

intended the erection of the whole of these works, which cover an area of 10 acres and include foundries, forges, engine- and boiler-shops, and pattern, smith and copper shops. The works were fully described by Mr. Mudd in a Paper read before the North-East Coast Institution of Engineers and Shipbuilders.¹ In 1887 he became a partner in the private limited company into which the firm was converted, and in 1894 he was elected a Director, still retaining the management of the Central Engine Works in conjunction with Mr. G. H. Baines.

Amongst the most noteworthy productions of these works may be mentioned Mr. Mudd's five-crank engines, which were fitted to the s.s. "Inchmona" in the summer of 1896. The "Inchmona" has been stated to be the most economically-engined vessel afloat at the present time, having run for over twelve months on an average of 1·15 lb. of coal per I.H.P. per hour in sea service. Mr. Mudd recently effected some further developments in these five-crank engines. He devoted also much attention to the improvement of marine boilers, and devised a preserver sleeve for the tail-end shafts of marine engines which considerably prolongs the life of such shafts.

Mr. Mudd was a Member of the Institution of Mechanical Engineers, of the Institution of Naval Architects—to which he presented a Paper "On Some Details of Marine Engineering"²—of the Iron and Steel Institute, and of the North-East Coast Institution of Engineers and Shipbuilders, and a Fellow of the Society of Arts. He was elected a Member of this Institution on the 2nd April, 1889.

In addition to his work as an Engineer, Mr. Mudd devoted much time to municipal affairs. In 1889 he became a member of the Town Council of Hartlepool, and in 1895 was elected Mayor. He was made a Justice of the Peace in 1897. Mr. Mudd died at his residence, Greencliffe, Hartlepool, on the 17th May, 1898, in the forty-seventh year of his age.

GEORGE NEUMANN, born in Liverpool on the 8th August, 1817, was the youngest son of Mr. Charles William Neumann, of Dantzic, a merchant. In 1831 he went to Orbe, Canton Vaud, Switzerland, to study under Mr. Burtin, where he remained until 1833. Having

¹ Transactions North-East Coast Institution of Engineers and Shipbuilders, vol. iii. p. 55.

² Transactions Institution of Naval Architects, vol. xxxii. p. 212.

decided on an engineering career, he entered the office of Mr. Joseph Locke, Past-President, and in 1836 was that gentleman's senior pupil. In 1840 Mr. Neumann went to France as Resident Engineer to the Paris and Rouen Railway, for which Mr. Locke was the Consulting Engineer. For nine years he was engaged on the lines between Paris and Rouen, Rouen and Havre, and Paris and Cherbourg, and was subsequently for six years Engineer-in-Chief on the Rouen-Dieppe Railway. From 1853 Mr. Neumann was engaged in making the line of railway from the French frontier to Modane—a length of about 60 miles through Savoy, which was then under King Victor Emanuel. In June, 1847, he was made a Knight of the Legion of Honour by King Louis Philippe, in recognition of his services on the French railways. During the Revolution of 1848 he served in the National Guard, taking his turn as sentry at the Tuileries.

On his retirement in 1858 Mr. Neumann bought the property of Tracey, in the parish of Awliscombe, Devon, where he resided until his death, which took place on the 28th July, 1898. He was made a County Magistrate in 1867; and he was the first County Councillor elected as representative for his division. He was for many years a Member of the Board of Guardians and at all times took great interest in county and parish matters. He always made his own plans for building the farms and cottages and other improvements on his property, and within two days of his death was personally superintending the erection of some new cottages. He was chiefly instrumental in restoring the parish church of Awliscombe, in placing a clock in the tower and in enlarging the churchyard. Mr. Neumann had a remarkably good constitution and was active until the last. At the age of eighty he would go for a long day's partridge shooting, and even surmounted the difficulty of riding a bicycle. He was most accurate and painstaking in all he undertook, keeping his affairs in excellent order.

Mr. Neumann was elected a Member on the 4th May, 1858, his connection with the Institution thus lasting upwards of forty years.

DAVID ROWAN was born on the 4th December, 1822, at Ochil-tree, Ayrshire, where his father was a master slater, and with him young Rowan served about three years as an apprentice slater. In 1840 he went to Glasgow and served an apprenticeship with the late Mr. John McAndrew at the St. Rollox Foundry. He remained at those works until 1847, when he was appointed