The history of invention of the steam turbine

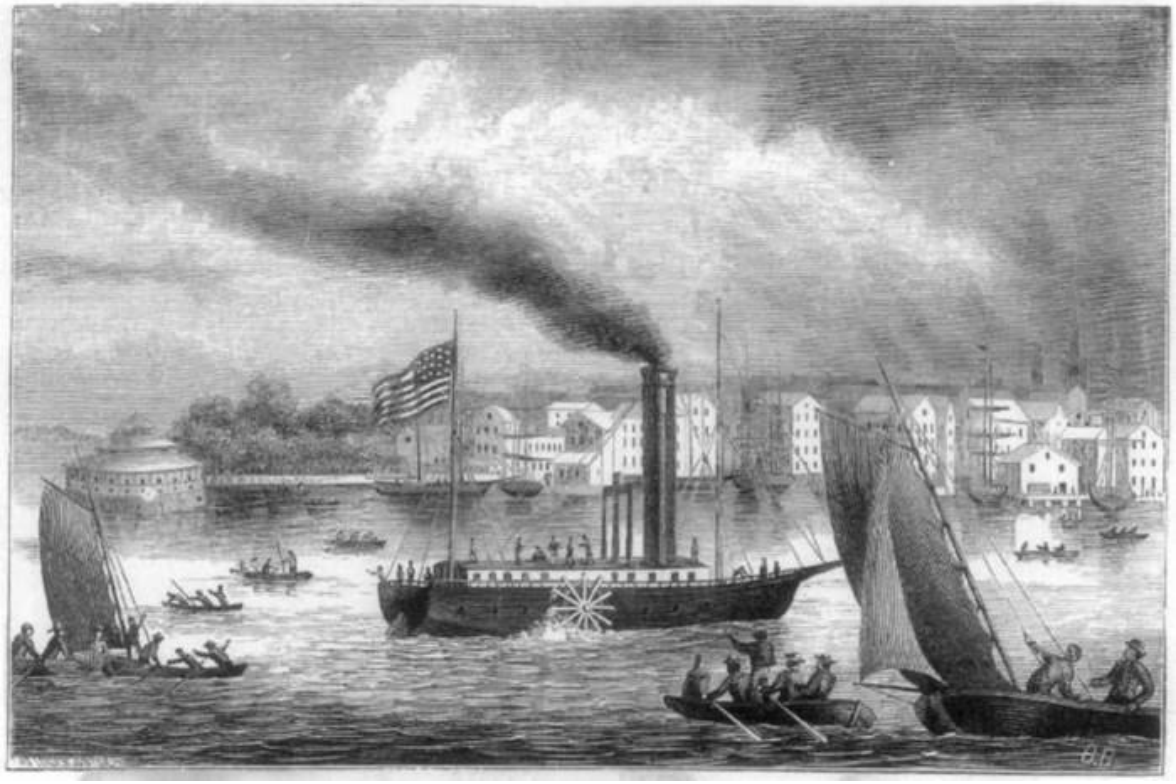
STEAM TURBINE

is a device that extracts thermal energy from pressurized steam and uses it to do mechanical work on a rotating output shaft.

on the first steams

Cars with a steam engine appeared in the 19th century, and by the time, when was started production of cars, running on gasoline, they were already distributed.

The nineteenth century is not for nothing called the century of steam. With the invention of the steam engine was a real revolution in the industry, energy and transport. It became possible to mechanize the work that previously required too many people's hands.



The expansion of industrial production required the increasing engine power. However, initially a high power was not a specification of steam turbine...

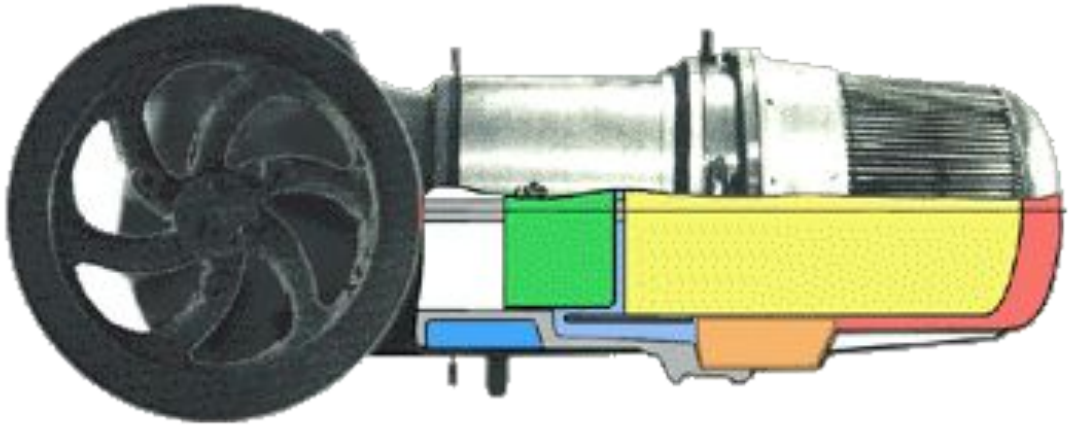
Hydraulic turbine as a device for converting the potential energy of water into kinetic energy of the rotating shaft has been known since ancient times. The steam turbine has as a long history, it is one of the first designs known under the name "Heron's turbine" and dates from the first century BC. However, until the XIX century, steam turbines was rather toys than real industrial application devices.

Hero Engine

And only with the beginning of the industrial revolution in Europe, after extensive practical application D. Watt's steam engine, inventors have to look closely to the steam turbine

Creation of steam turbines required the deep knowledge of the physical properties of steam and laws of it's expires. Its production was possible only with a relatively high level of technology of working with metals, as the needs precision of production of parts and strength of the elements were significantly higher than in the case of the steam engine.

However, time went on, the technique was improved, and the hour of practical application of steam turbine has come. First primitive steam turbines were used in sawmills in the Eastern U.S. in the years 1883-1885.

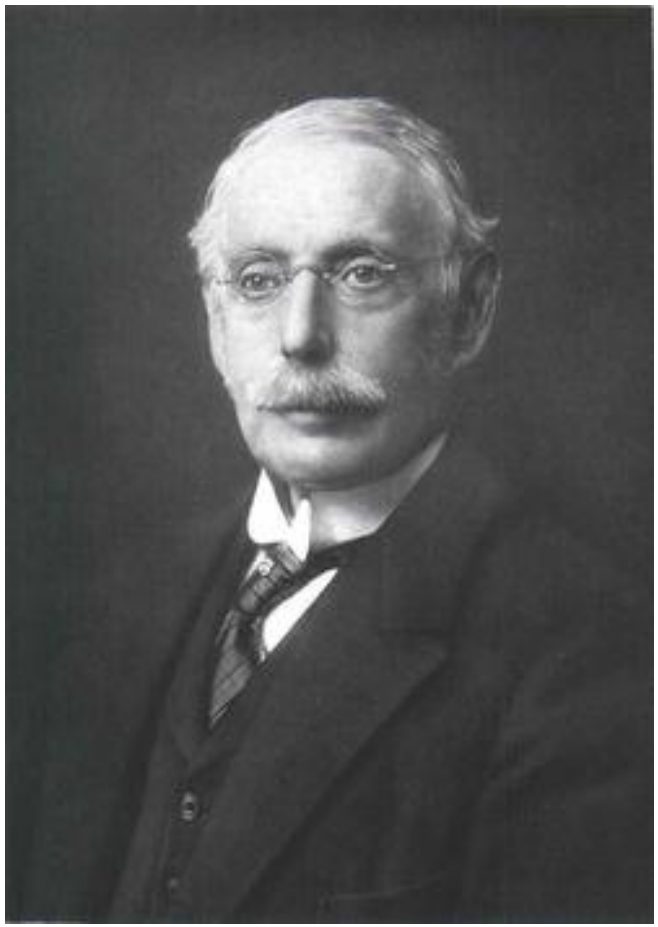


Invention of Carl Gustaf Patrik De Laval (1845-1913)

Laval's steam turbine is a wheel with blades. Jet of steam, produced in the boiler, comes out of the pipe (nozzle), pushes on the blades, and spins the wheel. During the experimenting with different tubes for steam, the designer came to the conclusion that they must be in the form of a cone. Thus appeared the applied to the present Laval nozzle (patented in 1889). This important discovery inventor made, rather, intuitively was needed several decades to theorists have shown that the nozzle of such form gives the best effect.

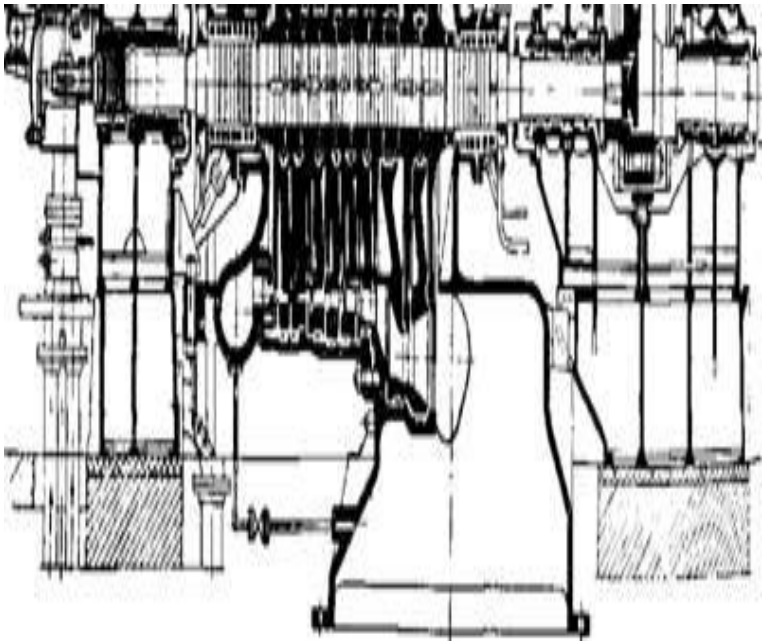
Charles Algernon Parsons (1854-1931)

He began to practice the turbines in 1881, and three years later he got a patent for its own design: the Parsons connected the steam turbine to a generator of electricity. With the turbine was possible to generate electricity, and it immediately raised the interest of the society to the steam turbines. As a result of 15-year research, Parsons created the most advanced for those times reactive multistage turbine. He made a few inventions that have improved efficiency of the device (Advanced seal design, methods of fastening of the blades in the wheel, speed control system).



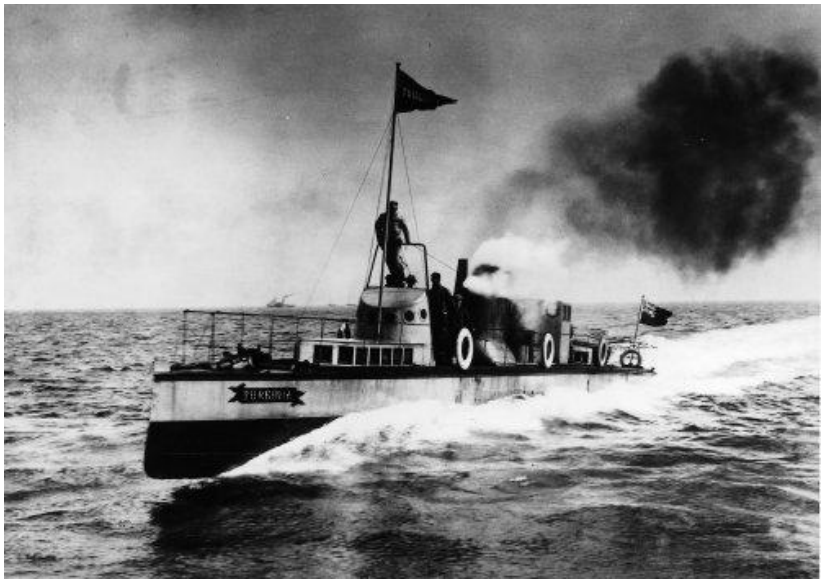
Auguste Rateau (1863-1930)

Created a comprehensive theory of turbomachinery. He developed the original multi-stage turbine, which was successfully demonstrated at the World's Fair, held in the French capital in 1900, For every stage of the turbine Rateau calculated optimum pressure drop, which ensured a high overall efficiency of the machine.



Glen E. Curtis (1879 - 1978)

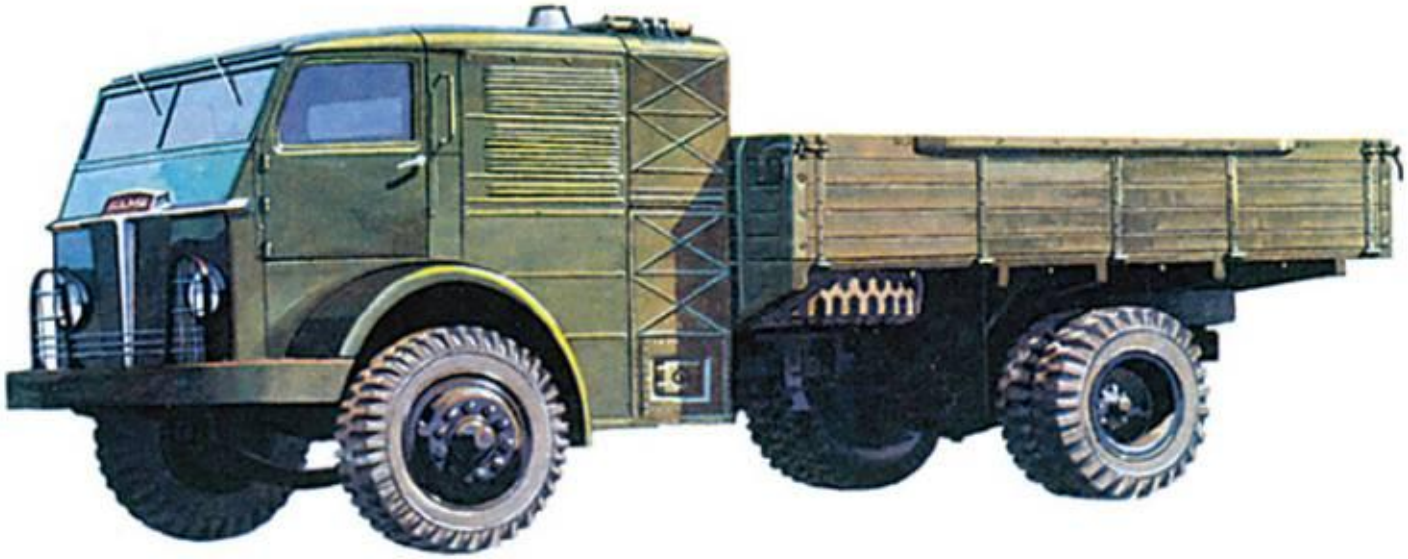
In his machine rotational speed of turbine was lower, and energy of steam use a completely. Therefore Curtiss turbines were smaller and of more robust design. One of the main applications of steam turbines is propulsion of ships. The first ship with steam turbine engine - "Turbinia" - was built by Parsons in 1894, developed a speed of 32 knots (about 59 km / h).



The use of steam turbines

antika traktor

An experimental steam truck Nami-012 could work on coal, peat and wood



American steam engine Doble was produced in extremely limited quantities: from 1923 to 1932 was made only 42 copies. The sample in the picture is dated 1929.

Steam car of "Brooks" brand leave the conveyor of factory in Stratford, Ontario, in 1926.

Nowadays almost no one remembers the steam engine. Although, the surge of interest in the postwar years was - in connection with the creation of compact turbine engines.

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