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Thomas Newcomen: Inventor and Baptist Minister, 1663 - 1729.

INVENTION or discovery in the mechanical world is not commonly associated with the Baptist denomination. Baptists are not generally supposed to have greatly contributed inventions or discoveries which have revolutionised the conditions of modern life. It may, therefore, be interesting to record or recall the fact that Thomas Newcomen, of Dartmouth, the acknowledged inventor or adapter of the steam engine, for twenty years sustained the office of Baptist minister in that Devonshire town.

Newcomen appears to have been a native of Dartmouth, and is said to have been born in the year 1663. After serving his apprenticeship with an ironmonger at Exeter, he returned to Dartmouth, where he carried on a similar business in Lower Street. His house, in the loft of which for three years he carried on experiments which would have discouraged an ordinary man, but which culminated in a working model of his engine, has disappeared at the hands of municipal improvers. The ancient carved woodwork of its front has, however, been incorporated in a new house in Ridge Hill, known as "Newcomen Lodge." This Baptist ironmonger was a reader of works on Natural Philosophy, with a mind eager to turn discoveries to practical account. Particularly his attention was directed to the cylinder and piston worked by steam, the invention of a Frenchman named Denis Papin, in 1690, but laid aside as being of little practical value. Newcomen, however, became convinced that there was more in it than had hitherto been noticed. Accordingly he set to work to bring it to greater perfection, and to apply it to the pumping of water from mines. At this he laboured in conjunction with a John Cawley, a glazier of Dartmouth. A Captain Savery, however, also a Devonshire man, was working at the same time on Papin's invention, and afterwards became associated with Newcomen in the erection of an engine near Dudley Castle in 1712.

The novelty of Newcomen's engine over Papin's and Savery's was the mode of condensing the steam in the cylinder, which was effected by directing a stream of cold water into the cylinder at every rise of the piston. This, however, unfortunately for Newcomen, was considered to be covered by the patent secured by Savery, to whom Newcomen was forced to pay a royalty. But Newcomen is regarded by engineers as the inventor of the "Atmospheric" engine, as it was called, with its arrangement of the overhead rocking beam and pump.

It was in the year 1705 that Newcomen perfected his engine, and from that date till 1729 he appears to have been busy erecting engines at the collieries of England. At the former date one was erected at Griff, near Coventry; in 1711 another appeared at Wolverhampton, and in the following year the one near Dudley Castle was fitted up. By the year 1725 his engines were in common use. Smeaton, in 1767, found no less than fifty-seven of them at work in the neighbourhood of Newcastle-on-Tyne, having cylinders ranging in size from twenty-eight to seventy five inches in diameter. Newcomen is said to have sold and risked all in order to benefit mankind by his invention.

The evolution of the steam engine is mostly ascribed to James Watt, some sixty years later, but Watt was dependent upon Newcomen. It was while repairing a model of Newcomen's engine at Glasgow University that he conceived the improvements that made him so famous as an engineer. "My attention (he wrote) was first directed to the subject of steam in the year 1759. In the year 1763, having occasion to repair a model of Newcomen's engine belonging to the Natural Philosophy Class of Glasgow University, my mind was again directed to it." But for more than half a century before Watt made the improvements which issued in a rotary engine with driving power, Newcomen's pumping engines held the field. It may be interesting to readers of these lines to learn that in addition to the model on which Watt worked, which is still at Glasgow University, there is another, which is said to be the original, in the Museum of King's College, London; and what is perhaps more interesting, a *working* model at South Kensington Museum, which may be seen any day, also an old print of the Dudley Castle engine.

Very little of Newcomen's private life is known. His family appear to have left Dartmouth early in the eighteenth century. He is, however, said to have married late in life a lady nineteen years his junior, named Waymouth, the daughter of a farmer of Malborough, near Kingsbridge, Devon. The issue of this marriage was two sons and one daughter, the second son, Elias,

joining his father in his engineering work. His daughter married a Mr. Wolcott, uncle of the celebrated "Peter Pindar," who is said to have painted Newcomen's portrait, which is believed to be lost. Newcomen, however, was a trustee under a Bromsgrove deacon's will in 1719 of some Baptist property in that Worcestershire town, and it is the appearance of his name in this will which led the writer to make the investigations above recorded, whilst his son, Elias, was one of the witnesses to the will. This Worcestershire deacon also had an interest in Newcomen's engines, for he mentions in his will, "the fund established on the fire engine and my share thereof." Newcomen was in London in 1729 on business relating to a patent for his engine, and while there contracted a fever, and died at the house of a friend. His remains were laid to rest in the famous Nonconformist burying-place—Bunhill Fields.

The chief point of interest, however, is that this inventor, whose work contributed so greatly to the machinery associated with the commercial prosperity of the nation, was a Baptist. Probably he came of a good Baptist stock, as the following may refer to his father and mother:—"November 2, 1663, Charles Newcomen and his wife, and Bathsheba Newcomen, and Robert Steed and his wife, each fined 12 pence as absentees from the Parish Church." He was not only a Baptist, but a busy man who linked the cares of the ministry with his laborious toils. This is established by the record of the Dartmouth Church:—"The very ingenious Mr. Thomas Newcomen (the projector of the engine for raising water by fire) was called out to ye ministry, which he sustained about twenty years." That the Baptist ministry, distinguished as it is in many ways, should be associated with a great discovery in the mechanical world is probably unique.

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