

HISTORY OF THE WATERLOO BOY

John Froelich, born Nov. 24, 1849, in the village of Giard, Iowa, as a young man operated an elevator in Froelich, Iowa. He proved his inventive ability by making a washing machine and a corn picker. In 1888, he expanded his business by buying a strawburning steam traction engine and threshing machine which he rented to farmers in Iowa and South Dakota for threshing their grain. He also bought a $4\frac{1}{2}$ H.P. Charter horizontal stationary gasoline engine which he mounted for transporting and used on a portable well-drilling outfit.

From his experience with these two outfits, Mr. Froelich conceived the idea of using a gasoline engine in place of the steam engine to reduce the bulk and weight of the machine, to reduce the hazard of fire and to make a machine capable of traveling both forward and in reverse. His purpose was to provide a machine practical for use on medium size as well as large farms.

In 1892, John purchased a large vertical one-cylinder gasoline engine with 14-inch bore and 14-inch stroke. He substituted this engine for the steam engine, using the running gear, shafts, gears and pulleys from the traction engine wherever possible. Many parts were redesigned and cast by Mr. Froelich and his helper, William Man.

First Successful Gasoline Tractor

The machine was finally assembled in the summer of 1892 and as it stood in John Froelich's blacksmith shop, it was such a grotesque, cumbersome contraption, most people who saw it doubted it would run. The day came for its trial run and after a final check, the machine was pushed out in front of the shop. Mr. Froelich turned the flywheel over, but the engine failed to start. As Mr. Man related, a cartridge with the lead removed was placed in the priming cup and he struck it with a hammer. The powder exploded and with a clatter the flywheel began to revolve. The inventor mounted the platform of the machine and put it in gear: the tractor moved forward. Someone asked if it would "back up". Mr. Froelich shifted a lever and the tractor reversed its direction.

By common consent, the term tractor has succeeded the name traction engine, to apply to all road engines not confined to a track or rails. So, on that summer day in 1892, the first self-propelled gasoline tractor chugged along the road at a pace of two miles an hour. Mr. Froelich drove the machine to a farm where a neighbor was threshing. The gasoline tractor was substituted for the steam threshing machine and it did the job.

Waterloo Gasoline Traction Engine Co. Formed

As a result of further demonstrations, a company headed by Mr. Froelich was organized to manufacture tractors. It was called the Waterloo Gasoline Traction Engine Co. A frame building was erected at Waterloo, Iowa. However, early

efforts to build a practical tractor failed and the company turned to the manufacture of stationary gasoline engines. This, too, proved unsuccessful and the company was reorganized Nov. 18, 1895, as the Waterloo Gasoline Engine Company.

Many reverses were experienced, but the company continued to design and build gasoline engines, one of which, built in 1905, was called the Waterloo Boy. In order to fill the demand for this engine, the plant was expanded.

Model L-A Marks Tractor Progress

Not until September 1911, was there further effort toward the manufacture of tractors. A two-cycle, two-cylinder engine tractor and a four-cycle, four-cylinder engine tractor were built but neither was successful. In 1912, the company designed and built a tractor with a two-cylinder opposed engine, mounted on a four-wheel chassis and called the model L-A. About 20 of these tractors were sold, marking the first real progress of the company in the development of tractors.

Early in 1914, a two-cylinder motor was built on a four-wheel chassis as a two-plow tractor. It was called the model "R", a single-speed tractor with 5½-inch bore and 7-inch stroke, with the cylinders and head cast in one piece. Valves were put in with cages in the ends of the cylinders. In March, 1915, the cylinders were enlarged to six inches, after 118 machines had been sold and many complaints had been received regarding overheated valves. In September, there were additional changes to the cylinder head.

Deere and Co. Buys Tractor Factory

With the opening of World War I, farm prices began to climb and small farmers everywhere wanted tractors. To meet this demand, 130 makers entered the tractor manufacturing field. In the meantime, Deere and Co. watched the development of farm power at the Waterloo Gasoline Engine Co., where a two-speed tractor with enclosed transmission called Model "N" was built by the Waterloo Co. in 1916. Of the former Model "R", single-speed tractor, 8,076 units had been built by the end of 1918. Both models, "R" and "N", were called "Waterloo Boy."

Deere and Co. bought the Waterloo Co. in 1918 and continued tractor construction under this company's own name. By 1921, the two-speed, two-cylinder, valve-in-head Waterloo Boy was well improved and had earned the reputation of being one of the top-notch tractors for farm use, capable of drawing a three-bottom plow.

This tractor was of 12 H.P. on the drawbar, and 25 H.P. on the belt, having a $6\frac{1}{2}$ -inch bore and 7-inch stroke, the cylinders being horizontal. The machine had a force feed positive spray oiling system, while cooling was controlled by a large centrifugal pump with a powerful fan driven by belt from the fly-wheel. The fuel tank was raised several inches to give added fall to the kerosene from the fuel tank to the carburetor, insuring a steady flow of fuel. A band clutch was operated by hand, and the transmission was of auto-type sliding gears with shifts for two speeds forward and one reverse. The drive gear was on the rim of the wheel.

Among other added features, counterweights were changed from the inside to the outside to permit better accessibility to the crankcase. The belt pulley, which was operated by direct power from the crankshaft, was made with detachable rim in order that the pulley could be removed in the field to eliminate packing of clods between the pulley and the lugs of the wheels. The axle was designed so that the front wheel could follow the furrow wall when plowing to eliminate the need of an extra steering device.

The tractor could be operated at three miles per hour in high gear and $2\frac{1}{4}$ mph in low. As for general appearance of the machine, the fuel tank was on the front of the frame, with the radiator located crosswise between it and the motor.

First Tractor With John Deere Name

It was not until 1923 that the John Deere Company put its name on a tractor, which was produced for sale the following year. This was the Model "D", a tractor built for power capable of handling the many farm jobs of that time.