

蒸気動力技術 (3) ---- 大気圧機関 (atmospheric engine)

図1 Savery機関(1)

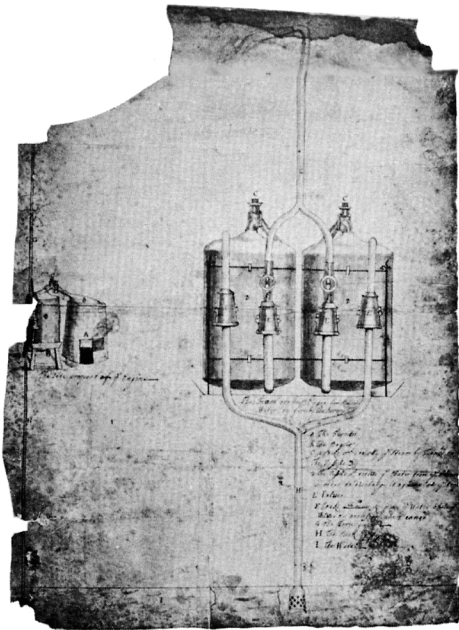
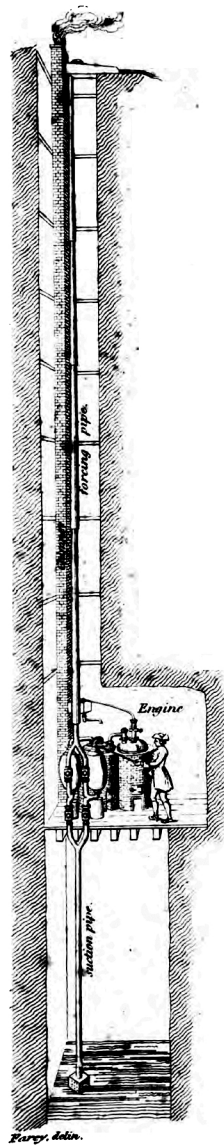


PLATE I. SAVERY'S FIRE ENGINE, 1699
From the drawing in the possession of the Royal Society

上の図1はSaveryの自筆設計図

図2 Savery機関(2)



[出典]John Farey (1827) A treatise on the steam engine, Plate I

Savery's 'Miner's Friend or an Engine to Raise Water by Fire'. Steam is admitted to the oval vessel P1 and displaces the water upwards through a check-valve R. When P1 is emptied of water the supply of steam is stopped and cold water from a cistern X is poured on P1 to condense the steam there. This creates a vacuum and water is sucked through T and valve R. P2 is filled with steam while P1 is being cooled.

図3 Savery機関(3)

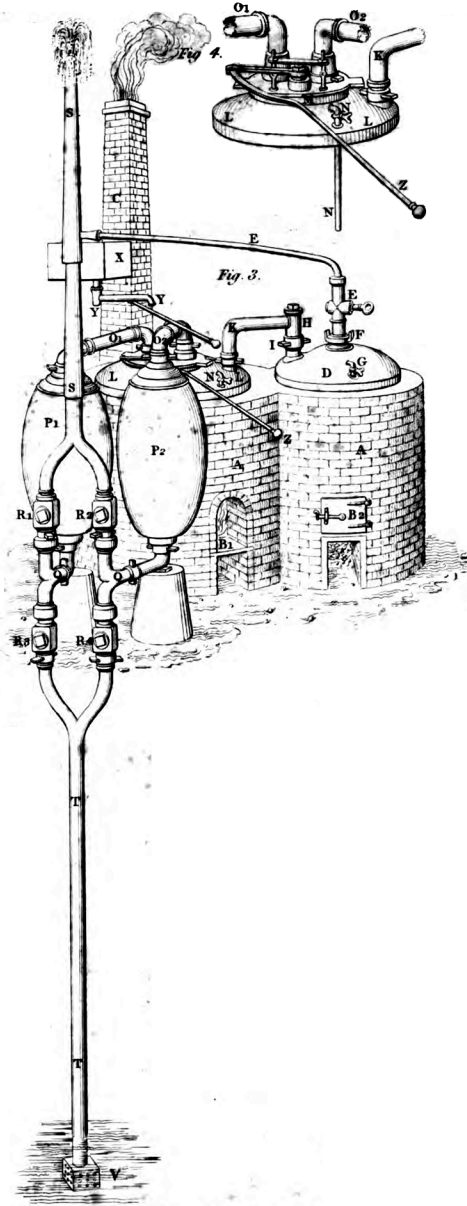
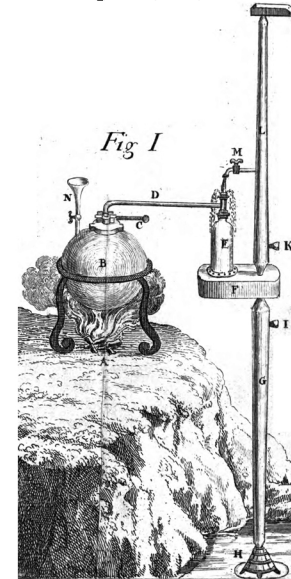


図4 KensingtonのSavery Engine (1712)



[出典]Bradley(1739) New Improvements of Planting and Gardening, p316のfig1

文章1 Saveryの1698年の主特許

new Invention of Raisening of Water and occasioning Motion to all sorts of Mill Work by the Impellent Force of Fire, which will be of great Use and Advantage for Drayning Mines, Serveing Towns with Water, and for the working of all Sorts of Mills where they have not the benefit of Water nor Constant Windes.

文章2 Saveryの1702年の広告文

Captain Savery's engines which raise Water by the force of fire in any reasonable quantities and to any height, being now brought to perfection and ready for publick use; These are to give notice to all Proprietors of Mines and Collieries which are incumbered with Water, that they may be furnished with Engines to drain the same, at his Workhouse in Salisbury Court, London, against the Old Playhouse, where it may be seen working on Wednesdays and Saturdays in every -week from 3 to 6 in the afternoons, when they may be satisfied of the performance thereof, with less expense than any other force of Horse or Hands, and less subject to repair.

文章3 3 Thomas Savery (1702,1827) The miner's friend

though my thoughts have been long employed about waterworks, I should never have pretended to any invention of that kind, had I not happily found out this new, but yet a much stronger and cheaper force or cause of motion, than any before made use of. But finding this of rarefaction by fire, the consideration of the difficulties the miners and colliers labour under by the frequent disorders, cumbersomeness, and in general of water-engines, encouraged me to invent engines to work by this new force :

図5 DesaguliersによるSavery機関の改良(1718)

