

Ditch Witch® DWP Service-Line Trencher

The Machine

In the late 1940s in Perry, Oklahoma, Ed Malzahn had the idea to build a compact trenching machine that could replace the pick and shovel work involved with installing residential utility services from the alley or main line to the house. By 1949, he had successfully produced the first Ditch Witch model DWP trencher.

The DWP trencher was a simple, but very unique design patented by Ed Malzahn in 1955: It put the endless conveyor digging chain design concept used on larger ditch digging machines into a small package. Small two-piece buckets with sharp finger-like edges were mounted on a vertical chain to gouge out chunks of dirt. The buckets were attached in sequence onto an endless moving chain that carried them down a ladder type mechanism to chew out chunks of soil, then upward to dump the "spoil" in neat piles on the ground as they began the downward descent to bring up more dirt. A four-inch wide trench with a digging depth of twenty-four inches was the goal.

The operator was seated on a contoured metal seat, facing simple lever controls to raise and lower the digging device. The air-cooled seven-horsepower engine supplying power for the working end also gave the trencher mobility, transferring power through a belt drive. The trencher moved on a welded frame with four small wheels and pneumatic rubber tires, like those used on lawn tractors. It also had a ratchet drive to utilize the operator's arm and shoulder muscle to move the trencher forward and backward.

The Innovation

The DWP trencher was the first compact service-line trencher ever developed and produced. Before its creation, utility service lines were dug by hand. This process was slow. Larger trenchers existed, but they were too expensive for plumbers and couldn't always fit into the areas where service lines were needed. The DWP trencher's compact size, low cost and productive trenching transformed the process of digging utility service line trenches from manual labor to an affordable, mechanized process. This made installation of running water, indoor plumbing, and other utilities affordable to the common household worldwide.

The world's first service-line trencher, the DWP, has evolved into today's technologically advanced Ditch Witch® brand of equipment designed for installation of all underground utilities including telephone, cable TV, and fiber optic communication cables. The success of the DWP trencher launched a new category of underground construction equipment and literally created an industry.

Significant Dates

- 1948 - Inspiration for the original Ditch Witch trencher occurred.
- 1949 - First production model DWP trencher was completed in Perry, Oklahoma.
- 1952 - Established first specialist dealer in Oklahoma City.
- 1953 - Marketing organization was created in Perry.
- 1958 - Incorporated as The Charles Machine Works, Inc.
- 1958 - First international dealership was opened in Australia.

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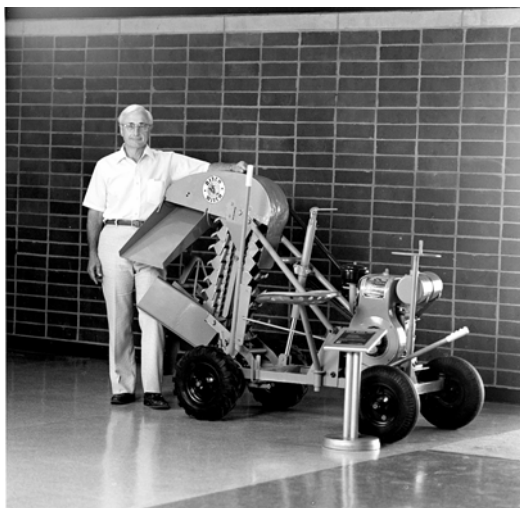
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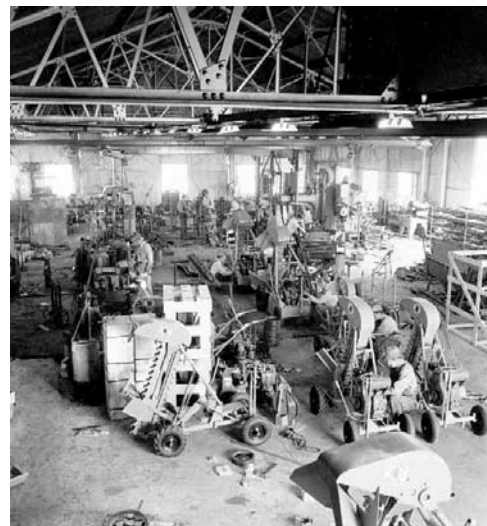
Ed Malzahn digs a 4-inch wide trench with the DWP trencher



The DWP trencher is used to prepare for the installation of a water line.



The first production model DWP trencher.



The DWP assembly line in 1950.



The ASME National Historic Mechanical Engineering Landmark



Today's Ditch Witch® Trencher.