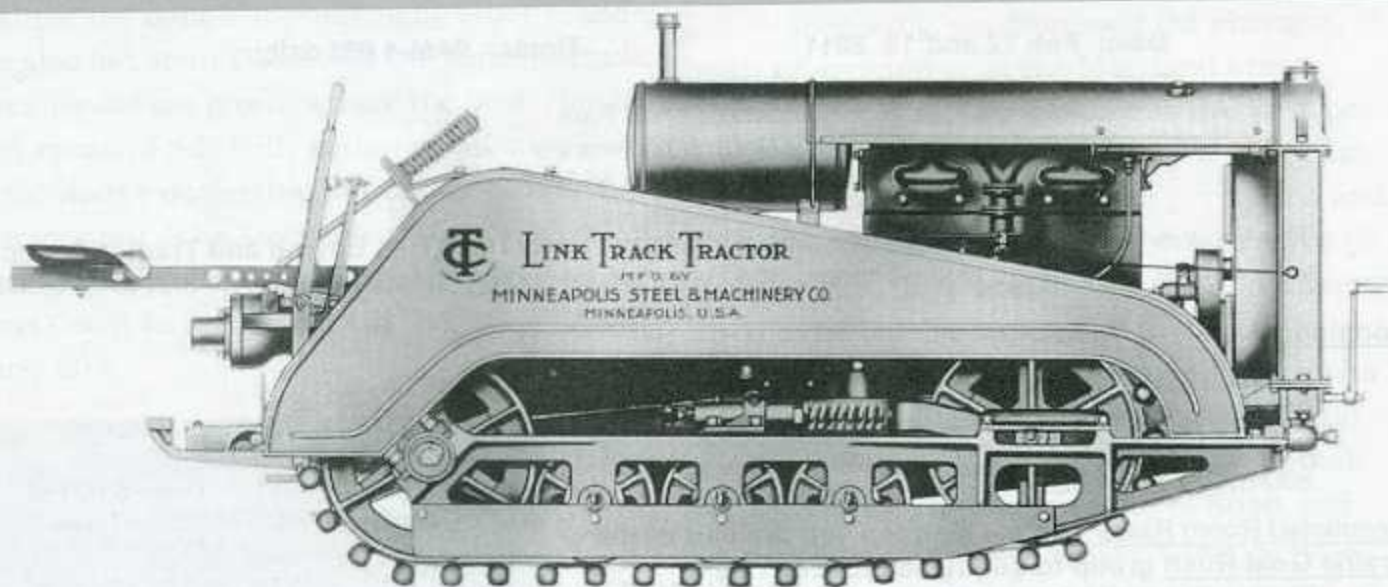


# The Missing Link

By Tony Thompson



Drawings of a crawler tractor based on Twin City 12-20 tractor components have been known to exist for many decades. The popular black and white Twin City Photo Archive book, released in 1993 and edited by Peter Letourneau, contained these drawings of a small track equipped Twin City 12-20 labeled *Link Track Tractor*.

Since so many years have passed without any information to confirm production of the 12-20 Link Tractor, it became general belief that although drawings were made, this concept machine had likely never reached production. Surviving text and photographs recently discovered, in two different states, gives confirmation that the Link

Tractor did exist! At least two of them were built and several photographs taken between 1918 and 1921 show the Twin City 12-20 crawler standing and at work!

The idea for this baby Twin City crawler originated with a man named Charles Fuller who worked for Buckeye Manufacturing Company located in Anderson, Indiana. Buckeye was building wheel tractors and half tracks from 1911 to 1915 and produced a 9,500 lb. Waukeshaw powered crawler in 1916 called the Trundaar. With a power rating of 20-35, the large 4-cylinder crawler employed a rather unique pivoting front axle that could afford greater tractive engagement with rough or uneven terrain.

Mr. Fuller was one of the Trundaar engineers and expressed an interest in producing a smaller unit, but the Trundaar engineering staff was uncooperative in this idea. Charles ventured west where he attended one of the state tractor demonstrations in the Los Angeles area in 1917.

It was here that he met Henry Cousins of Cousins Tractor Company in Hanford, California. Mr. Cousins liked the idea of a small crawler to suit the needs of California orchard and vineyard growers. He brought Mr. Fuller to Hanford to help draw up plans for the proposed tractor. Fuller and Cousins designed a track carriage that used a pivoting front axle similar to the Trundaar that Fuller had been in-



involved with during his previous employment with Buckeye Manufacturing.

The pivoting front axle would allow the front sections of tracks limited vertical movement in opposite directions.

For the track, large steel pins were used with corresponding link sections. These formed a continuous steel circular traveling link belt when all the short traction segments were pinned or linked together. One could assume that choices in track design were



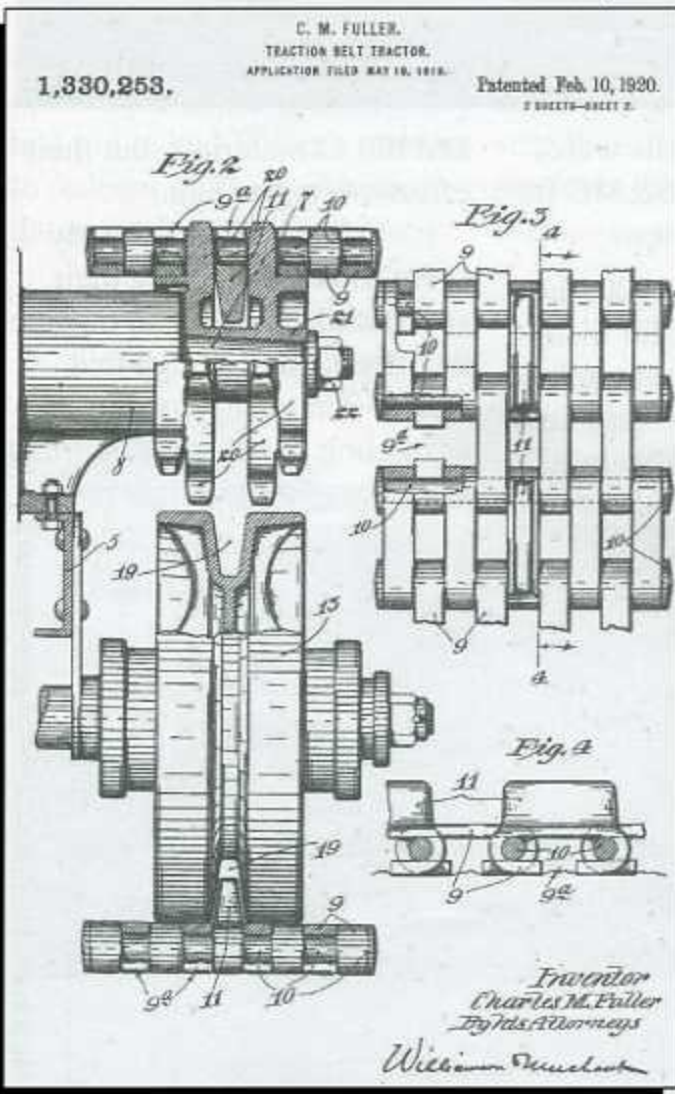
somewhat limited because corresponding "Caterpillar" or "tracklayer" companies held patents to the most practical track technology at the time.

After consulting several manufacturers with plans for the proposed crawler, it was discovered that Minneapolis Steel and Machinery Company in Minneapolis, Minnesota had something truly remarkable to offer early in the year of 1918. At a time when nearly all manufacturers produced tractors with open gears

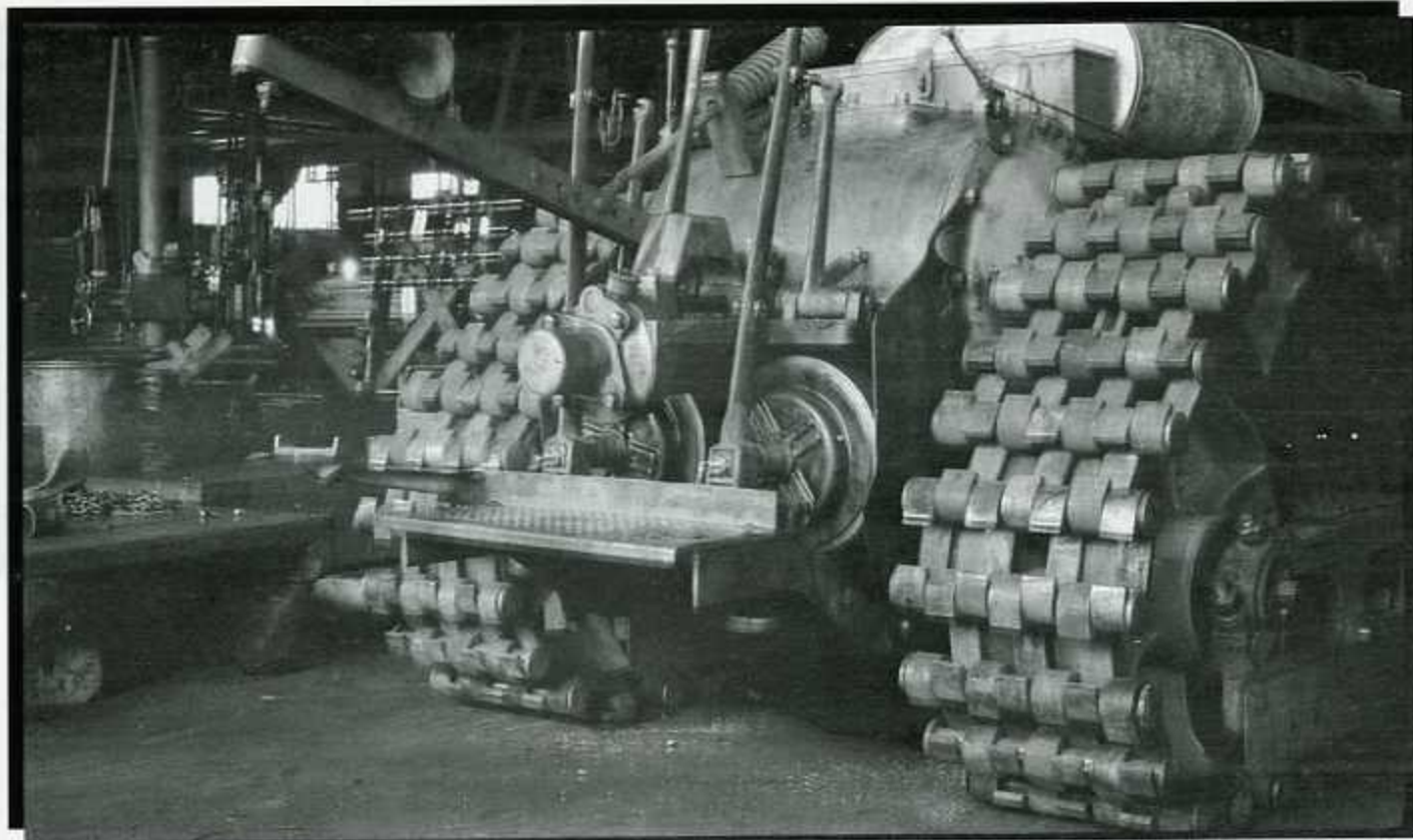
mounted on channel frames, MS&MC was unveiling the 12-20 Twin City. This 5,000 lb., 340 ci, twin cam, 16 valve, in-line engine, unit frame tractor had a fully enclosed transmission and final drive running in oil.

MS&MC had established a reliable reputation with their impressive heavy-weight tractor line-up since 1910. Now they had the perfect "baby" Twin City tractor available to help execute the crawler plans.

Cousins and Fuller ventured east to present their idea to MS&MC. Fuller remained in Minneapolis to work in the Twin City engineering department with lead engineer, Albert Scarratt and Norman Ness as an assistant. The first two crawlers were completed by year end of 1918, using many of the 12-20 wheel tractor components that were already







in production. Cousins and his manager, Mr. E. R. Nash traveled to Minnesota State Fairgrounds to witness demonstrations of the completed Link Tractors. After a successful showing, both machines were shipped to California to spend the 1919 growing season under actual working conditions. Track patent number 1330253 was filed on May 10<sup>th</sup> 1919.

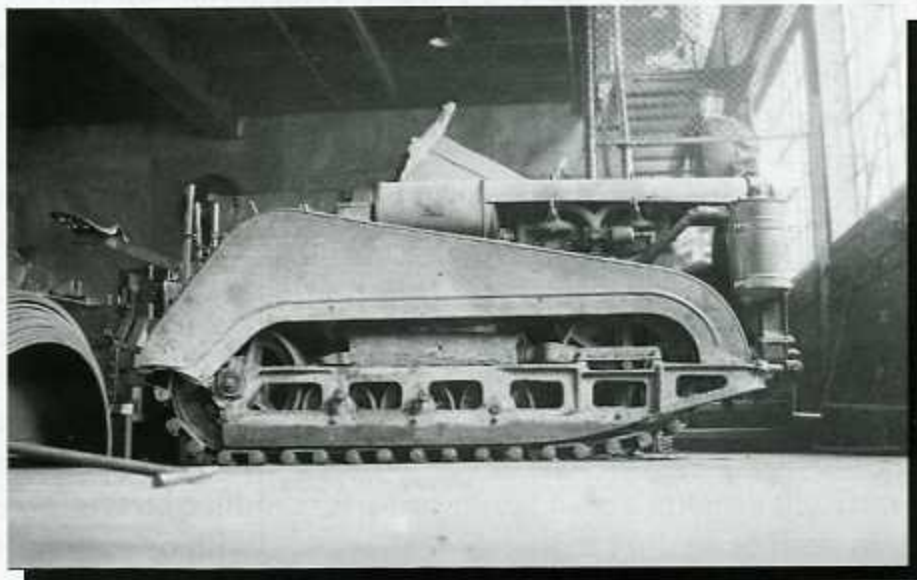
The crawlers performed well. An adjustable spring loaded seat offered extra comfort for the operator and very little effort was required for steering. The first season did not end well, however, as the Fuller and Cousins design suffered from rapid

track wear. The units were shipped back to MS&MC for an engineering review.

In February 1920, the patent was issued for manufacture of the revised track design and Fuller and Nash had completed all the drawings

and bill of materials, but their efforts were too late.

MS&MC had already spent thousands fitting their successful 12-20 on an outside engineers track design that failed. The company was struggling to continue building their heavyweight line, mass





produce the 12-20, and introduce the new 20-35, all at the bottom of a post World War I depression. MS&MC's financial backers would not allow more expenditures on an experimental tractor during this trying economical time. Cousins Tractor Company from Hanford California was not in a position to provide continued financial support for the crawler program, so any form of regular production for the revised Link Tractor would be terminated.

I find it very entertaining to consider what amount of production may have developed if the depressed economy had not halted Fuller's attempt to redeem himself with an updated track design that likely

would have made the predestined Link Tractor a success.

The Twin City 12-20 wheel tractors enjoyed a tremendous long lasting production run. Minneapolis Steel & Machinery Company did not offer low cost alternative tractors for the small farmer or general public. These well engineered machines were intended to provide many years of heavy daily service from educated operators that were encouraged by a company with efficient dealer and distributor organization. World wide distribution efforts were followed by an earnest service department, employed to ensure the success of quality products that were "*Built to do the work - not to meet a*

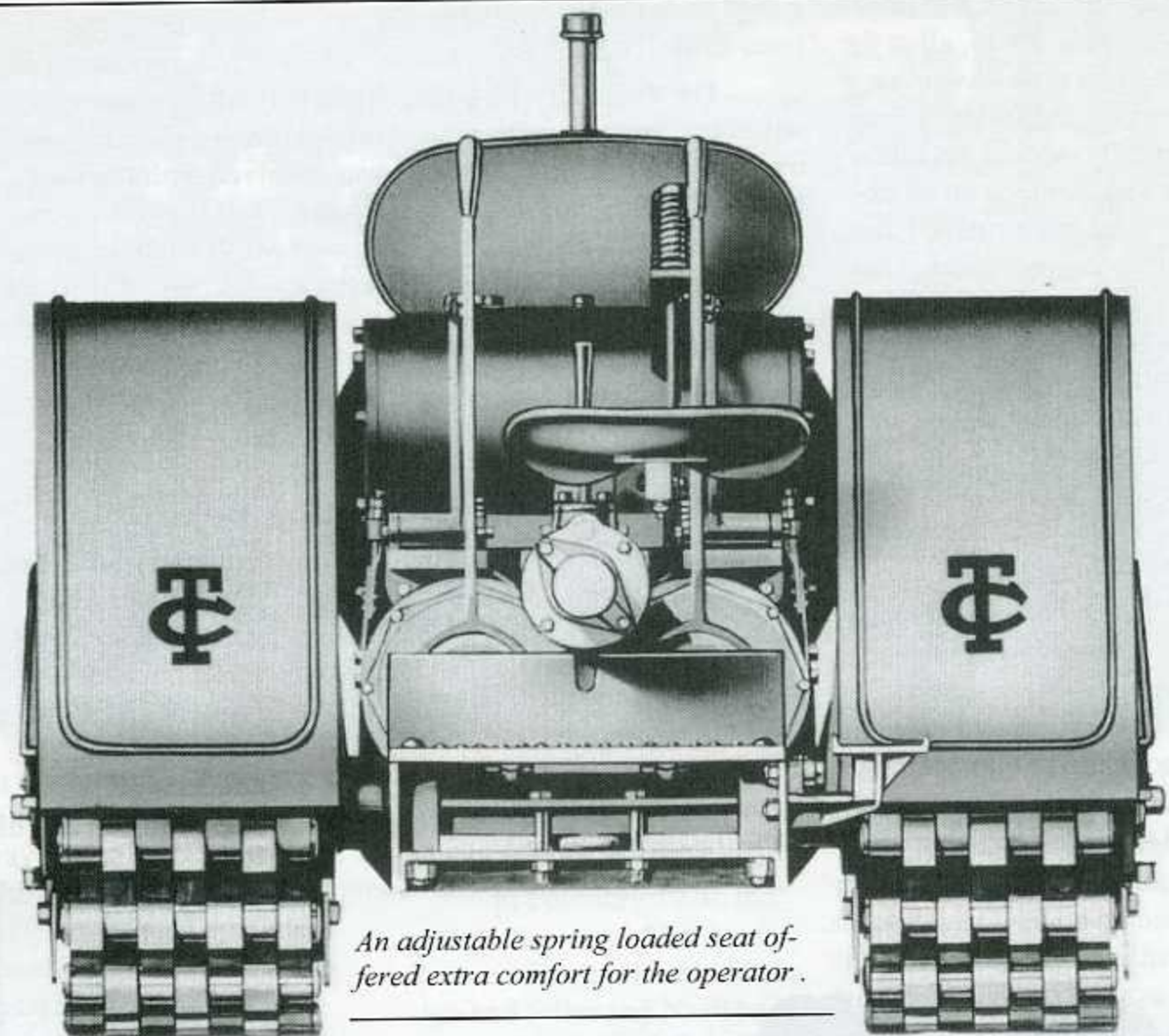
*price*".

It is fortunate for Twin City history that agricultural journalist Hal Higgins was involved with the Link Tractor. Mr. Higgins interviewed Mr. Nash to record a historical account of the Link Tractor that appeared along with two photographs in *Engines and Engineers Magazine* dated June 1961.

For me, good fortune came in the form of a phone call from tractor and steam enthusiast Steve Green from Oregon, Illinois. Steve spotted the Link Tractor in a stack of vintage *Engines and Engineers* magazines that he took home to save them from being thrown away during an end of







*An adjustable spring loaded seat offered extra comfort for the operator.*

auction clean up.

So, were there more than two of these mysterious little track tractors made? There were quite a few pictures taken of this machine, some in Minnesota and some in California, between the end of 1918 to spring of 1921. Are the Link Tractor photographs taken in later years different machines, or just later pictures of the first two experimental

units? Being a bit of a Twin City historian, I have sifted through stacks of mailed out and inter-office correspondence from Minneapolis Steel & Machinery Company and post merger Minneapolis Moline Power Implement Company over the years. One such letter of a 1950's vintage has an MM employee claiming that "In the early 20's, we built Ten 12-20 crawlers with

endless rubber tracks." Did this actually happen? I cannot find a patent for rubber tracks, and so far, no period-correct pictures have turned up displaying any type of crawler with flexible or elastic appearing tracks.

There are many questions about the "Missing Link" that remain un-answered, however, a great deal of information has surfaced since the

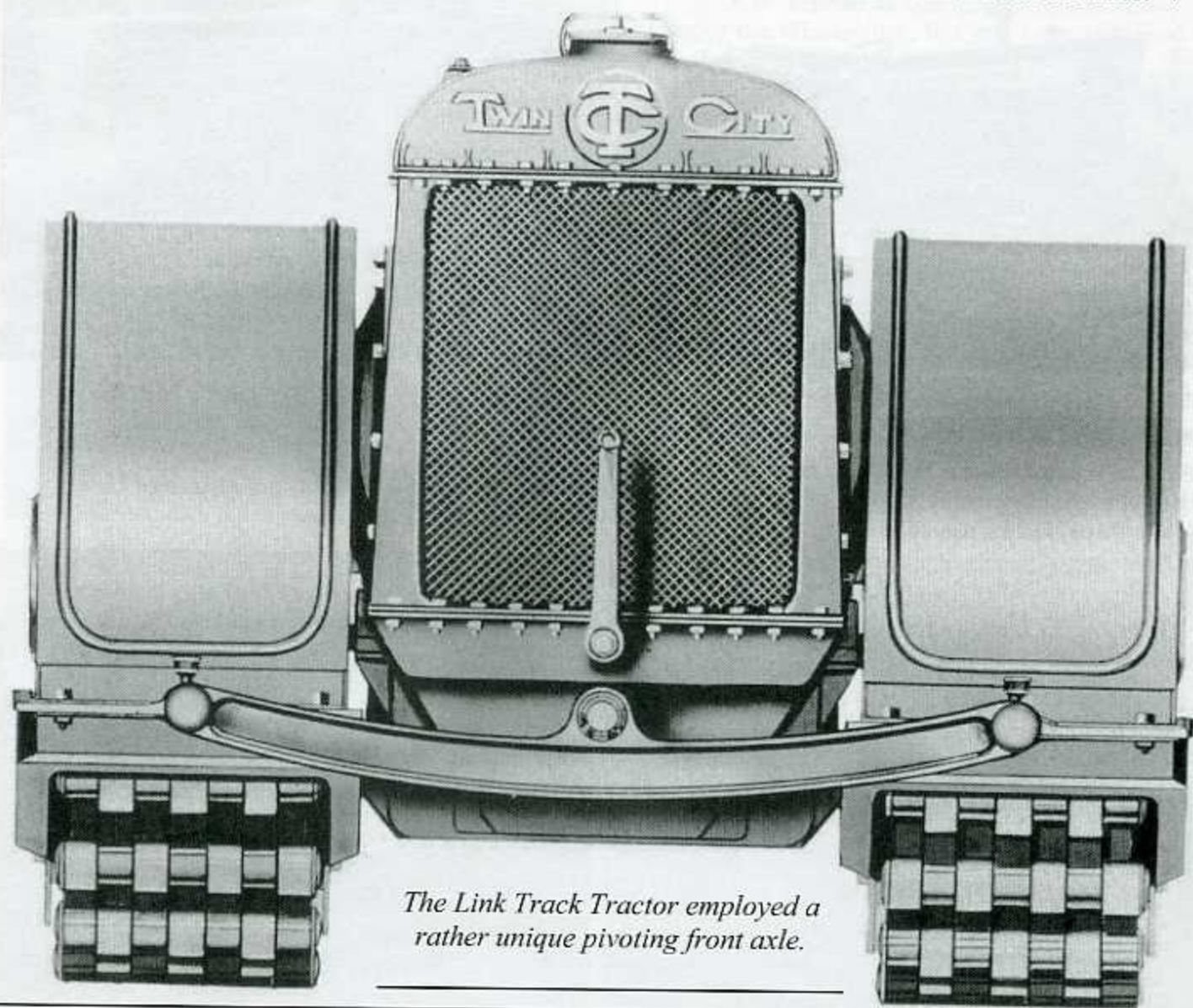


Link Tractor was identified little more than one year ago. I believe more photographs and supporting text will turn up in time. One confusing detail for the researching public is how Mr. Nash frequently refers to the Link Tractor as the Cousins tractor. He even labeled some of the photographs as the Cousins tractor. This preference of title surely developed from his manager position at the Cousins Tractor Company. Hal Higgins did

clarify in his 1961 interview with Nash that Minneapolis Steel & Machinery Company produced the Twin City Link Tractor. Apparently Henry Cousins contributed a sizable sum of money to this program.

This raises another question, was Mr. Cousins trying to beat other manufacturers to the small crawler market? Henry Cousins did become a Caterpillar dealer, however, the merger that

joined heavyweight crawler builders Holt and Best, creating the famous Caterpillar Tractor Company did not happen until 1925. Fuller encouraged Cousins to support his idea and together they prompted MS&MC to build the diminutive crawler for them in 1918. To have a viable crawler weighing near 5,000 lb for orchard and vineyard use on the market prior to 1920 would certainly have been a boisterous success. ♦



*The Link Track Tractor employed a rather unique pivoting front axle.*