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Steam Power, Part 2

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Between the late 1700s, when steam engines in factories had become the primary power source, and 1869 when Parsons Brothers had their San Diego shop, a lot had happened to the steam engine. Step by step several innovations were made. Richard Trevithick in an attempt to build a locomotive eliminated the separate condensing chamber that was the major component of Watt's design, and in 1797 built his first locomotive using pressure steam. The model failed but due to weak tracks, not the engine. Trevithick's idea was again refined by George Stephenson, who rerouted the exhaust blast to create a draught in the firebox. This added power, which meant the size and weight of the engine, could be reduced. Goldsworthy Gurney later refined Stevenson's engine even more.

The steam engine was being used to power ships, in no small part due to Robert Fulton, via William Henry, whose attempt failed, to John Fitch a friend of Henry's, who built a ship that did work but was too slow to operate at a profit, through John Stevens, who saw Fitch's boat operate, but never really made his ship run any faster. Stevens did however have a business partner, Robert Livingston, who would become instrumental when he met Robert Fulton, and became his business partner. Fulton's success in 1807 would change shipping, as in 1838 when the Great Western and the Sirius raced each other for the title of fastest Atlantic passenger steamship. The Sirius, which was designed to cross the English Channel won, but had to burn the ships furniture, and one mast to do it. The Great Western, the first steam ship designed to cross the Atlantic, arrived the next day, with 15 tons a coal still aboard. It had made the trip in 15 days. Trips from Europe, Asia, and the East Coast to San Diego also became faster as steam power was added to or replaced sailing ships. In 1789, the first U.S. patent for a steam-powered land vehicle not using tracks was granted to Oliver Evans. Steam power was everywhere.

"Some assembly is required." Transporting the massive engines was no easy task. They had to be shipped in parts, and some of the parts were still considerably heavy. But there is another more difficult problem. John Sutter ran across it when he "bought" Fort Ross from the Russians in 1841. After disassembling several building from the fort and moving them to Sacramento, he discovered that no one in Sacramento knew how to reassemble the Russian carpentry work. The same would be true for steam engines. When the new engine arrived at its location, there had to be someone there that knew how to put it together, have the tools to do that, know how to make it work, and keep it working. Engineers would sometimes accompany the larger engines to their destination. In the port town of San Diego, the problem was more easily solved then other areas, as some crew members of the incoming ships knew the steam engines well.