

# James Watt Did Not Want Information to Be Free

By Clifford D. Conner

Review of *The Most Powerful Idea in the World: A Story of Steam, Industry & Innovation*, by William Rosen (University of Chicago Press, 2010)

What is “the most powerful idea in the world”? First of all, what makes an *idea* powerful? Although I have long been attracted to the history of ideas, I have almost as long downplayed their significance as primary factors of historical change. As Goethe put it, in the beginning was the *deed*, not the *word*.

William Rosen, however, makes a good case for the particular idea at the focus of his narrative. That idea, he says, is a *sine qua non* of “the perpetual innovation machine we call the Industrial Revolution,” which brought about changes in the human condition that are far broader and deeper than generally acknowledged.

Most educated people are aware that material standards of living were significantly elevated by industrialization, but few appreciate how decisive a turning point the Industrial Revolution really was. “The average person of William Shakespeare’s time lived no better than his counterpart in Homer’s,” says Rosen. But whereas for many preindustrial millennia the human race experienced almost no increase in *per capita* productivity, “From 1700 to 2000, the world’s population has increased twelvefold—but its production of goods and services a hundredfold.” The upshot is that “a middle-class family living in a developed twenty-first-century country enjoys a life filled with luxuries that a king could barely afford” in bygone centuries.

So what *was* that most powerful idea (henceforth “MPI”) that gave rise to the Industrial Revolution? The idea of latent heat? Thermodynamics? No, Rosen makes it abundantly clear that theoretical science lagged way behind the technological innovations of the era.

Then was it the invention of the steam engine? Watt’s improved steam-engine design? Steam-powered locomotives? The substitution of coke for charcoal in iron smelting? The conversion of reciprocating to rotary motion? The mass-production factory system? Standardization of machine parts? No, the great technological leap forward “depended less on ‘macro-inventions’ such as Watt’s separate condenser than on hundreds of micro-inventions that surrounded it.”

Not even the sum total of macro- and micro-inventions can explain the phenomenon; it took “a radical transformation in the process of invention itself” to create the Industrial Revolution. And that happened in eighteenth-century England, Rosen argues, because that is where the MPI had previously emerged and taken root.

Unlike authors who claim that they alone have discovered some hidden key to the historical process, Rosen acknowledges that the critical insight at the heart of his argument originated with others, one of whom was Abraham Lincoln. The MPI is encapsulated in words from Lincoln that are carved in stone on a building that formerly housed the United States Patent and Trademark Office in Washington DC: “The patent system added the fuel of interest to the fire of genius.”

It was the idea that an inventor’s innovations could be considered *property* deserving the protection of law that provided the incentive—the “fuel of interest”—for inventors to invent, and which thereby set into motion the “miracle of sustainable innovation” that began with the Industrial Revolution and has kept rolling ever since. Before patent protection became law, an inventor’s ideas could be appropriated by others who could profit from them without compensating the inventor. In that situation, few people were motivated to invest the time and effort necessary to create the sophisticated technology of the modern era.

Although Rosen is not a partisan of “great man” history, he does credit a few pioneers—a philosopher, a jurist, and an inventor—with launching and defending the MPI. The jurist was Edward Coke, a Lord Chief Justice of England, who drafted the Statute on Monopolies that became law in 1624; the philosopher was John Locke, who “first articulated

the notion of what we would now call intellectual property”; and the inventor was James Watt, who became a particularly resolute and effective advocate of patent protection.

Patents can be a two-edged sword, however, as Rosen acknowledges: “The availability of patent protection was, predictably, motivating inventors to make more inventions; it was also motivating them to frustrate competing inventions from anyone else.”

Another American president weighed in on this issue earlier than Lincoln, and on the other side. Thomas Jefferson declared: “If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea. . . . Inventions then cannot, in nature, be a subject of property.”

So does legal protection for inventions *promote* or *retard* innovation? If the proposition “no patents, no Industrial Revolution” is true, history has not smiled on Jefferson’s position. But it is not only a historical issue; as Rosen says, the argument “continues to this day.” And whereas his case for the positive historical consequences of the idea of patents is strong, what was good for the eighteenth century is not necessarily good for the twenty-first.

Despite Rosen’s disclaimer, many readers may perceive his message to be an ahistorical paean to the patent concept. The protection of intellectual property, however, cannot be evaluated in isolation from the general concept of property, and that in turn is dependent on the entire economic and legal structure of society. The “free-market system” that Adam Smith described in eighteenth-century Britain was far different (and far more progressive) than it is today, so contemporary disputes over “information wanting to be free” will have to revolve around present-day considerations.

William Rosen’s book is fundamentally about patents, but it is much more than that. There were numerous factors that played critical roles in the success of the Industrial Revolution, and some readers may think Rosen has gone overboard in elevating patent protection above all the others, but there is much more than that argument in this valuable book. It is also one of the best-written and interesting accounts of the specific technological achievements of the Industrial Revolution that I have come across, and thus provides an excellent new resource for historians teaching that era.

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