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The Grosshart/Prewitt Post Hole Digger

by Stanton Gragg

Frank Grosshart on his farm near Trading Post, Kansas, demonstrating his post hole digger.
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Introduction

Today, the internet brings people together that in time past, would never have known one another. For instance, because I belong to a Farmall Cub internet forum, I have a friend in Longmont, Colorado. He purchased a used post hole digger from a man in Nebraska. He also saw a 1956 sales brochure of his Prewitt Post Hole Digger on a website from a company in Florida. And since he used the internet to find a company in Lee's Summit, Missouri named Prewitt Machinery, he asked me to investigate the company's history since I live close. Confused? Well, maybe this will help.

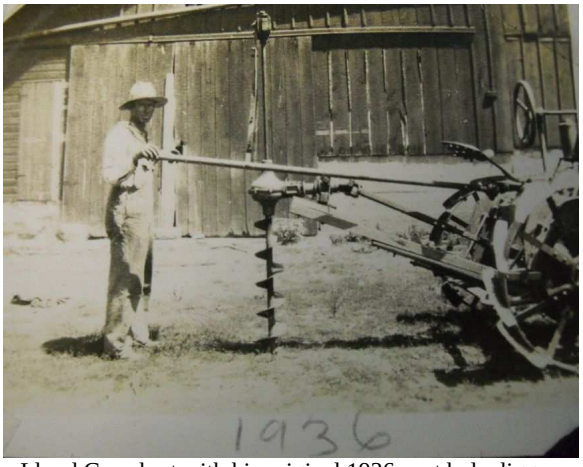
Reluctant at first, my interest soon was piqued about this post hole digger and the man from Kansas that invented it. Even though my research began with Ron Prewitt, the story really begins with Lloyd Grosshart.

The Grosshart Roots

Lloyd Grosshart was born in 1902, near Creighton, Missouri. He grew up in that vicinity, married and by 1942 had moved to a farm near the community of Trading Post, Kansas, where his son, Frank was born. Frank told me that his dad was a farmer, innovator and a devout International Harvester man. His dad was always looking for ways to increase productivity and efficiency around the farm.

Around 1936, using spare parts from a salvage yard, Lloyd converted the rear axle of a Ford Model T and parts from a threshing machine to build his first digger. Since it could not reverse, handles were installed to manually lift the auger from the hole. Frank said it shook something awful. So, over the next several years, Lloyd

refined his design, using an automobile ring gear and pinion as the digger's gearbox, but direct-mounting it to the drawbar of his Farmall tractor.



Lloyd Grosshart with his original 1936 post hole digger.
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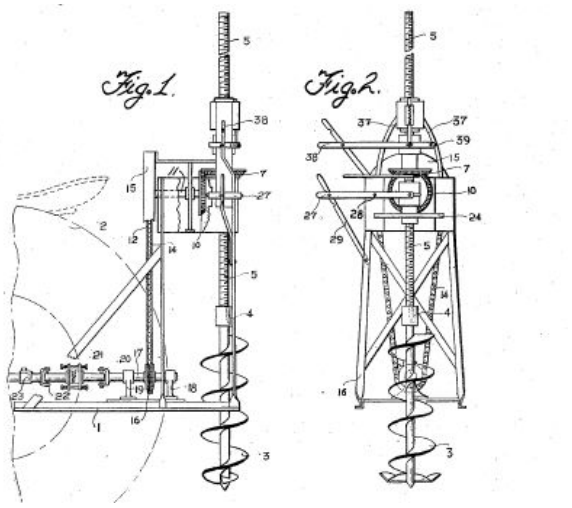
On April 26, 1946, Grosshart submitted his plans for patent. A few years later, the U.S. Patent Office approved Grosshart's design on January 11, 1949.[1]

Upon receiving his patent, which was valid for 17 years, Grosshart began manufacturing his digger from his cousin's machine shop in Creighton, Missouri in 1950. Soon, he outgrew the space and bought a shop of his own, where he manufactured his post hole digger as well as several other farm-related implements.



Drawing from original Grosshart patent application.
U.S. Patent Office, Public Domain.

The Prewitt Connection

J. R. Prewitt and Sons, Inc. was founded in the mid-1920's by Ron's grandfather, J. R. Prewitt, in Pleasant Hill, Missouri, located about forty miles southeast of Kansas City. They built the Belsaw woodworking product line for over fifty years. Records show that in 1948, they employed 73 skilled workers in addition to office staff and management positions. J. R. and his wife had seven sons and seven daughters. J. R. taught his sons the machinist trade and all were active in the family business.

The youngest son, Ralph, married and taught the trade to his son, Ron. After J. R's death in 1951, Ralph soon became CEO and General Manager and continued in that position until 1972, when the business was sold to R. B. Industries. It was at that time the popular Belsaw Planer became known as the RBI Planer.

Ralph Prewitt began the current company in the mid-1970's and ran it until 1982. At that time, Ron and his wife were offered full management of the company and continue to operate it today.

Grosshart/Prewitt Venture

"Grosshart got some good publicity for his post hole digger by demonstrating it at National plowing contests."[2] Sometime during 1950, J. R. Prewitt went to see Grosshart's digger and asked him to consider Prewitt to manufacture it. Prewitt already had a good reputation in the area, so Grosshart agreed. Prewitt would manufacture, market, and sell the digger, while Grosshart would receive a royalty check for each unit sold. From that time on, manufacturing was performed in Pleasant Hill, Missouri. Lloyd Grosshart sold the machine shop and returned to his Kansas farm.

A couple changes were made over the years. First, the patented Grosshart digger was redesigned by Prewitt to include all of the ring gear and pinion inside a sheet metal housing, so there were no moving gears exposed. Secondly, sometime before August 1955, a printing mistake on some brochures replaced the name *Grosshart* with *Prewitt*. The change was not legally challenged by Grosshart but from that

time forward, the digger was labeled as the *Prewitt Post Hole Digger*. Therefore, some nameplates today still sport the name *Grosshart* Post Hole Digger, while others read *Prewitt* Post Hole Digger.

Nameplates bearing both names, patent and serial numbers. *© 2011, S. Gragg and J. Freeland, Parkton, MD, Used by permission.*

Once Prewitt began production, except for the auger tip, the digger was entirely built in Pleasant Hill, Missouri. Ron Prewitt said that many manufacturing companies today focus on assembly, with production of parts being done off site by other companies. "We had a foundry where we made our own cast iron," Ron said. Every phase of production was handled in their plant; casting, machine work, and assembly.

The only part manufactured offsite was the steel auger tips. They were produced by The Gold Foundry and Machine Works, a manufacturing company in Independence, Missouri, that has since closed its doors.

Post Hole Digger Features and Application

According to an interview with the Trading Post Museum, when asked "how he got the idea to invent a post hole digger," his response was, "Why, by digging post holes, that's how." [3] "Grosshart had decided there must be a better way to dig post holes than by hand." [4] Indeed, necessity is the mother of invention.

The concept was straightforward, but thoughtful: a vertical acme screw intersecting a ring gear and pinion drive box, controlled by dual clutches and brake. The digger's muscle came from the tractor's power take-off (PTO).

The digger was advertised as "A *quality-built, heavy-duty digger* for drilling fence lines, setting telephone and power poles, and for planting shrubs, saplings, etc."[5] Early models mounted to a tractor's drawbar or by brackets. Later models provided a Fast-Hitch option for many IH tractors. Prewitt made kits available to accommodate almost every model Farmall made.

Prewitt Digger mounted via brackets on a Farmall Cub. *©2011, S. Butram, West Lafayette, IN. Used by permission.*

Each buyer had the choice of a 6", 9", 10" or 12" diameter auger with replaceable steel points. The regular feed screws permitted holes up to 4 feet deep, but for holes requiring extra depth, there was an auxiliary feed screw which allowed up to 5 foot depth. The rate of speed was also impressive; Prewitt advertised "3-foot holes as fast as one per minute."[6]

Frank Grosshart told me that his dad even mounted a tractor with the digger on the rear end of a flatbed truck and used it to drill water wells by attaching additional sections of shaft to reach the desired depth.

Gear reducer/reverser and chain drive on a Farmall Cub.
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The PTO was coupled to a chain-driven sprocket mounted to the digger's frame. A slip clutch was furnished for safety instead of a shear pin. Since the Cub and Cub Lo-Boy have PTO's that rotate opposite of other Farmall models, a reducer/reverser was available at an extra cost.

One advantage of the digger over other manufacturers was that the shaft could be disengaged while the auger was in the hole, then raised without turning the auger. This would bring all the dirt to the top, leaving a clean hole. The digger could also be rotated up to 30º from side to side, to accommodate vertical drilling on slopes.

One potential problem, Ron Prewitt remembered, was that when the threaded shaft was fully raised, the top of the shaft would be nearly twelve feet high. This was a problem when the tractor was on the move. Often, farmers would catch the digger's acme screw on a low hanging branch or the top of the barn door, causing it to bend. Ron said they contracted with a company in Texas to straighten bent shafts and more than a few were sent there, but some farmers, like Lloyd himself, just turned the bent screw 180º and gently bent it back straight.

One Cub owner told me that the auger will lift the tractor off the ground if it encounters a rock or obstruction. Even though the weight of the unit is approximately 480 pounds, others have told me that even larger tractors, such as a Farmall H or M encounter the same problem. But aside from this, the success of the digger was apparent and performed as it was designed and intended.

Ron recalled that the Missouri State Fair, held annually in Sedalia, would have numerous manufacturers demonstrate their products. Prewitt & Sons would set up the Grosshart digger alongside other manufacturer's diggers and out-perform them, even in the hard, dry August ground. "While others sat there and spun," Ron recalled, the Grosshart digger "would keep digging down in the ground."

Leaving behind a clean hole in hard, dry ground.
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<u>Then and Now</u>

By 1966, the patent expired and sales of the Prewitt Post Hole Digger had begun to decline. Other manufacturers were producing a smaller, lighter, 3-point post hole digger that was out-selling the Prewitt model. Because of its heavy-duty design and ability to bore vertically as well as horizontally, the digger was incorporated in a new division of boring machines designed by Jim Prewitt, Ron's uncle, and produced by Prewitt Machine called the Horizontal Earth Auger Drill (H.E.A.D.). This was marketed to construction and state agencies looking for machines to bore under roadways for utility installations.

The company today no longer makes or supplies parts for the Grosshart/Prewitt Post Hole Digger. Finding one can be difficult, depending on where you live. A Grosshart or Prewitt Post Hole Digger occasionally comes up for sale at an auction or in a classified ad. But most are hidden away in old barns, storage buildings and farm lots across the country, having bored their last hole.

Prewitt Post Hole Digger mounted on an IH Farmall Cub.
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An original sales brochure given to me dated September 1953 shows the price of a digger to range from $250 to $270, depending mounting type and accessories. The cost of a digger today will vary since the digger is no longer in production. Prices will depend on who has one for sale, how much they believe it is worth, and how much someone wants one. As always, demand sets the price.

It was good to visit with Ron Prewitt and Frank Grosshart, and I appreciate their willingness to share their story. Two families connected in the past that made an impact on many IH tractors. The Grosshart/Prewitt Post Hole Digger, like many other inventions of necessity, has made a mark on the landscape of International Harvester's rich past.

Acknowledgements
I would like to thank Frank and Mary Grosshart who opened their home and family history to me; whom without this research would be incomplete. Thanks also go to Ron Prewitt, owner of Prewitt Machinery Company, Inc., in Lee's Summit, Missouri and his sister Ramona Sherman of Pleasant Hill. Also I would like to thank Alice Widner, curator of the Trading Post Museum, Trading Post Kansas.

The original 1936 Grosshart Post Hole Digger mounted on a Farmall Regular.
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[1] United States Patent Office, patent number 2,458,991, Posthole Digger.
[2] Lloyd Grosshart: Farmer, Inventor. Article by Alice Widner, Trading Post Museum, Linn County, Kansas.
[3] Ibid.
[4] Ibid.

[5] Company brochure. Prewitt and Sons Manufacturing. Emphasis theirs.
[6] Ibid.