'The Power Makers' by Maury Klein

Amateurs and geniuses alike inhabit tale of inventions that fueled American industry

Bookending the 19th century, steam and electricity provided power to the American people and, at the same time, transformed the United States into an industrial colossus.

Maury Klein, an emeritus history professor at the University of Rhode Island, illuminates this transformation with portraits of the gifted amateurs and trained professionals who made it all possible.

His heroes come in all shapes and sizes, from Nikola Tesla, the impeccably dressed, phobic and impractical "poet of science," who developed alternating current systems, to Thomas Alva Edison, a genius at invention and self-promotion, who was universally acclaimed as "The Wizard of Menlo Park."

Along with their customers, Klein claims, the pioneers of power discovered, sooner or later, "that technology rarely comes without a price tag and a learning curve." Many, especially Tesla, proved spectacularly inept at making their creations commercially viable.

Even the more talented entrepreneurs among them, Pittsburgh's George Westinghouse and the estimable Mr. Edison, were ultimately forced out of their own companies by bankers.

Weighed down at times by an overabundance of detail, "The Power Makers" picks up steam when Klein turns to "the war of currents" between Edison's General Electric and the Westinghouse Electric and Manufacturing Company. Competition, he reminds us, can be a curse as well as a blessing.

The "fuel that drove American business," competition produced better and cheaper products. It also slowed the progress of standardization and ignited patent wars that frittered away time, energy and profits.

The rivalry between Edison and Westinghouse reached tragi-comic heights in 1887, when a New York State commission on capital punishment searched for humane alternatives to hanging.

Edison urged the commission to use the alternating current (AC) generators produced by Westinghouse because "the passage of the current from these machines through the human body even by the slightest contacts, produces instantaneous death."

Edison won the battle. But he did not win the war because, as, Westinghouse demonstrated, AC could be transmitted across far greater distances than DC. Samuel Insull, Edison's former secretary, then figured out how to combine the two systems to produce energy on a very large scale at a very low cost and laid the foundations for a utilities business empire.

"Once the lowly stepchild of manufacturers," Klein concludes, the industry "grew at a pace that soon dwarfed them."

With barely a twinge of nostalgia, the nation entered the world of tomorrow.

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