THE KELLY EMPIRE: THE HISTORY OF ONE OF THE TRUE GIANTS OF THE COMPACTION INDUSTRY



Oliver Smith Kelly was one of America's great nineteenth-century industrialists.

Part 1

In mid-nineteenth-century America, many a young man sought to make his fortune in the development of America's mineral and oil resources. Like many other men of his generation, Oliver Smith Kelly left behind his carpenter's job in Springfield, Ohio, and traveled to California, where he participated in that state's famous gold rush. He devoted most of 1852 through 1856 mining "placers," or gravel deposits containing particles of ore. Kelly was successful in his quest for gold, and, when Kelly returned to Springfield, he was wealthy. He had sufficient capital to establish a series of industries. The Kelly name came to be associated with threshers, steam engines, road rollers, pianos, trucks, and tires.

Kelly was born in 1824. His grandfather, James Kelly, was an Irish immigrant who served under General George Washington. In 1808, James and his dozen children arrived in Springfield. Ohio. S. Kelly's father, John, was born in 1789. He fought in the War of 1812 then By: Raymond L. Drake and Robert T. Rhode

returned to the family farm in Ohio. When O. S. Kelly was one year old, his father died.

Kelly's earliest recollections included the family's log dwelling four miles south of town. Grandfather James lived a half mile to the north, and most of John's siblings lived in the vicinity. By 1830, Springfield had fewer than five hundred inhabitants but boasted two woolen mills, a flour mill established by Simon Kenton, a market house, and a distillery. When he was ten years old, O. S. Kelly and his extended family moved into the Adam Baker mill in the Mad River Valley.

Early nineteenth-century Springfield was an exciting place to be. Kelly took full advantage of the bustling community, located on the new national road. During the election of 1840, the parade for General William Henry Harrison, nicknamed "Old Tippecanoe," came from Columbus along the highway. Units in the parade portrayed Harrison as a pioneer. For the rest of his life, Kelly recalled the wagons that carried log cabins with raccoons tied to them.

At age fourteen, Kelly sought a livelihood in Springfield. Having apprenticed as a carpenter, Kelly helped to build a water wheel for James Leffel, best known as a manufacturer of turbines but also as a builder of steam engines.

When Kelly returned from California with thousands of dollars in gold, he bought a wholesale grocery business. He quickly withdrew from the grocery and went to work for William Whitely and Jerome Fassler, manufacturers of mowers and reapers. The company name soon changed to Whitely, Fassler & Kelly. A full-color poster that advertised this business hangs in the museum of the Clark County [Ohio] Historical Society. Kelly remained with the company until 1881.



As with virtually all builders of American steamrollers, Kelly's roots go back into the history of agriculture. In this photograph can be seen the Springfield design of portable farm engine, introduced in 1882. Such images are fairly rare. Photo courtesy of the Wisconsin Historical Society, Image 41752

Prior to 1882, Kelly began serving as president of the Rinehart, Ballard & Company Threshing Machine Works, which sold threshing machines under license to John Pitts, one of the famous Pitts twins from Buffalo. In 1882, Oliver S. Kelly and son Oliver Warren Kelly reorganized Rinehart and Ballard as the Springfield Engine and Thresher Company. Kelly permitted hay rake manufacturer J. H. Thomas & Sons of Springfield to put a Thomas nameplate on the Springfield steamers that Thomas sold. In 1889 or 1890, the Springfield firm was renamed the O. S. Kelly Company.

Kelly was fascinated with British steam engines. Recent articles in Engineers and Engines Magazine have introduced readers to Virginia D'Antonio and Tom Wright, who have discovered that their ancestor Edward T. Wright served his apprenticeship with the well-known British firm of Aveling & Porter, which produced steamrollers. Wright then immigrated to Harrisburg, Pennsylvania to begin working as a draftsman for the Harrisburg Car Company. Between 1890 and 1891, the Edward T. Wright's family relocated in Springfield. Wright began to replace the Springfield engines with a new model of Kelly steam engine closely resembling British steamers. A large



Here is a diaphragm gauge that was used on early engines of the O. S. Kelly Company. This gauge was manufactured by Schaeffer & Budenberg, a German firm that pioneered in the development of steam gauges. Schaeffer & Budenberg produced gauges beginning in the early 1850s.

steam-jacketed valve chest was positioned above the cylinder, the shafts passed through thick hornplates, and a manstand with a box that could be entered from the engine's left side were among the British innovations to appear in Kelly manufacturing, thanks to the Wright influence. The company even dabbled in cable plowing, which was a British method of equipping one or two steam engines with a winding drum that could retract a cable to pull a plow across a field, but the relatively large fields in the United States caused cable plowing to be impractical.

Foreseeing the importance of having a branch house to take advantage of the new farms being opened in the west, Kelly established a plant in Iowa City. This factory built threshing machines and feed mills. Later, it added gasoline engines to its product line. The words "O. S. Kelly Mfg. Co., Iowa City, Iowa," were cast into smokebox doors of steam engines sold from the Iowa City office.

Kelly named James H. Maggard general manager of the western branch. Steam aficionados appreciate Maggard's popular book entitled *Rough and Tumble Engineering*, later renamed *The Traction Engine: Its Use and Abuse*. The volume underwent numerous editions and is still available in paperback. Maggard constantly revised the text; for example, he deleted a section advising that a hatful of potatoes be dumped in a boiler to prevent scale. The last editions of his book contained sections on gasoline tractors. Gifted with a quirky wit, Maggard charmed readers into learning how to run steam engines safely.

Maggard also wrote promotional literature. *The American Thresherman* and *The Threshermen's Review* carried Kelly ads with wording that is unmistakably Maggard's.



The Kelly firm frequently handed out various promotional items, such as postcards, rulers, watch fobs, and mirrors like the one shown here. Photo courtesy of Raymond L. Drake and Robert T. Rhode



This image is a woodcut that depicts the prototype model of the first Kelly tandem roller. This machine had power-assisted steering and did not have the hand steering wheels that were introduced on the later production models. Photo courtesy of Raymond L. Drake and Robert T. Rhode

The road adjoining the Kelly company in Iowa City was renamed Maggard Street, and the thoroughfare's name has outlasted the factory. Citing disappointing sales, the O. S. Kelly Western Manufacturing Company, as the branch was then called, ended in 1910. Maggard died in 1924.

Throughout Maggard's life, the Kelly enterprises in Springfield prospered. By the 1880 census, Springfield boasted 20,729 residents. The city was forty times larger than it had been in Kelly's youth. The Kelly factory sprawled over ten acres, was served by the CCC and St.L Railroad, and employed between 250 and 300 skilled employees. In his unpublished "History of the O. S. Kelly Company," located in the Clark County, Ohio, Historical Society collection, Austin Moon states that yard foreman Gus Campeau supervised a crew of Macedonians, Yugoslavian immigrants. Until 1906, Mark Livingston was the foundry foreman that oversaw lines of men who shouldered thick cables to haul the trams loaded with iron and coke up the steep incline to the cupola building.

Most Kelly engines had two traction speeds; came in the popular sizes of 12, 15, and 18 horsepower; and carried a maximum allowable working pressure of 125 pounds per square inch. The company offered open-faced driver wheels that were similar to those of Birdsall of New York. Engines weighed between 10,750 and 15,500 pounds. From 1898 until approximately 1905, Kelly built triplecylinder, cross-compound, cable-plowing engines. When extra power was needed, the three cylinders could receive steam from the boiler to produce a so-called simple engine. It was also possible for the two outside cylinders to receive exhaust steam from the middle cylinder so as to form a single low-pressure cylinder. The connecting rods attached to the crankshaft at 120 degree intervals. The engine had no need of a flywheel because the momentum of the reciprocating parts was sufficient to ensure smooth revolutions. The engine used a radial valve gear. Made from 7/16-inch steel plate, the boiler had a diameter of 43 inches. The lap seam was double riveted. The boiler had 360 square feet of heating area and carried a maximum allowable working pressure of 180 pounds per square inch. The steamer developed 120 horsepower. Its massive plate wheels were 8 feet in diameter with faces 2 1/2 feet wide, and each weighed almost 3 tons. The drivers used three driving pins, not a differential gear. The cable drum held up to 1,350 feet of 1-inch hawser. Such engines were shipped to Cuba and may have been sent to Panama. Not counting the weight of the engine and wagons, the Kelly triple-cylinder steamers could haul up to 112 tons each.

At the turn of the century, Kelly sensed that his company's future would benefit from diversification. In 1898, piano plates began to be manufactured at the Springfield works. For years, the harp frames used in Steinway pianos have come from the Kelly factory in Springfield.

In 1891, Kelly had begun to experiment with steam-powered rollers designed by Edward T. Wright. A three-wheel roller and a tandem roller—both prototypes helped to prepare the roadways of Chicago's Columbian Exposition, which



Here can be seen a three-wheel roller and a tandem roller - both prototypes - that helped to build the roadways of Chicago's Columbian Exposition, which was dedicated in October of 1892. At the conclusion of the exposition, these machines were sold in the Chicago area. For the first couple of years of production, the Kelly three-wheel rollers did not have the horizontal steam chamber mounted on the left side of the boiler. Courtesy of Conrad Milster, who discovered this image in Engineering Magazine



The city of Richmond, Indiana, purchased another of the earliest Kelly steamrollers. It was pictured in a commemorative book published in 1894. Photo courtesy of Raymond L. Drake and Robert T. Rhode

was dedicated in October of 1892 and which opened in 1893. These machines were subsequently sold in the Chicago area. By 1892, Kelly had begun regular production of steamrollers. In May of that year, the *Cedar Rapids (Iowa) Gazette* reported that Maggard had arrived in that city to demonstrate an 18 HP Kelly roller weighing 12 tons. The paper went on to state that Kelly rollers already were in use by most of the league baseball clubs and eastern racetracks. O. S. Kelly literature from 1894 indicates that there were approximately 125 of the company's



This photograph shows an early single-cylinder O. S. Kelly road roller. The year 1894 marked the introduction of the horizontal steam chamber, which is a hallmark associated with Kelly rollers. This style was built from 1894 until 1908. Starting in 1907, the more efficient two-cylinder engines were introduced and, by late 1908, the single-cylinder engine had been completely phased out. An easy way to spot these single-cylinder machines is to note the steam chamber that is shorter than that of the two-cylinder models. Photo courtesy of Raymond L. Drake and Robert T. Rhode



Kelly's first tandem roller employing a horizontal engine was introduced in 1904. By using this design, a smoother surface was created on the asphalt, which did not have the wavy texture that was often caused by rollers using the upright style of engine. This horizontal engine design would become the standard for the next twenty-five years. Photo courtesy of Raymond L. Drake and Robert T. Rhode

rollers in service in the United States and Canada. Interestingly, most of these rollers had been sold in the northeast, and only two were shown to have made their way west of the Mississippi: the one that made headlines in Cedar Rapids and a second machine that was delivered to the city of Tacoma, Washington. Kelly steamrollers were the machines of choice for rolling lawns, cemeteries, and racetracks for horses and automobiles alike. In 1911, the steamrollers used in building the Indianapolis Motor Speedway were supplied by Kelly. In 1902, O. S. Kelly's road roller division was split off and became the Kelly-Springfield Road Roller Company.

In the early part of the twentieth century, America was in the grip of a major recession. The Panic of 1907 persisted into 1908, and, until 1912, business was jittery. In New York, the Buffalo Pitts Company, which had sprung from the genius of the Pitts twins, was headed for bankruptcy. Buffalo Pitts had long built farm engines and had invented a steamroller of superior design. A receiver was called in to downsize the company by selling off various Buffalo Pitts products in an effort to consolidate the business. Between 1910 and 1912, the company had been financing Charles Olmsted in the design and production of an airplane, but Buffalo Pitts had to cut off the funding. Recognizing Buffalo's time-honored sales territory agreements with O. S. Kelly, Buffalo Pitts began selling steamroller components to Kelly. The first roller built in Springfield with Buffalo Pitts components left the factory in early 1913. In 1916, the Buffalo Steam Roller Company merged with the Kelly-Springfield Road Roller Company. Various officers of the Buffalo firm relocated in Springfield. Most notably, Charles Greiner, who had been secretarytreasurer of Buffalo Pitts, would become the new president of the Buffalo-Springfield firm and would remain so for another thirty-five years. A frequently reprinted anecdote alleges that, because a Buffalo stockholder refused to endorse the merger, Kelly-Springfield and Buffalo Pitts road rollers were built under the same roof in Springfield until 1921, when the stockholder relinquished his stock and production of new Buffalothe Springfield steamrollers began in earnest. Indeed, batches of steamrollers that were finished in Springfield in 1921 bore the name Buffalo Pitts on the earliest rollers and the name Buffalo-Springfield on the latest rollers.

Kelly and Buffalo were innovators in American steamroller design. Their merger was a fortuitous event for these firms. The Buffalo Pitts Company built a three-wheel, or macadam, locomotive-style roller that was clearly superior to all others available during this period, and the two-roll, or tandem, vertical-boiler Kelly roller, with its horizontal engine, which was first introduced in 1902, was the most successful "teapot" model. The Buffalo-Springfield Company was able to sell the two best designs of steamrollers on the market: the best threewheeler and the best tandem. The members of the engineering department at the Springfield factory were unique in never being content to rest on their laurels; these engineers were constantly improving existing products, as well as experimenting with new designs. Most notably, the Kelly-Springfield Company was the first to manufacture gasoline rollers as early as October of 1907.

The broad scope of products manufactured by the Kelly enterprises, as well as the number of firms that were associated with the Kelly family, is astounding even to those who have read recently about the merits of diversification. In 1888, Oliver's son Edwin, born in 1857, served as president of the Springfield Coal & Ice Company. In 1894, he joined his brother, Oliver W., born in 1851, and inventor Arthur W. Grant in founding the Rubber Tire Wheel Company, forerunner of the Kelly-Springfield Tire Company. Edwin organized the Kelly Springfield Truck Company in 1910. He stayed with that firm only two years but remained with the O. S. Kelly Company until 1921. Edwin presided over half a dozen firms, including the Home Lighting, Heating, and Power Company and the Kelly-Springfield Printing Company. For a long time, Edwin was a newspaper publisher.

In 1899, Edwin purchased Whitehall, a 1,100-acre estate situated just north of Yellow Springs, Ohio. There, he raised champion shorthorn cattle and hogs, as well as new hybrids of dahlias and peonies. Edwin traveled around the world to collect valuable furniture, curios, and art. Internationally renowned guests visited Whitehall. The vastness of Edwin's estate was far grander than his father's gold rush fortune had been.

Oliver S. Kelly died in 1904. Throughout his remarkable life, he contributed greatly to the growth of Springfield, Iowa City, and the nation.

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American Steamrollers 1871-1935 Photo Archive.

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The foundation of an empire! Here we see a stock certificate for Oliver S. Kelly's Bonanza Mining Company, which made him a wealthy man and enabled him to build his great industrial realm.



Here is an early stock certificate for the O. S. Kelly Company that was assigned to Oliver W. Kelly, one of O. S. Kelly's sons.