Thomas Newcomen Biography

Thomas Newcomen

The following sections of this BookRags Literature Study Guide is offprint from Gale's For Students Series: Presenting Analysis, Context, and Criticism on Commonly Studied Works: Introduction, Author Biography, Plot Summary, Characters, Themes, Style, Historical Context, Critical Overview, Criticism and Critical Essays, Media Adaptations, Topics for Further Study, Compare & Contrast, What Do I Read Next?, For Further Study, and Sources.

(c)1998-2002; (c)2002 by Gale. Gale is an imprint of The Gale Group, Inc., a division of Thomson Learning, Inc. Gale and Design and Thomson Learning are trademarks used herein under license.

The following sections, if they exist, are offprint from Beacham's Encyclopedia of Popular Fiction: "Social Concerns", "Thematic Overview", "Techniques", "Literary Precedents", "Key Questions", "Related Titles", "Adaptations", "Related Web Sites". (c)1994-2005, by Walton Beacham.

The following sections, if they exist, are offprint from Beacham's Guide to Literature for Young Adults: "About the Author", "Overview", "Setting", "Literary Qualities", "Social Sensitivity", "Topics for Discussion", "Ideas for Reports and Papers". (c)1994-2005, by Walton Beacham.

All other sections in this Literature Study Guide are owned and copyrighted by BookRags, Inc.



Contents

Thomas Newcomen Biography.....1

Contents.....2

Biography.....3

Biography

Thomas Newcomen was the first person to build an effective and economical steam engine. His engines were based primarily on the principles of the steam pumps of English military engineer Thomas Savery and French physicist Denis Papin. The improvements and experiments begun by Newcomen, while primitive compared to James Watt's engines of the late 1700s, paved the way for steam power to lead the industrial revolutions of Europe and later the United States.

Newcomen was born in Dartmouth, England, in February 1663. Little is known of his early life and training, but he was quite possibly apprenticed at an early age to an iron worker-toolsmith in Exeter. He established his own blacksmithing business and entered a partnership with a plumber by the name of John Calley.

In 1712 Newcomen and Calley unveiled their first steam engine. It is thought that they actually developed working engines before this time but had kept it quiet in order to avoid violating Savery's patent on using "the impellant force of fire" to power a machine. Nevertheless Newcomen was forced to pay royalties to Savery.

The Newcomen engine was first used to power a pump that removed water from flooded coal mines. The pumping system consisted of a boiler, an open, brass cylinder containing a piston with leather sealing rings, and a wooden post that supported an unbalanced, pivoting, horizontal crossbeam that connected the piston rod to an arm of a mechanical pump. When the piston was pulled up by the downward stroke of the pump, steam from the boiler entered the cylinder at more than atmospheric pressure. The steam valve was closed and water was injected into the cylinder to cool the steam. The steam condensed and created a vacuum, allowing atmospheric pressure above the piston to push it to the bottom of the cylinder.

The use of air pressure rather than the force of high-pressure steam in the cycle classified this engine as an *atmospheric engine.* The engine is also designated as the second self-acting machine, clocks being the first. It remained in use, primarily at European coal and tin mines, for nearly fifty years until Watt's more efficient engines became popular. Newcomen died in London, England on August 5, 1729.