricultural revolution took place.

Despite the optimism of those who were involved in the Roto Thresh combine project of the 1970's, only about 50 of the machines were ever built in Saskatoon. Although the machine never achieved the commercial success envisioned by its designers, the box-shaped combine with the unusual rotating drum retains a small but loyal group of supporters who say it was a pioneer in late 20th century farm technology.

Barney Habicht was the president of a Saskatoon paving equipment company in 1968 when he heard of two farmers in Winnipeg who had created a gas-powered rotating drum that was able to separate grain from straw rapidly with few kernels lost. The inventors were not the first to experiment with centrifugal force to separate grain, but their machine was a departure from conventional thinking about combines. Though the harvesting of grain with hand tools had disappeared from North American farms in the 19th century, motorized equipment like combines was still designed to imitate the actions of a human arm separating and winnowing grain.

Habicht was approached with the idea of building a combine that would use the rotating drum designed by the Winnipeg farmers. He also learned that researchers at the University of Saskatchewan wanted to study the invention. After talking to his company's directors, Habicht met with university researchers led by Professor Oliver Symes, the head of the agricultural engineering department at the time.

"It was decided that we would do a joint research project," says Habicht, 83. "We would do the mechanical work and they would supply the testing equipment."

The team built four combine prototypes that all used the rotary threshing drum.

"Everything ahead of the drum was a conventional machine, but once it went through the cylinder then the conventional (design) was into a new era," Habicht says.

The combine picked up the crop in the field, and a conventional threshing cylinder began separating the kernels from the straw. But instead of the usual "straw-walker" system, crop material entered a large drum that rotated at a right angle to the combine's path. Augers moved straw out the back of the drum, while kernels continued to be cleaned in the combine. The Roto Thresh cleaning system was also unique, using a vacuum and the force of gravity to remove

straw after separating it from grain, so an extra person was needed on the operation.

Under the A. Stanley-Jones Blower Co. banner, Stanley-Jones designed a straw blower that fit the Call of the West model. The improved version was sold as the A. Stanley-Jones Combination Individual Thresher in Western Canada, with distribution headquarters in North Battleford.

The outbreak of war in 1914 caused severe labor shortages on the Prairies and pushed up the demand for one-person threshers.

In the 1920's, Stanley-Jones retired to Long Beach, California. The Western



Only about 50 Roto Thresh combines were ever built.

Development Museum has several examples of his threshing machines in its collection.

Production began on commercial Roto Thresh combines in the early 1970s. David Hildebrandt of Saskatoon was one of the engineers hired to work on the machine. He says the staff was very hopeful that the combine would succeed.

"The employees were super excited about it," Hildebrandt says. "And so were the farmers," he adds.

Merv Lloyd, who farms at D'Arcy, Sask., 150 km southwest of Saskatoon, bought the 14th Western Roto Thresh combine for about \$30,000 in 1975. He says he decided to buy the combine after seeing it tested.

"I figured there should be a better way to separate grain than what had been done for over a century with the straw walker machine," he says.

Lloyd did not receive his combine for over a year after he ordered it because changes to the machine were being made up to the last minute.

"I can remember the paint still being sticky and wet when they got it to me," he says.

Lloyd's combine worked so well that he bought a second one a few years later. The Roto Thresh project did not have the same success. The small company could not compete with the huge manufacturers selling conventional machines. Many farmers weren't willing to take a chance on the Roto Thresh.

"I think the problem was that they put a few out before they got all the bugs out and the stories about the bugs got exaggerated," Lloyd says. He continued to use his first Roto Thresh until 1996. Last year, Lloyd donated the machine to the Western Development Museum. It is presently on display in North Battleford, Sask., along with the first prototype.

By 1979, the combine plant had been converted to a heavy-duty construction factory and the remaining units were sold. The patents for the cleaning system and drum were not retained.

Development Museum has several examples of his threshing machines in its collection.

Arthur Stanley-Jones' contribution to Canadian agriculture is remembered by his grandson whenever he visits the Prairies and spots the lights of combines working independently in the fields.

"I think it was a very valuable contribution because it enabled further independence of farmers," Stanley-Jones says. "I think it really helped the small operators."