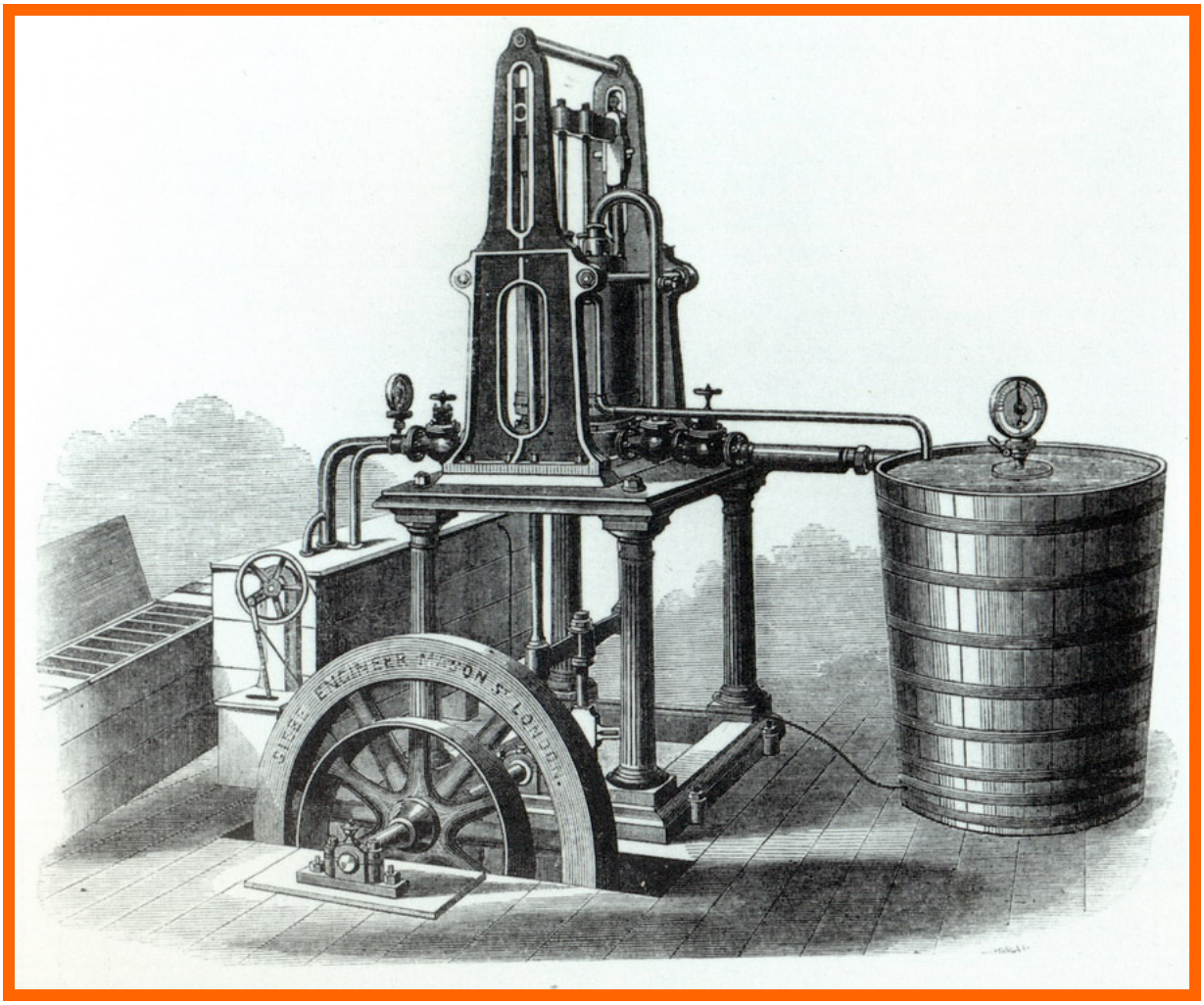
BRITISH REFRIGERATION FOR BREWERIES

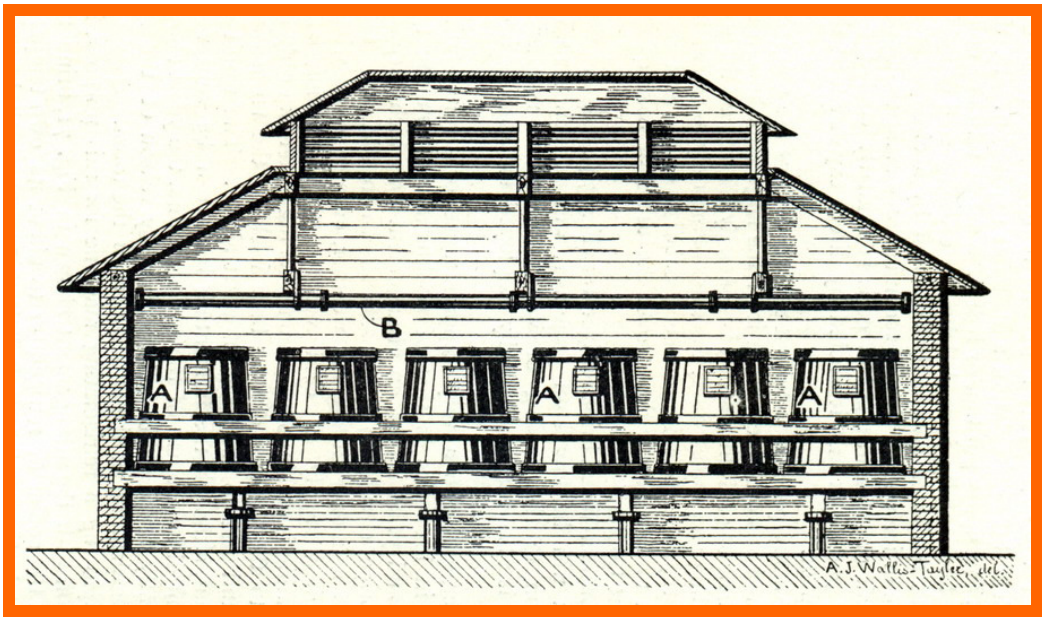


Harrison-Siebe Refrigerating Machine, 1857

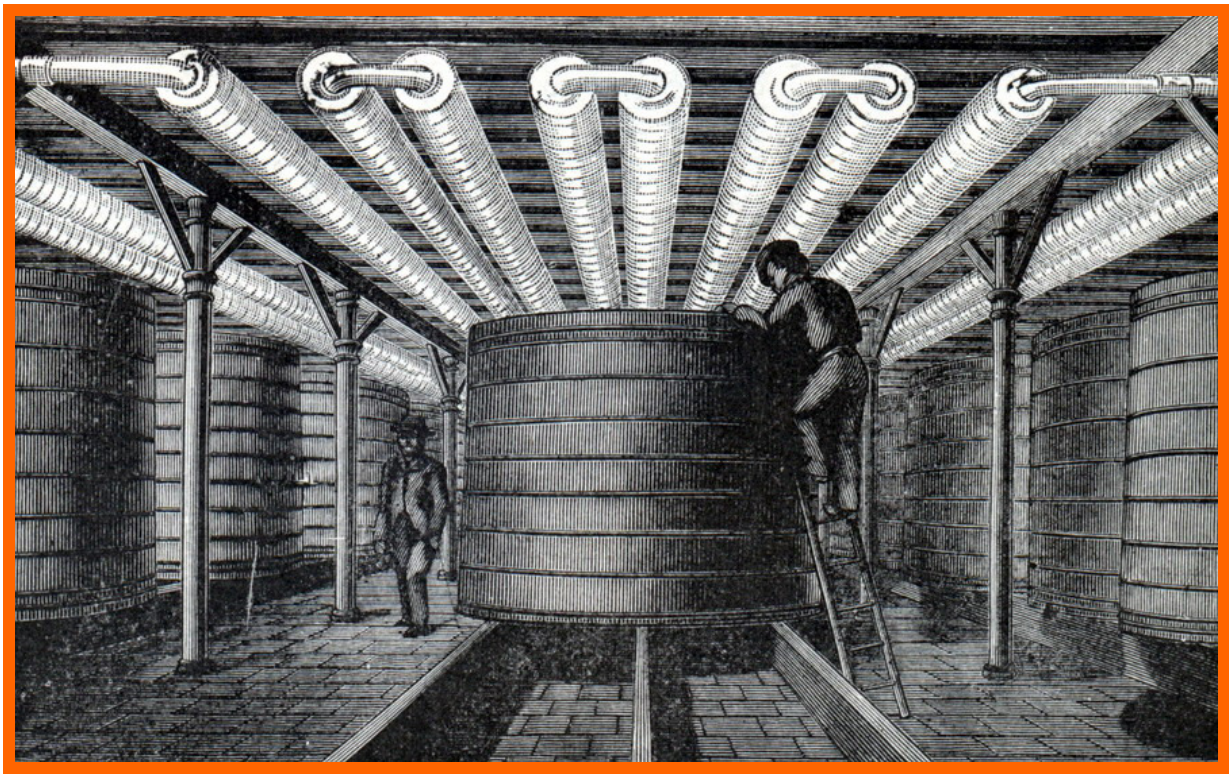
The Scotsman James Harrison, living in Australia, is generally credited with producing the first commercial vapour-compression refrigerating machine in about 1855. He had an improved design manufactured in London by Siebe & Company in 1857, the first of which was sold to the Truman, Hanbury & Buxton Brewery in London

("Heat & Cold: Mastering the Great Indoors," Barry Donaldson & Bernard Nagengast *ASHRAE*, 1994: CIBSE Heritage Group Collection)

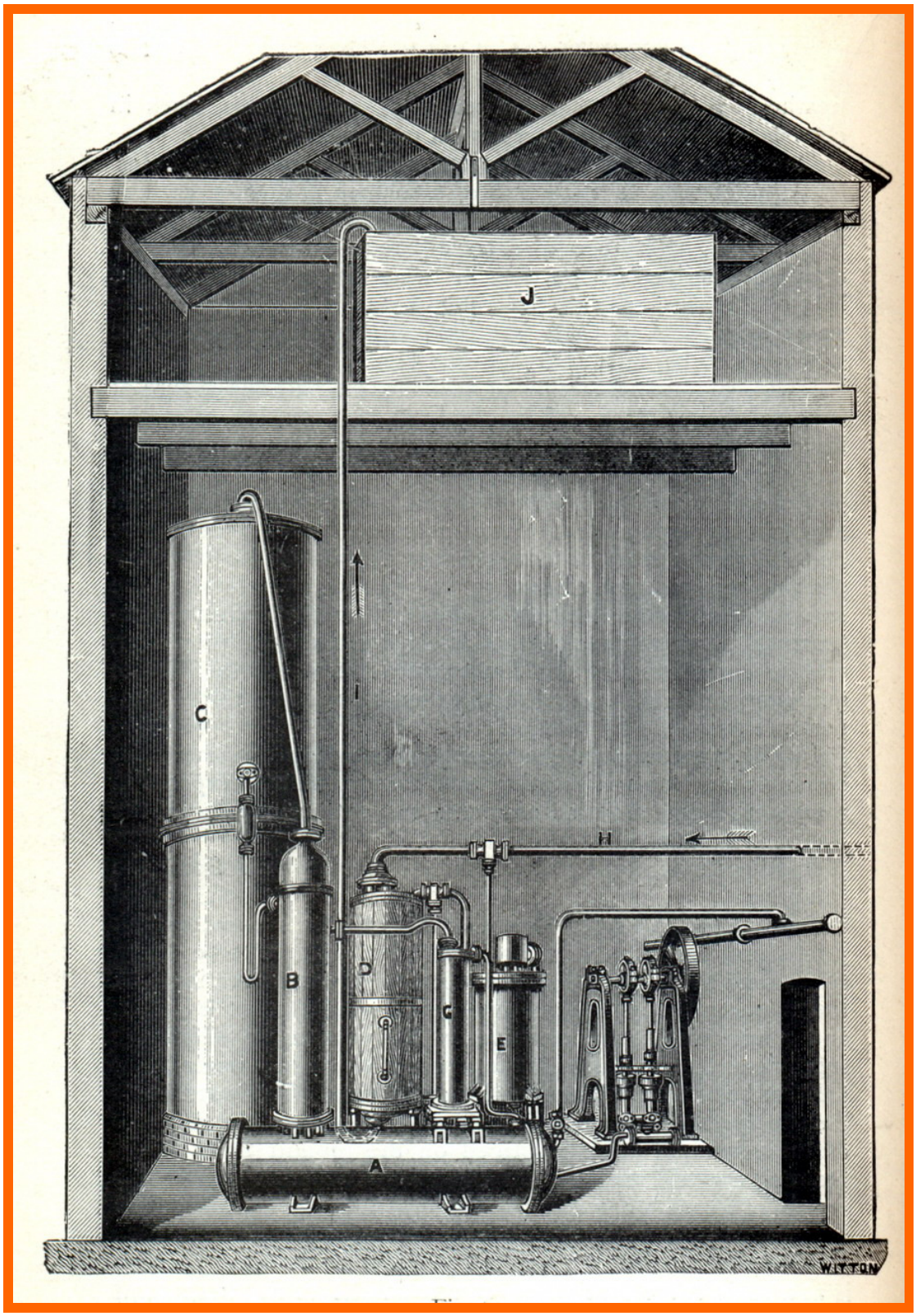
See also "Times of Challenge –The Cold Makers in Australia," Geoffrey C Luscombe*, Trans ASHRAE, *1995 and "James Harrison: Pioneering Genius," W R Lang, 2003



Brine cooling coils in a Fermenting Room ("Refrigerating and Ice-Making Machinery," A J Wallis-Tayler, 1902: CIBSE Heritage Group Collection)

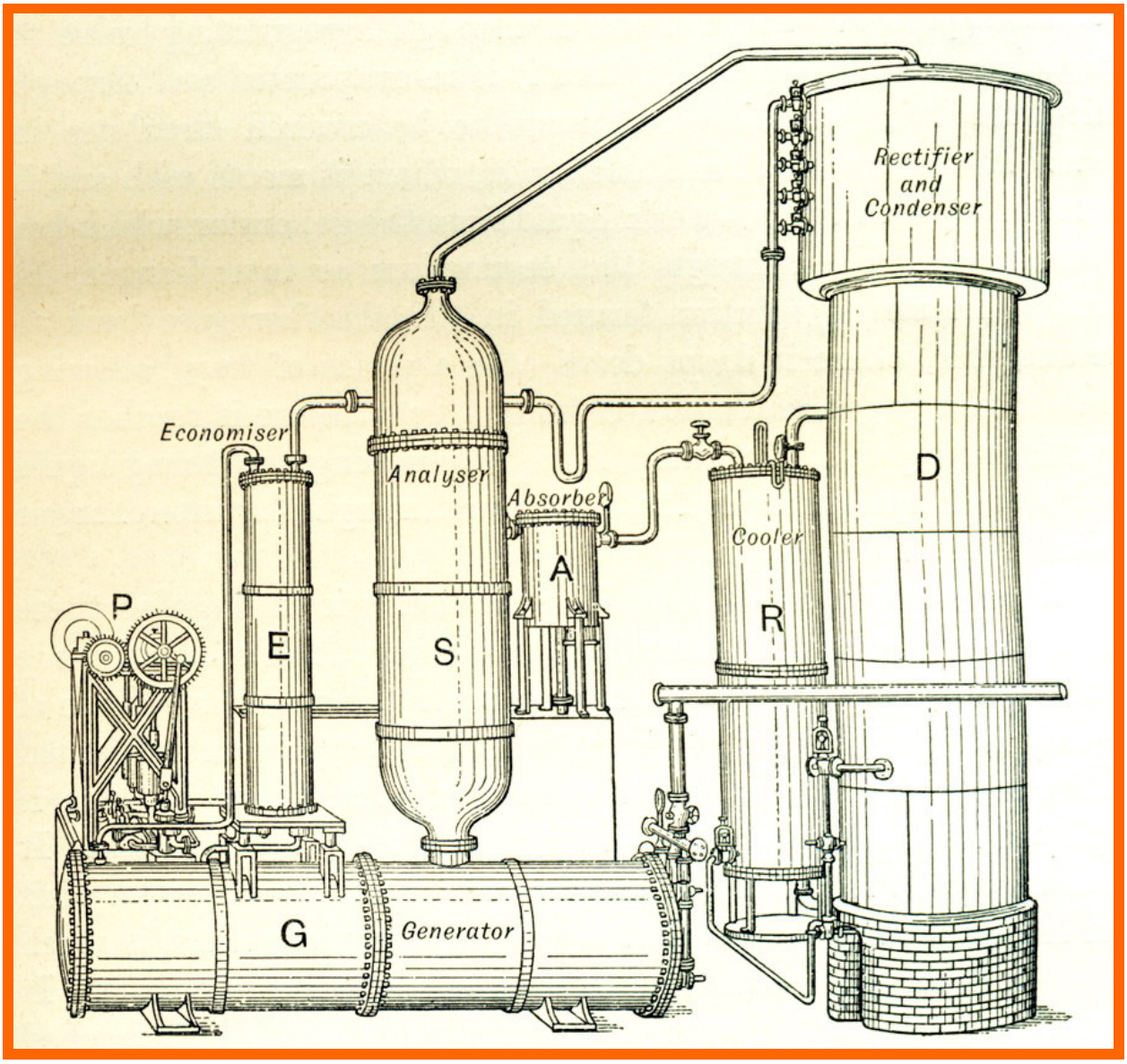


Cooling a brewery fermenting room using the De La Vergne patented direct-expansion pipe system ("Refrigerating and Ice-Making Machinery," A J Wallis-Tayler, 1902)



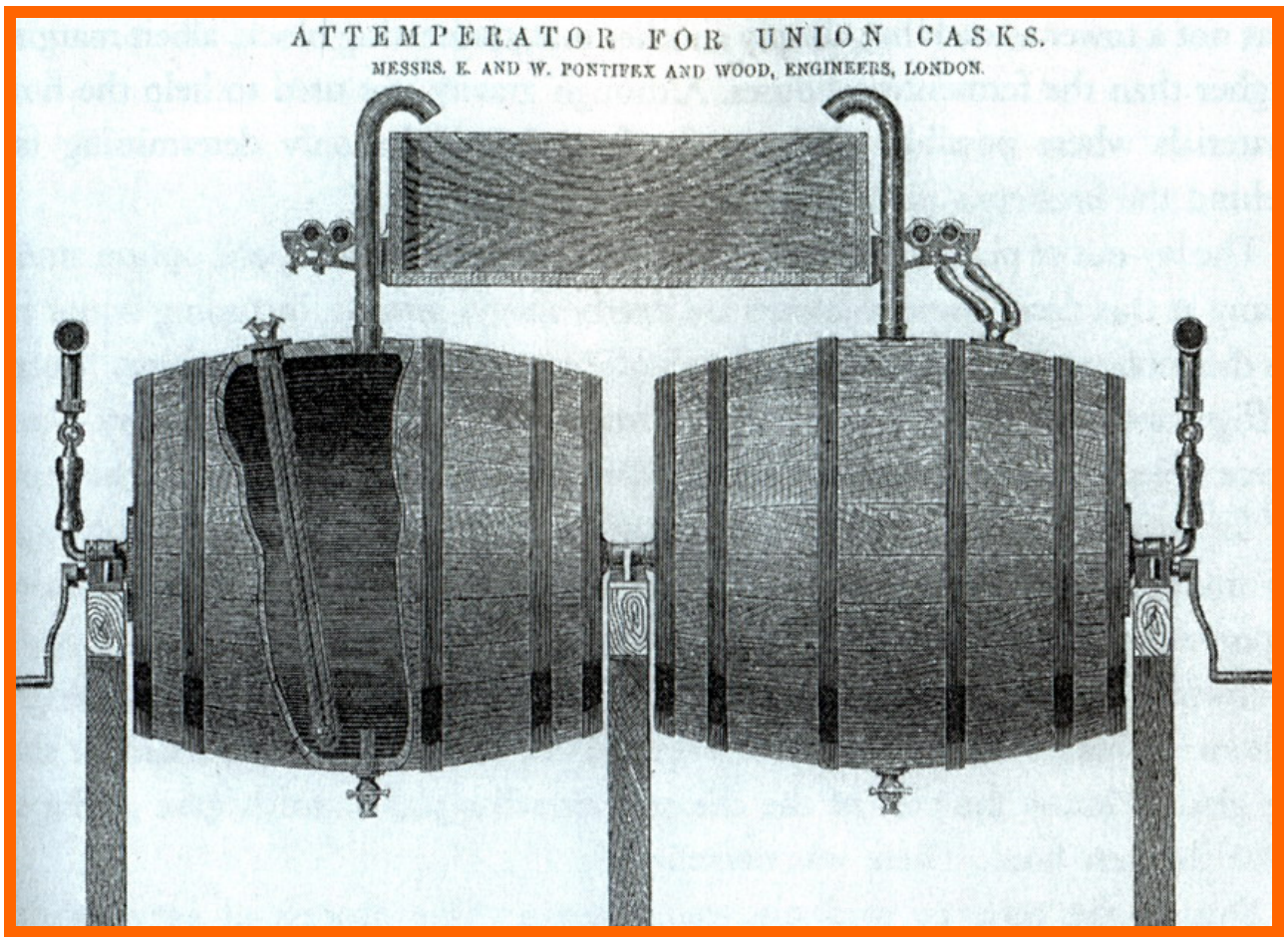
Apparatus for cooling water for refrigerating purposes in a brewery by means of an ammonia absorption machine of the Pontifex-Wood type (WallisTayler)

Advertisement of 1902



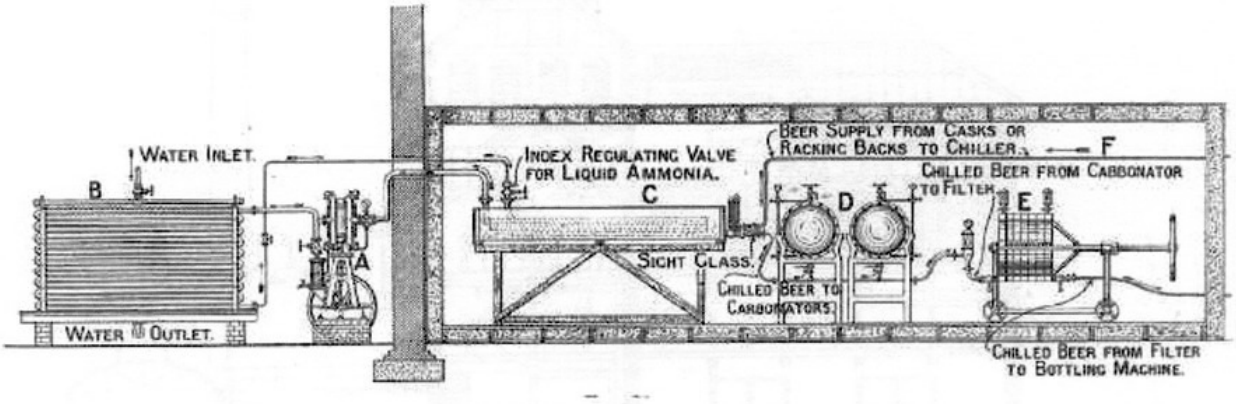
Ammonia absorption refrigerating machine by Pontifex & Wood whose business was carried on by the Haslam Foundry. It is recorded that a similar machine was used for many years at Meux's Brewery having been installed in 1876

("The Mechanical Production of Cold," Sir J A Ewing, 1921: CIBSE Heritage Group Collection, *this copy having been owned by J Roger Preston)*

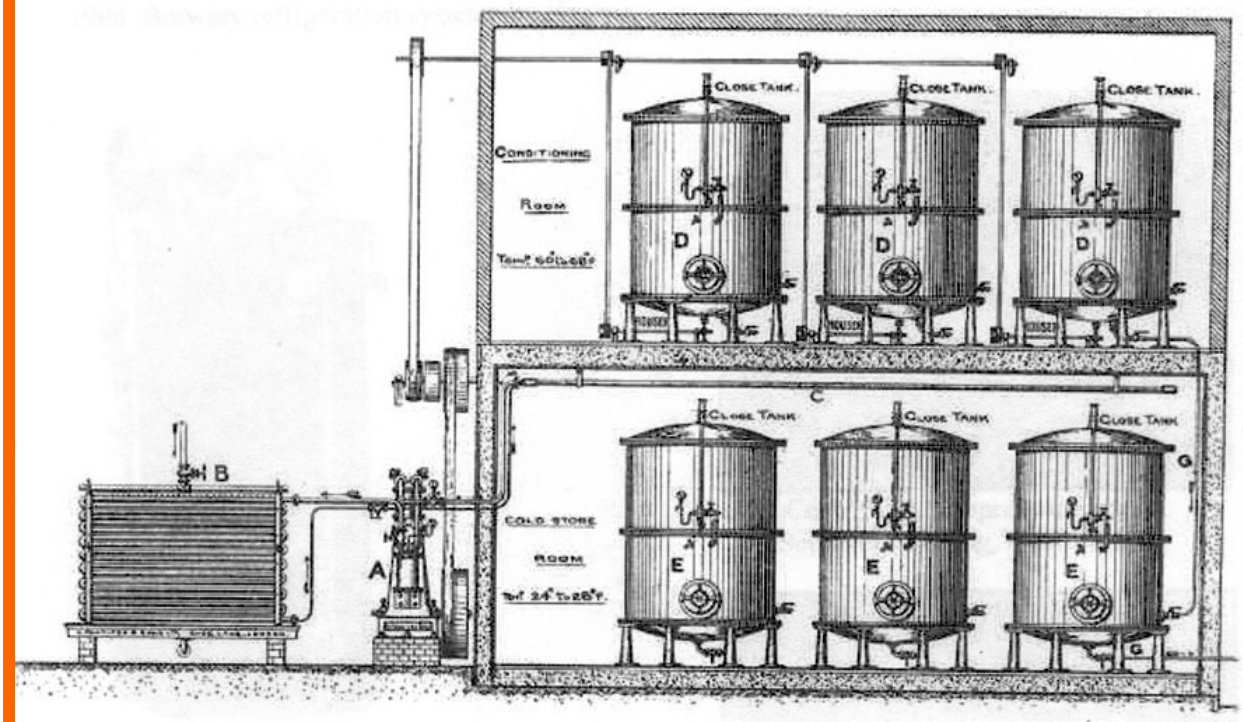


The design of an attemperator for Burton Union casks produced by brewery engineers Pontifex & Wood of London. The attemperator was a system of piping which allowed cold water to be pumped through the wort in order to lower its temperature

(“*Engineering*,” December 1868 from “British Breweries,” Lynn Pearson, 1999)

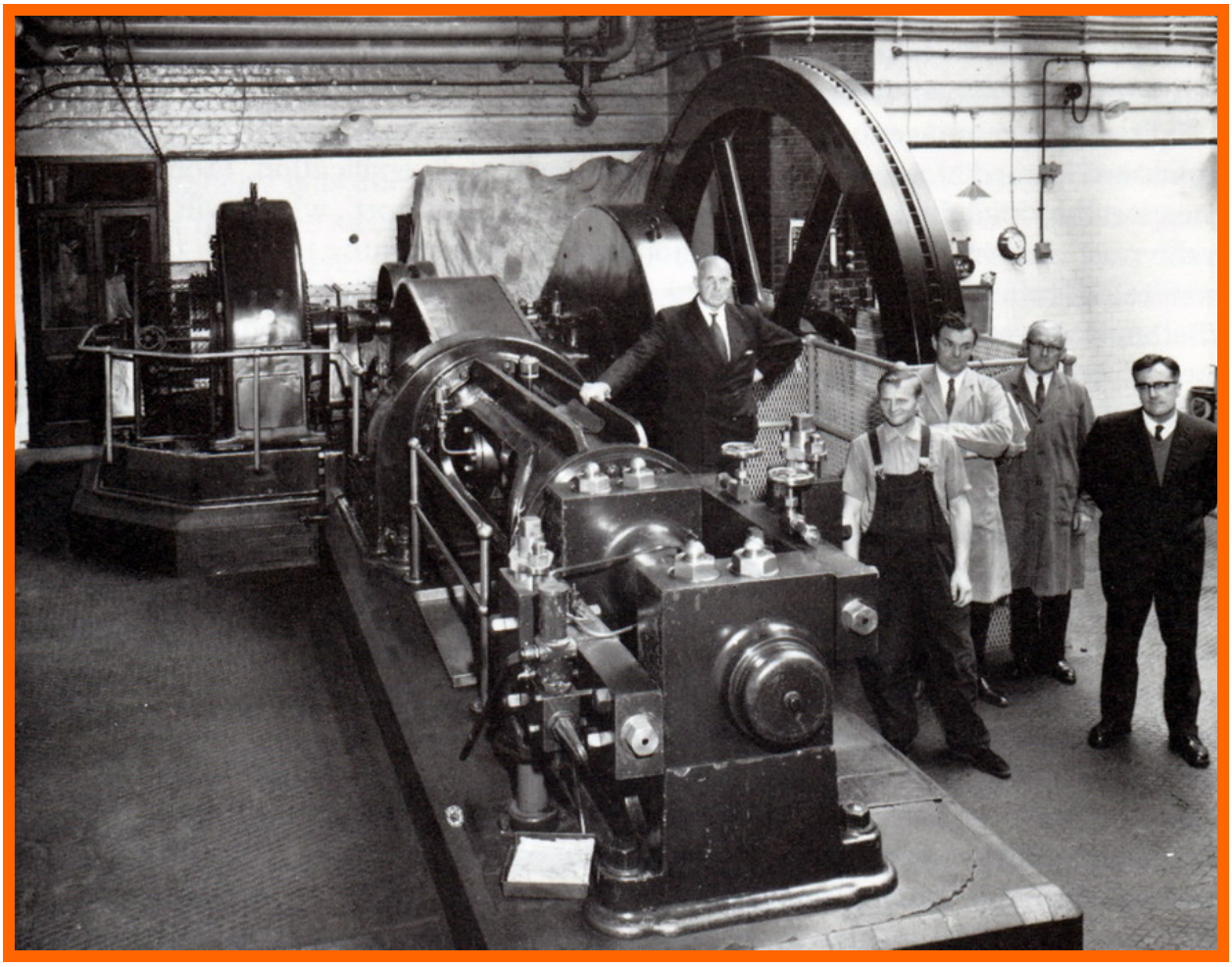


1908 H Pontifex & Sons' RAPID beer-chilling plant
A vertical ammonia compressor **B** ammonia condenser (evaporative type)
C horizontal beer chiller (evaporator)



1908 Pontifex system for conditioning beer and chilling slowly in metal tanks. A small propeller (rouser) is operated intermittently to thoroughly mix the beer

Pontifex ammonia refrigerating plant for rapid beer-chilling, 1908



Two horizontal carbon dioxide refrigerating machines supplied to Truman's Brewery in 1912 for beer processing

("Halls of Dartford 1785-1985," Harry Miller, 1985: CIBSE Heritage Group Collection)