

Industrial revolution also called industrialization is symbol of many changes in our history and lives. People needed to produce faster, started to improve and simplify everything possible. Mankind was substituted by machines and manufacturing based mainly on handwork ended.

Revolution began in 1760 in the Great Britain, spreads very quickly around Europe, North America and finally whole world. Machines sometimes produced 100x more than man. People moved from countryside to towns and cities, so agriculture lost its significance and influence, industry became primary sphere. About 1900 the most of people worked in factories and services, incomes and living standard increased, everything thanks to new invented machines.

The spinning jenny was one of the first and the most important inventions. It is a multi - spool spinning frame. The spinning jenny was invented in 1764 by English James Hargreaves, living in village near Blackburn, England. The device reduced the amount of work needed to produce yarn, with a worker able to work eight or more spools at once. This grew to 120 as technology advanced.

Next was a steam engine, it is a heat engine that performs mechanical work using steam as its working fluid. This machine has a very long history, going back about 2000 years, finally James Watt improved it. Early devices were not practical power producers, but more advanced designs producing usable power became a major source of mechanical power over the last 300 years.

Steam engines enabled the Industrial Revolution, beginning with applications for removing water from mines using vacuum engines. Subsequent developments using pressurized steam and converting linear to rotational motion enabled the powering of a wide range of manufacturing machinery. This could be sited anywhere that water and coal or wood fuel could be obtained, whereas previous installations were limited to locations where water wheels or windmills could be used. Significantly, this power source would later be applied to prime movers, mobile devices such as steam tractors and railway locomotives. Modern steam turbines generate about 80% of the electric power in the world using a variety of heat source.

Steam engines are typically external combustion engines, although other external sources of heat such as solar power, nuclear power or geothermal energy may be used. The heat cycle is known as the Rankine cycle.

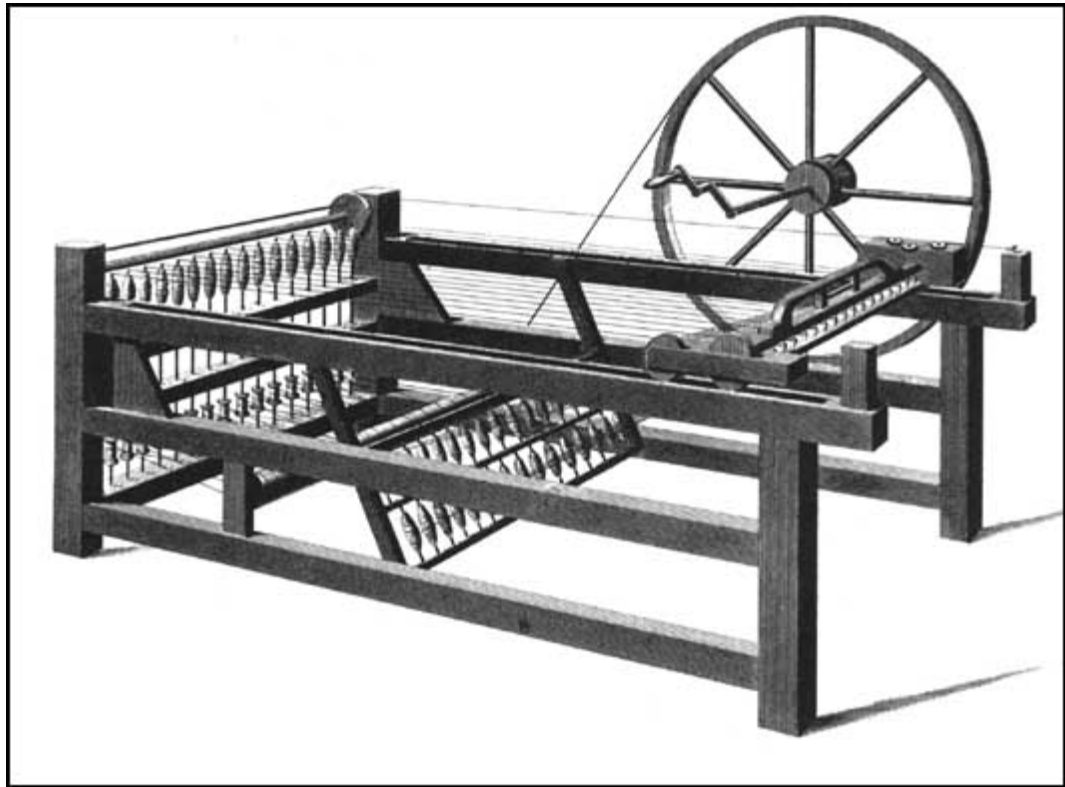
In general usage, the term 'steam engine' can refer to integrated steam plants such as railway steam locomotives and portable engines, or may refer to the machinery alone, as in the beam engine and stationary steam engine. Specialized devices such as steam hammers and steam pile drivers are dependent on steam supplied from a separate boiler.

The water frame is other invention of these times. It is named after the spinning frame, when water power is used to drive it. Both are credited to Richard Arkwright who patented the technology in 1768. It was based on an invention by Thomas Highs and the patent was later overturned. Clock maker John Kay, who helped Highs build the spinning frame, sold the design to Arkwright (for what might be considered a derisory sum). It was Arkwright, however, who made the system work, realising that account had to be taken of the fibre lengths in the batch being spun.

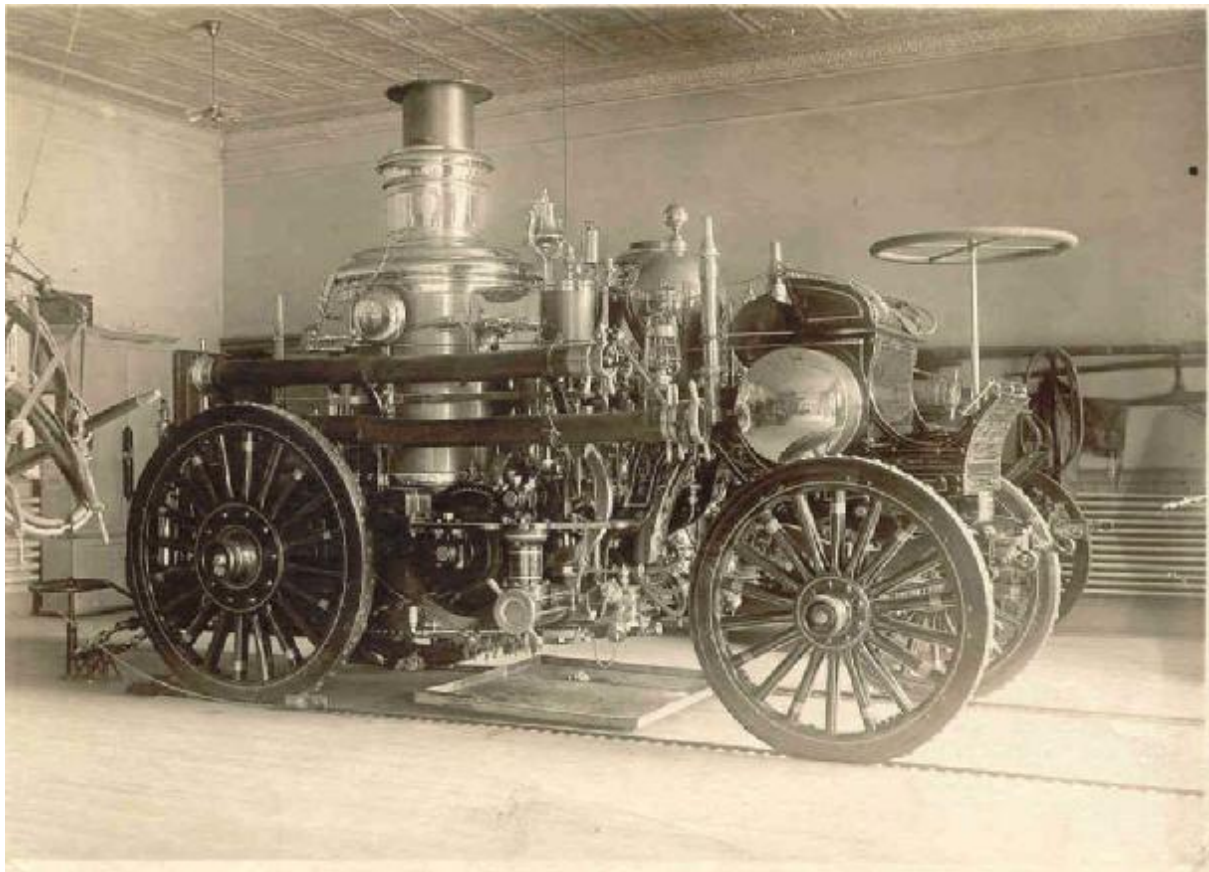
Next legendary invention is incandescent light bulb. Thomas Alva Edison is considered as a father of it, but many other people participated. Historians concluded that Edison's version was able to outstrip the others because of a combination of three factors: an effective incandescent material, a higher vacuum than others were able to achieve (by use of the Sprengel pump) and a high resistance that made power distribution from a centralized source economically viable.

The lamp was a small component in his system of electric lighting, and no more critical to its effective functioning than the Edison Jumbo generator, the Edison main and feeder, and the parallel-distribution system. Other inventors with generators and incandescent lamps, and with comparable ingenuity and excellence, have long been forgotten because their creators did not preside over their introduction in a system of lighting.

Spinning jenny



Steam engine





Light bulb