

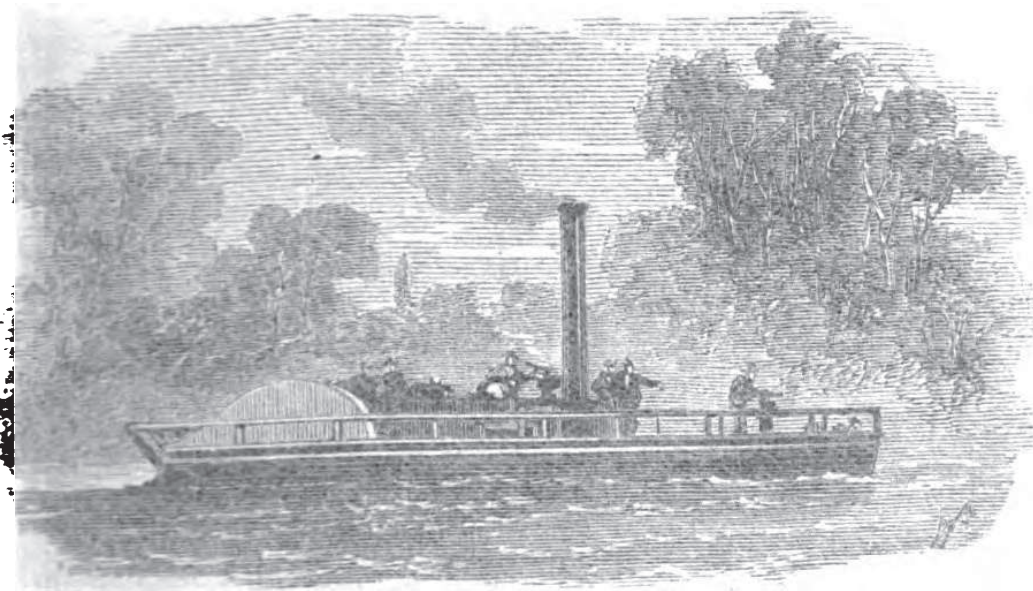
STORIES  
OF  
INVENTORS  
AND  
DISCOVERERS  
IN  
Science and the Useful Arts.

A BOOK FOR OLD AND YOUNG.

BY JOHN TIMBS, F.S.A.

AUTHOR OF "CURIOSITIES OF LONDON," "THINGS NOT GENERALLY KNOWN," ETC.

With Illustrations.



The First Practical Steam-boat (p. 279).

"Justice exacts, that those by whom we are most benefited should be most honoured."—DR. JOHNSON'S *Rambler*.

LONDON:  
KENT AND CO. (LATE BOGUE), FLEET STREET.  
MDCCCLX.

Savery joined in a patent with Newcomen and Cawley for the atmospheric engine; but this appears to be a mistake, since no traces of such an instrument have been found at the Rolls Office. He took out a patent, however, in 1686, for polishing plate-glass and for rowing vessels with paddle-wheels; and, in 1706, for a double bellows to produce a continuous blast. He published in 1698 *Navigation Improved*; in 1702, *The Miner's Friend*; and in 1705, a translation, in folio, of Cohorn's *Fortification*. This last was dedicated to George Prince of Denmark, to whom he was indebted, that same year, for the office of treasurer to the sick and wounded. Savery is understood to have accumulated a considerable fortune. He died in 1715.—*Prof. Rigaud, F.R.S.*

About 1717, the Safety-valve, which had been invented about 1681 by Papin for his Digester, was applied to Savery's engines by Desaguliers.

Papin, while making experiments for Boyle, discovered that if vapour be prevented from rising, the water becomes hotter than the usual boiling-point. This led to the invention of his "Bone Digester," which he presented to the Royal Society, with a letter describing its uses for softening bones, and for "cookery, voyages at sea, confectionery, making of drinks, chemistry, and dyeing." Charles II. commanded Papin to make a Digester for his laboratory at Whitehall; and the invention excited great interest. It was exhibited, in operation, once a week, in Water-lane, Blackfriars, in a house "over against the Blue Boot," where the people crowded in such numbers, that only those were admitted who brought with them recommendations from Fellows of the Royal Society. In 1684, when Papin was appointed temporary curator by the Royal Society, he invited certain Fellows to a supper prepared by his Digesters. John Evelyn was a guest; and he tells us how the hardest beef and mutton bones were made by the Digester as soft as cheese, without water or other liquor, and with less than eight ounces of coal, producing "an incredible quantity of gravy," and delicious jelly from the beef-bones. The guests also ate pike and other fish bones "without impediment," and pigeons "stewed in their own juice;" in such case the natural juice reducing "the hardest bones to tenderness." Evelyn sent a glass of the jelly to his wife, "to the reproach of all that the ladies ever made of the best hartshorn."

The enormous strength required for Papin's Digester, and the means to which he was obliged to resort for confining the covers, must have early shown him what a powerful agent he was using. Subsequently he adapted the piston of the common sucking-pump to a steam-machine, making it work in the cylinder, and applying steam as the agent to raise it. It is a curious fact, that although Papin invented the safety-valve, he did not apply it to his steam-machine.

About the year 1711, Thomas Newcomen, an ironmonger, and John Cawley, a glazier, both of Dartmouth, Devon, in visiting the tin-mines of Cornwall, saw Savery's engine at work, and detected the causes which led to its inefficiency for drainage. This Newcomen proposed to remedy by his atmospheric engine, in which he intended to work the mining pumps by connecting the end of the pump-rod by a chain with the arch-head of a working beam playing on an axis; the other arch-head of the beam being connected by a chain with the rod of a solid piston