

1859 he was employed by Mr. John Abraham, for whom he designed machinery for the manufacture of ammunition and later erected the Adderley Park Rolling Mills and Metal Works. On the transfer of this business to the Birmingham Small Arms Company, Mr. Bayliss became managing director of that establishment, retaining the position until 1889, when he founded the King's Norton Metal Company. He designed and erected improved machinery for metal-working, ammunition-making, etc., and laid out important extensions of the works at Abbey Wood, Kent. He was the inventor of the solid drawn cartridge case and laid down plant of his own design for its production at Spandau, Erfurt and Danzig in 1872. He took an active part in municipal, county and social work.

Mr. Bayliss was elected a Member of The Institution on the 2nd December, 1884.

HENRY JOSEPH BUTTER, born at Plumstead in 1835, died in London on the 9th November, 1914. He was apprenticed at Woolwich Dockyard in 1850, and was transferred to the Royal Carriage Department, Woolwich Arsenal, in 1856, as Chief Draughtsman. In 1868 he was promoted Constructor, and in 1873 he became Manager of the Department, retaining this position until 1890, when he was obliged to retire owing to injuries sustained in an accident which occurred during his work. Under his management the department underwent considerable development, iron and steel supplanted wood in construction, and machinery for working heavy guns was introduced. Mr. Butter invented many improvements in gun-mountings,¹ especially the hydraulic recoil cylinder, and organized the corps for the maintenance and inspection of ordnance machinery.

Mr. Butter was elected a Member of The Institution on the 5th April, 1881.

JOHN CARRUTHERS was born in Inverness on the 20th June, 1836. He was a son of the late Mr. Robert Carruthers, LL.D., and was educated at Christ's Hospital and the Inverness Academy. He began his professional career under Mr. Roswell G. Benedict, then Chief Engineer of the Great Western Railway of Canada, and subsequently was employed on the survey and construction of railways in Michigan, Illinois, and Minnesota, the Riga-Dunaburg

¹ Minutes of Proceedings Inst. C.E., vol. lxxvii, p. 122.