Carl Gustaf de Laval Biography

Carl Gustaf de Laval

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Contents

Carl Gustaf de Laval Biography.....1

Contents.....2

Biography.....3

Biography

With his varied interests and his inventive talent, Carl Gustaf de Laval has been compared to Thomas Edison . He was involved with the dairy industry, steam turbines, electricity, and electrometallurgy in aerodynamics. At one time, de Laval had 100 engineers working to develop his devices and inventions.

De Lavals first major success was in the dairy industry. In 1877, he invented a cream separator whereby milk was placed in a container that was spun at 4,000 revolutions per minute by a steam engine. This speed caused the lighter cream to separate and remain in the center of the container while the heavier milk was pushed to the outer part and forced up through tubes to the outside, leaving only the cream in the container.Dairies all over the world used this design. He also invented a vaccuum milking machine.

Probably de Laval's greatest achievement was his contribution to the development of the steam turbine. For a long time people had known that steam could spin blades as it rushed past them. In 1887 de Laval devised a small, high-speed turbine in which jets of steam hit a single set of blades set on a rim of a wheel. To reach the speed of 42,000 revolutions per minute, de Laval improved the wheel and the nozzle that produced the jet of steam. During this period Charles Parsons was working on steam turbines, in which he employed several stages with different sets of blades so the steam would release its energy in small steps. On the other hand, de Laval perfected the single-stage, simple-impulse turbine that was smaller but became known for its reliability. He built a large number of these turbines from 1889-97 ranging in size from five to several hundred horsepower. He also invented special reduction gearing which allows a turbine rotating at high speed to drive a propeller or machine at comparatively slow speed, an extremely useful tool for ship propulsion.