

ALFRED DODMAN AND COMPANY OF KING'S LYNN

By Robert Trett B.A. and D. Winifred Tuck

In the latter part of the 19th and the first part of the 20th centuries the engineering industry in King's Lynn was dominated by the enterprises of three men, Alfred Dodman, Thomas Cooper and Frederick Savage. The Cooper Split Roller Bearings Company, a successor to the Cooper Steam Digger Company, is still a major concern in the town, whilst the Savage Works closed down in 1973 and the Dodman works in 1974. One result of the two closures was that King's Lynn Museum suddenly acquired a vast amount of material relating to the history of engineering in the town, the most spectacular items being a collection of over 20,000 mainly wooden patterns used in the manufacture of Savage's fairground machinery, traction engines, etc.; and a collection of nearly 7,000 works drawings, mostly from the drawing office in Dodman's works.

The work of sorting, identifying and cataloguing the collection will take many years, while at the same time further research into the industrial history of West Norfolk is adding to the museum's records and collections. The museum has been considerably assisted in this work by members of the recently formed King's Lynn branch of the Norfolk Industrial Archaeology Society. Much information has been published elsewhere¹ relating to Frederick Savage, and a great deal more work is still required to build up a comprehensive history of Thomas Cooper's business. Research into the history of Alfred Dodman and Company is still proceeding, and fresh information would be welcome.

According to his obituary in the Lynn Advertiser,² Alfred Dodman was born in the village of Titchwell in North West Norfolk in 1832, his father being described as a farmer. The baptism register at Titchwell shows a number of baptisms of children born to Martin and Eliza (or Elizabeth) Dodman from 1836 onwards, but oddly enough no entry for the baptism of Alfred in 1832. Martin Dodman is described in 1845³ as being a corn and coal merchant at Thornham, and as a farmer at Titchwell. He must have been a man of some substance, since in the 1870s he owned 342 acres with a gross estimated rental of £625/18/-.⁴ This may have been important when Alfred Dodman needed money to establish his own business.

According to the obituary, after the earlier years of his education had been completed Alfred Dodman was apprenticed to Messrs Clayton and Shuttleworth, engineers, Lincoln. He subsequently began a small business as an ironfounder and engineer at premises in Austin Street, King's Lynn; later advertisements by the Company suggest that this was in 1850. There was a brass and iron foundry belonging to Robert Southgate Baker in Austin Street in 1845,⁵ and possibly the young Dodman, newly released from his apprenticeship, took over these works, since by 1854 Baker had moved to premises in Blackfriars Road.⁶

That Dodman soon moved is borne out by documents now at King's Lynn Museum. An agreement dated 8th December 1854 between Charles Willett of King's Lynn, Ironmonger, and Alfred Dodman of Titchwell, Engineer, and witnessed by Martin Dodman arranges for Alfred Dodman to lease for seven years 'all those workshops warehouses and shops with the Countinghouse yards and appurtenances thereto belonging and now occupied by the said Charles Willett

situate in Bakers Lane in King's Lynn. . . abutting on a Dwelling house belonging to the said Charles Willett and in the occupation of Chittleburgh in part and on the said Lane in other part towards the North on premises of Edward Everard and Sons towards the South and East. . .'

The lease was dated from 25th March 1855 for a yearly rent of £70. Dodman also agreed to buy 'The two Steam Engines with all Machinery gearing shafting with forges fixtures fittings stock of materials models tools and gasfittings and all other articles. . . (except the Braziers Tinmans and Gunsmiths tools). . .'

Willett agreed not to manufacture or repair any steam machinery whatsoever during the period of the lease, and Dodman was given the option of buying the premises for the sum of £1,250.

In the Lynn Advertiser for 25th August 1855 appeared the following advertisement:

'Baker Lane Foundry, King's Lynn. A. Dodman Engineer, Iron, & Brass Founder, respectfully informs the owners of steam machinery that he has lately added to his stock, and can supply on the shortest notice gutta-percha driving bands, gauge glasses, india-rubber rings, suction pipes, whistles, cocks, perforated plates and all requisites for this class of machinery.

'Engines repaired and new foreboxes on the shortest notice.

'A Capital Double Purchase Ships' winch for sale 1.A. Bargain. Apply to the above.'

Dodman's lease would have terminated in 1864, and it may have been then that he moved his works to the site of part of the former St. James Workhouse, in what is now County Court Road. The workhouse had been vacated following the collapse of the tower on 20th August 1854, and interestingly enough had been used by Frederick Savage as the site of his works between 1856 and 1860.⁷

Dodman's business must have expanded about this time. The earliest of the Dodman works drawings in the museum collection are stamped 'St. James Works' and relate to agricultural machinery, flour mill machinery, and portable engines. One drawing dated 12th December 1868 shows details 'from Traction Engine No. 1', and another dated 1867 shows the wheel, crank shaft and axle for a railway engine. In the Council Minutes of 12th May 1869 the Borough Treasurer reported 'an application from Mr. Alfred Dodman for the hire of a piece of unenclosed ground at the back of his machine works at St. James Place on the east side of the premises. . .'

In a Committee Report of 19th December 1872 it was agreed to accept Dodman's tender of £150 'for the purchase of the Steam Cranes on the Boal (Quay) and the apparatus connected therewith. . .'

In 1873 Dodman negotiated with the Borough Surveyor to provide the Sanitary Board with a new iron tank with carriage and wheels for the removal of night soil from the town. The Council Minutes for 10th November ordered that the bill from Mr. Dodman amounting to £42-17-6d for an iron tank be paid: this may possibly relate to the sanitary wagon. Also in 1873, two Dodman traction engines were used in a test to show the stability of the newly erected iron girder bridge spanning the river Great Ouse.⁸

Dodman's standing in the town was no doubt raised when in 1874 he was elected Councillor for the South Ward; he remained a Councillor until 1889.

In 1875 the trustees of St. Nicholas Wardens' Estates leased to Alfred Dodman for twenty-years a garden of one acre, two roods, and twenty poles in Gaywood Road, adjacent to Highgate Bridge and the Dock Railway.⁹ Dodman moved his business here, and named the premises Highgate Works. The firm continued as tenants until 1955 when they bought the freehold, and remained there until the works closed down in 1975.

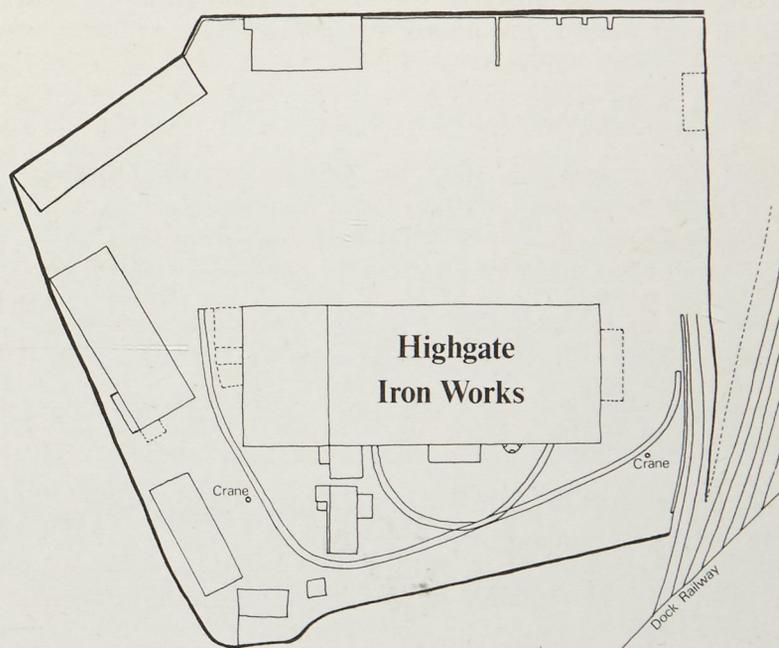


Fig. 1
Highgate Iron Works, Gaywood Road, King's Lynn, from the Ordnance Survey Map 1886; scale 10.56 feet to 1 statute mile (reduced to approx. half size)

On 6th January 1876 the Borough Council agreed to offer Dodman the water supply for his new works, and the business must have prospered, since the works ledgers show a wide range of customers from Britain and abroad. Although the firm undertook many types of engineering work, it developed a speciality in the construction of boilers, and the majority of surviving works drawings before 1940 relate to boilers. Large land boilers of the 'Cornish' and 'Lancashire' type were supplied to hospitals, industrial companies, public utilities, laundries, breweries, and even in 1908 to Edward VII for his estates at Sandringham. Other types of land boilers were specially adapted for burning wood and refuse from mills and sugar plantations, and special 'Colonial' boilers were designed in which the casing was made in sections and could be erected abroad without any skilled labour. Other categories of boilers made included vertical boilers, portable, semi-portable or locomotive type boilers, drilling boilers, multitubular, marine and steam launch boilers. The firm also made a number of traction engines, and it therefore seems strange that in 1877 Alfred Dodman should have seconded a Council motion restricting the use of traction engines and steam locomotives on public highways

within the borough to between midnight and nine o'clock in the morning and a speed of no more than two miles an hour.

The last record of the firm's building for traction engines is in 1915, when the boiler register refers to a steel traction boiler built for C. J. R. Fyson of Soham.

Other types of drawings relate to oil mill machinery, water wheels, waterworks machinery and pumps, machinery for gold mining, winding engines and cranes, oil engines, buoys, and various smaller items, including cast-iron work. The railings in the former cattle market in King's Lynn were made by Dodman, and his name can still be seen in many places in the town on manhole covers.

On 12th May 1881 Patent No. 3042 was granted to Alfred Dodman of Highgate Foundry, King's Lynn, and Nathan Gold Kimberley of Stoke Newington, London, for an invention of 'Improvements in Band Saw Machines'. This was the only successful patent taken out by Dodman, although another patent relating to steam boilers was abandoned in 1904. In view of the considerable enterprise and ingenuity shown by Dodman this is strange, particularly as his business rival Frederick Savage applied for about twenty patents between 1862 and 1896, while Thomas Cooper applied for nine patents relating to steam engines and cultivating machinery between 1878 and 1895, and at a later date for further patents relating to roller bearings, etc.

One aspect of the work of the firm was the training of apprentices. For example, thirty-one apprentices are listed in the firm's ledgers for 1881. An apprenticeship agreement dated 23rd July 1884 between James Codling, aged 21, and Alfred Dodman, provided for James Codling to have further education and improvement in the trade of engine fitter for a term of three years. Dodman agreed to give him a weekly wage of thirteen shillings during the first year, fourteen shillings during the second year, and sixteen shillings during the third year. The wages were to be paid only for actual services rendered and the working hours were to be twelve per day when required.

Another indenture, dated 25th April 1898, provided for the apprenticeship of Ernest William Guyton, aged 16, from 14th March 1898 to 15th February 1903, to learn the trade of fitter. The Company was paid twenty pounds and in return agreed to instruct him as a fitter, and pay him four shillings a week during his first year, five shillings a week during his second year, six shillings a week during his third year, eight shillings a week during his fourth year, and ten shillings a week during his last year. However, his guardian still had to provide young Guyton with food, lodging and suitable clothing, and also pay for any medical attention. The Company had the right to dismiss immediately an apprentice for neglect of duty or misconduct, and could call on him to work overtime. The working hours were fifty-four hours a week, and this could be regulated at the option of the Company.

One of the most interesting of Dodman's jobs was the building of a small 2-2-2 steam locomotive called the 'Gazelle' for William Burkitt, who was twice Mayor of King's Lynn and a wealthy corn merchant in the town. Burkitt was also a director of King's Lynn Docks & Railway Company, and there was a siding running from Highgate Works onto the railway line to the docks. The

locomotive must have been completed by May 1893, since in the daybook for that year is the following entry:

'May 24th.	Extra work to new locomotive 'Gazelle'	
	2 Buffer Beams and alterations	£4 - 15 - 0d.
	New Bright hinges to smoke box door	19 - 6d.
	New door, joints, fastenings, hand rail and step to tender	£5 - 4 - 0d.
		£10 - 18 - 6d.'

It is not possible to show from surviving ledgers how much Burkitt paid for the 'Gazelle', although he is recorded as having paid Dodman £150 in August 1892, and £100 in March 1893, which presumably includes the cost of the locomotive with any other work done for him by the firm. The 'Gazelle' was used as a private railcar on business trips; a journey to Chesterfield on 25th July 1897 is recorded in *The Locomotive* for April 1901. After a checkered career and considerable alterations (including conversion of the wheel arrangement to 0-4-2) the 'Gazelle' was transferred to the National Railway Museum at York in May 1975 and is now on view to the public. According to Ronald Clark¹⁰ an earlier locomotive was built which went to the West Norfolk Farmers' Chemical & Manure Works in South Lynn, and which was last heard of in Australia. Mr. M. G. Greenacre, who worked at Dodman's from 1903 to 1910, wrote in a letter to King's Lynn Museum that a 'Gazelle' locomotive had been used for shunting in the works or yards of the Manure Works. In any case, the building of whole locomotives was only a temporary phenomenon with the firm, although Dodman's did offer a locomotive made by the Hunslett Engine Company for sale for £150 in an undated advertisement probably issued in 1913, and in the same year undertook major reconstruction work on the railway locomotive 'Jack' for J. K. Rodwell of Wissington; and in 1915 the firm made a boiler for the locomotive 'Cordite' for Kynoch Ltd.¹¹

On 8th December 1897 the business was incorporated into a private limited company and became 'Alfred Dodman and Co. Limited'. The objects of the company laid down included the following:

'To carry on the said business, and generally the trades or businesses of Agricultural and General Engineers, Millwrights, Iron and Brass Founders, Boiler-makers, Marine Engineers, Boat Builders, Shipwrights, General Smiths, Wood Workers, Machinists, Electrical Engineers, Contractors, Gas and Water Supply Engineers, Merchants, Steam Engine, Tool and Implement Manufacturers, in all their respective branches and whether as patentees, licensees, or otherwise; and to purchase, or hire and sell, wholesale or retail, or let on hire, any articles or things used, manufactured, or dealt with, in any of the above-mentioned trades or businesses, or relating thereto.' This together with several other clauses appeared to give the company the necessary scope for their future operations.

The capital of the company was £14,000 and the subscribers and shareholders were Alfred Dodman, his wife Mary Elizabeth Dodman, Alfred Henry Crisp (described as Secretary), James Smith of London (also described as Secretary), Charles Cousins of Lincoln, Charles Duckering of Lincoln, and William Neale Turner of Ipswich (all described as engineers).

On 8th March 1902 the Director of Army Contracts wrote to Dodman & Co. placing them on the list of persons to be applied to for tenders for the supply

of small land and marine boilers. On 10th June in the same year the Admiralty wrote placing the company on their list of contractors, and on 28 August 1905 the Crown Agents for the Colonies added Dodman & Co. to their list of contractors. The company was very proud of these and other letters which were reproduced in their catalogues, and the originals displayed in frames in the offices of Highgate Works.

About this period the company was very involved with pumping machinery, in particular with the replacement of old beam engines and scoop wheels used for fenland drainage with high pressure steam engines driving centrifugal pumps. Another major project in which they were the contractors was the extension to the Wisbech Water Works pumping station at Marham, in 1908. Although the large pumping engines were later replaced, much of the machinery and small engines for generating electricity were in use until the old pumping station ceased operations in 1976. The company also constructed the large water tower at Friday Bridge, Wisbech, during 1893 and 1894.

Alfred Dodman died on 13th December 1908 at his house in London Street, Swaffham. According to the Lynn Advertiser, he had been suffering from a troublesome kidney complaint. The obituary recalled that 'At different times he lived at Lynn (Sunnyside, The Chase), Lee, East Dereham, and finally for a number of years, at Swaffham.

'Mr. Dodman married Miss Mary Elizabeth Slator, a sister of the late Mr. J. W. Slator, engineer, King's Lynn. There has not been issue of the marriage.

'He had been for a long time a Justice of the Peace for the County of Norfolk, very often sitting as a member of the Swaffham bench. . . A member of the Norfolk Court of Sewers and one of the King's Lynn Municipal Charity Trustees, he was recently elected chairman of the latter body in succession to the late Mr. T. E. Bagge of Gaywood Hall. Mr. Dodman was of a retiring disposition. He showed great kindness, and will be much missed in Swaffham.'

He was buried on 18th December at Titchwell. The church was filled with mourners and among the many wreaths were some from the employees at Highgate Works.

On 9th February 1909 probate of his will and three codicils were granted. He left £21,883-18s-8d, no mean fortune at that time, the chief beneficiaries being his wife, who took a life interest in his shares and investments, and Alfred Henry Crisp who, subject to his still holding a position in the company, was to inherit one thousand of the shares of the company on the death of Mrs. Dodman. Among the other legacies was £300 for the West Norfolk and Lynn Hospital.

The company continued to prosper under Mr. Crisp's management, although in 1913 the Lynn News recorded a serious fire at the works which occurred on Saturday 15th November. The fire demolished the stores and the valuable wooden patterns, of all conceivable kinds, some dating back to the time the foundry started. Fortunately, practically all the drawings were saved, and a number of patterns still in use were remade.

Dodman and Co. continued to develop new themes, including the design of a steam wagon in 1914, although it seems likely that this never got much further than the drawing-board stage. This may have been because of pressure of contract work after the outbreak of the first World War, although steam wagons were at this time giving way to motor lorries.

Wage books surviving for the 1920s and 1930s show the work force was about seventy or eighty, varying no doubt with the prosperity of the company.

In 1931 the firm of E. S. Hindley and Sons, of Bourton in Dorset, was taken over by Dodman and Co. The Bourton Foundry had its own long history. The business was started in about 1750 by Daniel Maggs as a linen mill worked by water power.^{1 2} A blast furnace and foundry was later set up and over two hundred people employed. The works were partly run by a huge water wheel, which according to their own advertisements was built in 1837 and was claimed to be the largest in England. The company manufactured steam engines and boilers, hoisting engines, vertical gas engines, oil engines, etc. Following the owner's death all business was moved to Dodman's works in King's Lynn and some of the workers moved as well. This seems to have been a good arrangement for Dodman and Co., as Hindley designs and machinery were incorporated in their own range. The Hindley high-speed vertical steam engines for driving high-speed machinery (in particular for dynamos for electric light and power production) were especially successful, and these 'Dodman Hindley' engines were among the machines still in use at Marham pumping station in 1976.

After the death of Crisp in 1936 Robert Forster took over the company, which continued to operate along the same lines. During the second World War the company undertook more Admiralty contracts. The late Richard Forster, one of the sons of Robert Forster, wrote a letter to the authors in 1975 in which he said, 'I was on the vessels at the time. Many ships had complete refits (overhaul and additions). Main engines, generating sets, pumps, winches, depth charge chutes. . . were fitted.

'A Ship anchored off the Norfolk coast near Brancaster was fitted as ready for sea. This was used for missile practice by the R.A.F. At low tide the ship was on a sand bank and steel plates which had been bolted on the hull were removed. Pumps were coupled up, and the sea water pumped out, so the vessel would float on the next tide. The whole operation was repeated a number of times.'

Another wartime project undertaken by the firm was the refitting of a captured German Motor Vessel, which was renamed 'Melanie'. Sea trials were carried out with Dodman's men aboard.

After the war Dodman and Co. continued to manufacture and repair boilers, and even had customers in India and the Persian Gulf. They also started to manufacture food processing and canning machinery. This side of the business rapidly increased in importance, and according to former employees the company enjoyed its greatest financial success at this time. In its latter years the company gave up producing a standard range of industrial packaged boilers, although they still undertook the repair and rebuilding of existing boilers, and they decided instead to change over to the design and manufacture of pressure vessels, heat exchangers and storage tanks mainly for the petro-chemical and North Sea industries. In 1972 the company decided to change their trading title from 'Alfred Dodman & Co. Ltd' to 'Dodman Engineering Ltd' in order to illustrate the new nature of their business, and it was also planned to move the works to new premises on the Hardwick Industrial Estate, King's Lynn. Unfortunately financial problems forced the company to cease trading in 1975. The site was sold to the West Norfolk District Council, and most of the machinery was sold to the BEAD Engineering Company in North Lynn. BEAD had been established by former employees of Dodman's and the new company have in many ways taken over

Dodman's business and role. Strangely enough, at the time Dodman's were closed down, they had in their works for repair a locomotive boiler belonging to the North Norfolk Railway Company, and an old Collings Steam Motor Tractor of 1910, made at Bacton in Norfolk and belonging to Mr. R. H. Clark.

By 1975 parts of the works were very elderly and badly in need of repair. The site was visited and recorded by staff from King's Lynn Museum and members of the Norfolk Industrial Archaeology Society. The foundry had been out of use since approximately 1945, and the railway sidings, which had been used both for the bringing in of raw materials and the despatch of some of the larger machinery, were also closed down. The most noticeable feature of the works is still the Rivet Tower. Boilers could be hung up inside the tower, and then swivelled round so that the end plate could be attached, rivet by rivet, by a fixed rivetting machine on the ground. Apart from a sixty ton hydraulic press and a few other items, the works were stripped of machinery in 1976 and left derelict. They were demolished for redevelopment in June and July 1977.

Dodman's were not as large or as famous as other Norfolk engineering concerns such as Savage's, or Burrell's of Thetford, but they did cover a wide range of engineering over a considerable period. It is certainly important that so many of the works drawings survive and will be available for study, not only by traction engine and railway enthusiasts, but by many other types of engineering and industrial historians. In particular, material relating to fenland drainage and marine boilers is likely to prove of great interest.

We would like to express our thanks to the BEAD Engineering Company for allowing the drawings to come to King's Lynn Museum, and also to Mr. Anthony Beaumont for listing and describing 6,316 of them. Thanks are also due to many others, in particular to a number of the former staff of the firm, who supplied us with information and material, and who seem to retain a great affection for Dodman's.

Source material and bibliography

Many of the surviving company records are mentioned in the text. The works drawings in King's Lynn Museum cover the period from 1867 to about 1940. There are also copies of selected drawings of later years, but most of those surviving date from 1880 to 1920. Unfortunately the majority of the traction engine drawings are missing from the collection. Mr. R. H. Clark spent a considerable time researching the traction engines made at Dodman's and he has produced a series of his own drawings of the different engines made by the company. Many of these drawings are reproduced in Mr. Clark's books and now provide most of the information available on the details of these machines. The surviving registers of engines dating from 23rd June 1914 are now in the possession of BEAD Engineering, who kindly allowed the museum to make photocopies of the earlier part.

Ledgers covering the period 1879 to 1930 were rescued by museum staff after the empty works were vandalised. Although these list most of Dodman's customers during this period, and the payments made, they do not supply details of the goods or services provided. However, a series of day books covering the period 1893 to 1923 provides fairly detailed descriptions of repairs and work carried out at the works. The names of customers are also recorded on many of the works drawings and in surviving correspondence and testimonials.

The museum has copies of two boiler catalogues dating from the 1890s and other literature and advertisements, mainly of a later date. Mr. R. H. Clark also kindly allowed the museum to make copies from original works negatives of Dodman traction engines, which he has in his possession. Photographs in the works were copied by the museum, and other original material has been presented to the museum from various sources.

March 1977

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 'Some Lesser Known Traction Engines'. *Engineering* 4th June 1948
 'Traction Engines Not So Well Known'. *The Model Engineer* 21st July 1949.
- Road Locomotive Society *Special Portfolio No. 21. Alfred Dodman*
 References to Dodman engines in *The Engineer* vol. lxxvi p. 23 and vol. lxxvii p. 562.

Abbreviation:

KLM: Norfolk Museums Service, King's Lynn Museum

¹ See David Braithwaite, *Fairground Architecture* (Hugh Evelyn, London, 1968) and *Savage of King's Lynn, Inventor of Machines and Merry-go-rounds* (Patrick Stephens, Cambridge, 1975); also Ronald H. Clark *Savages Limited: A Short History 1850-1964* (Modern Press, Norwich, 1964). Many other articles and books mention the firm, but are too numerous to record here.

² 19th December 1908 (from press cuttings KLM).

³ William White, *History, Gazetteer and Directory of Norfolk* (1845).

⁴ List of landowners for the county of Norfolk (KLM collections).

⁵ William White, *op. cit.*

⁶ Francis White & Co., *History, Gazetteer, and Director of Norfolk* (1854).

⁷ Manuscript history of Frederick Savage and family written by William Sparkes from information given by the Savage family, 1893-1899 (copy in KLM collections).

⁸ Manuscript records 'The Freebridges of Lynn' by D. W. Tuck.

⁹ Information from documents in the possession of the Trustees of St. Nicholas Wardens Estates.

¹⁰ R. H. Clark, *A Short History of the Midland & Great Northern Joint Railway* pp. 174-5.

¹¹ Information from the company day books.

¹² Information from D. Moore, *Footsteps from the past; Bourton - A Dorset Village* (privately printed, 1968); also from *E. S. Hindley & Sons: Catalogue of Vertical Gas Engines* (from a copy in KLM collections) and various advertisements produced by the firm.



Plate I
Alfred Dodman
Norfolk Museums Service

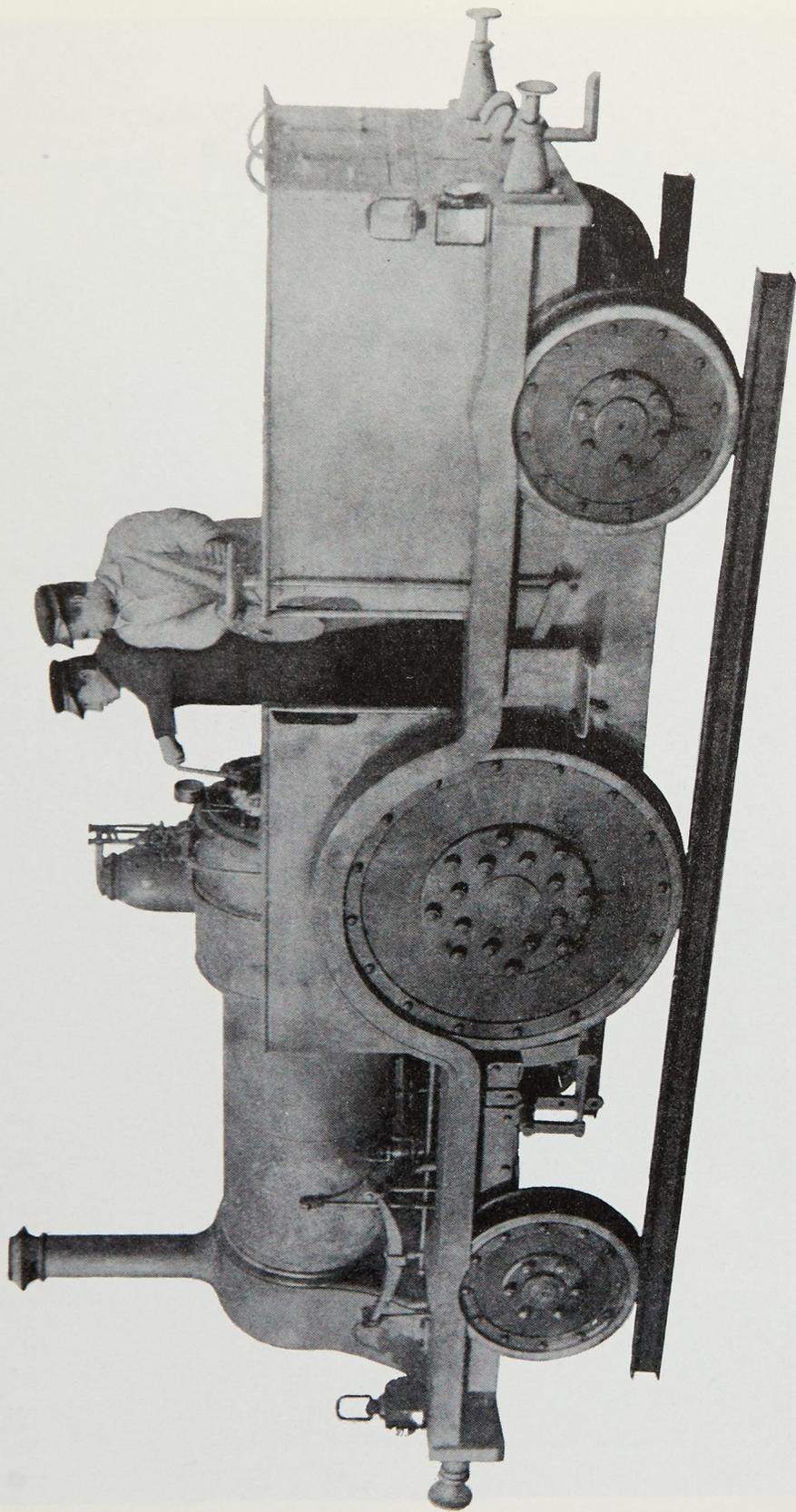


Plate II
'Gazelle' railway locomotive c. 1893
Norfolk Museums Service

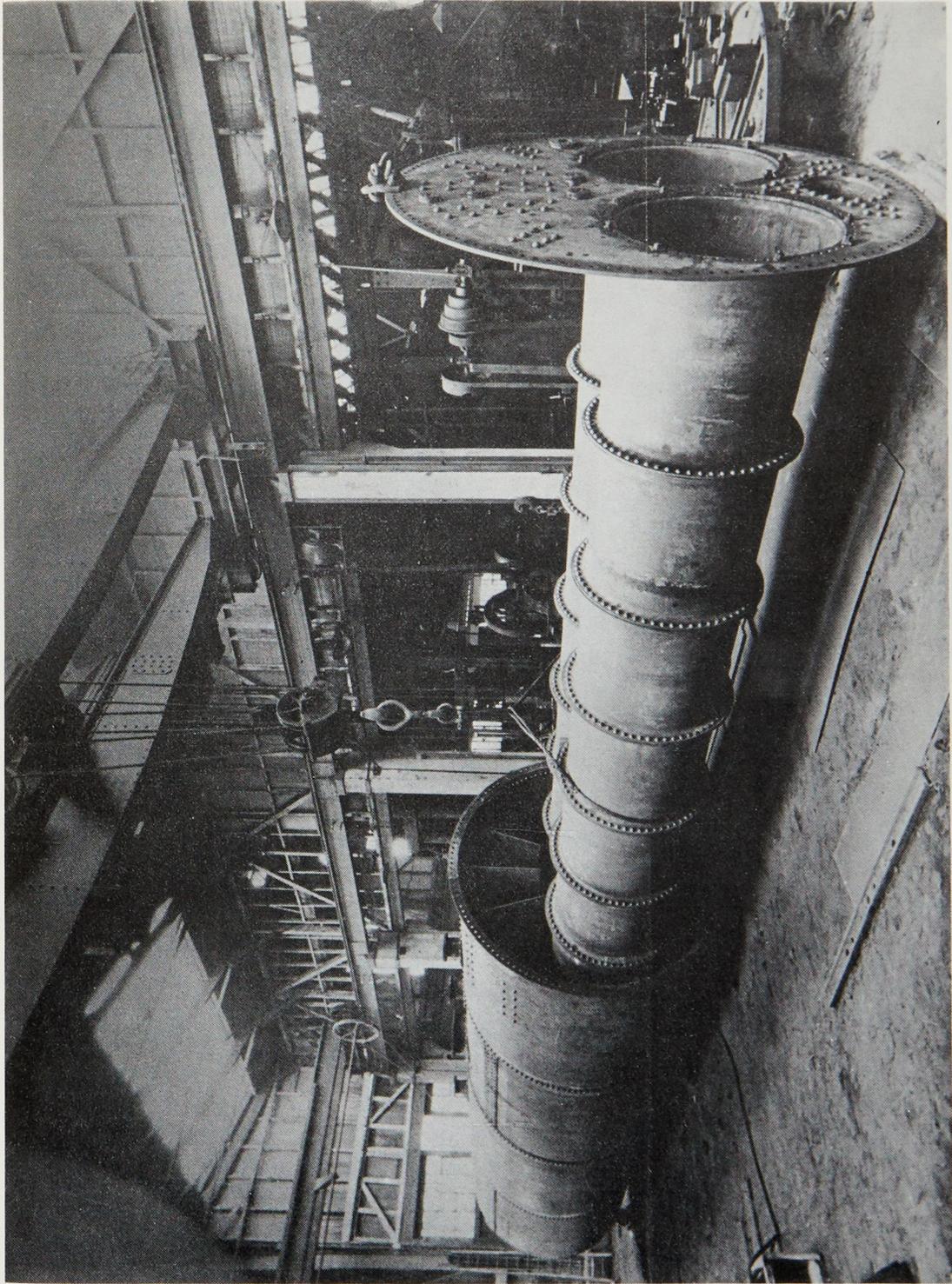


Plate III
A 'Lancashire' type boiler under construction at Highgate Works
Norfolk Museums Service