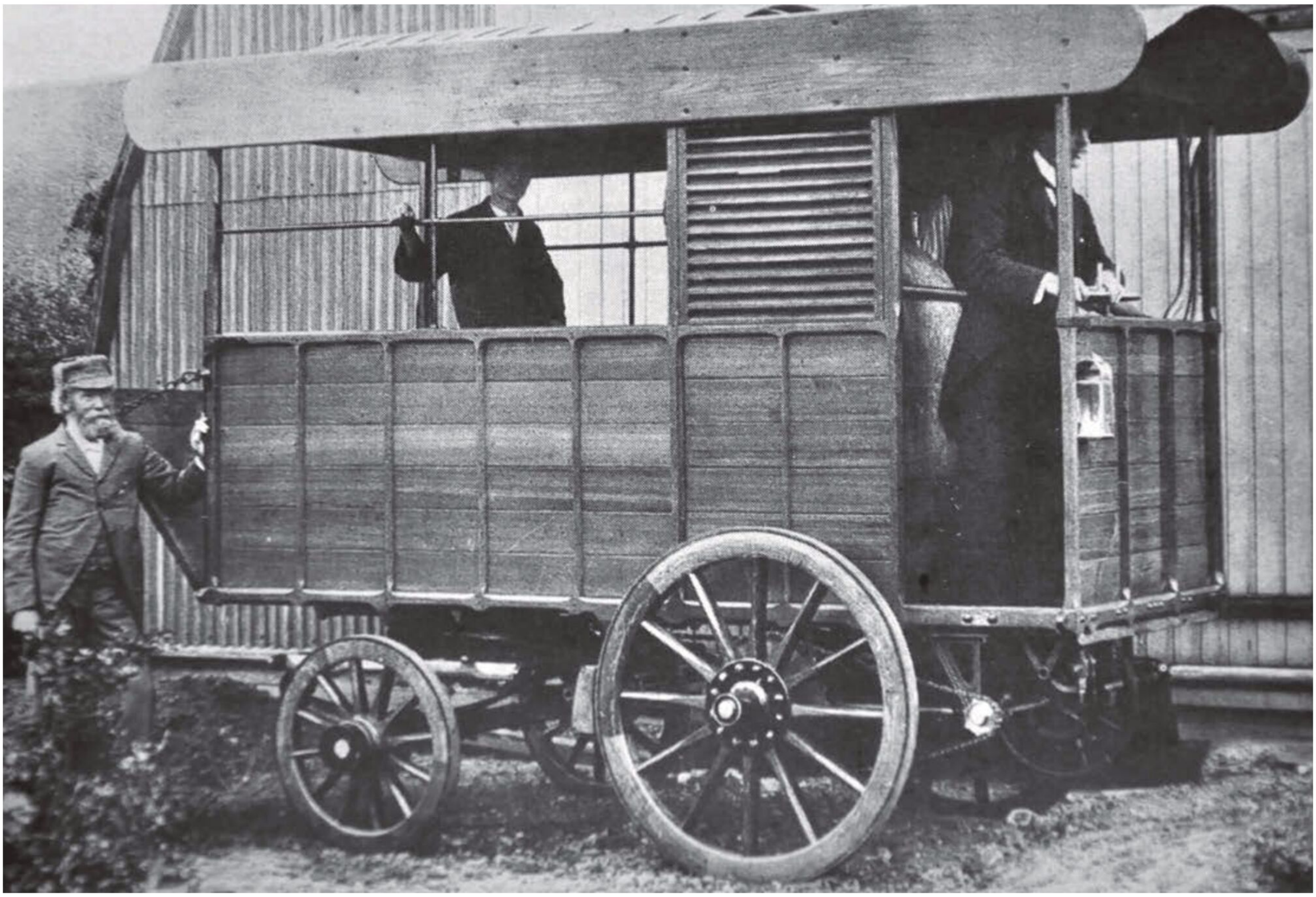
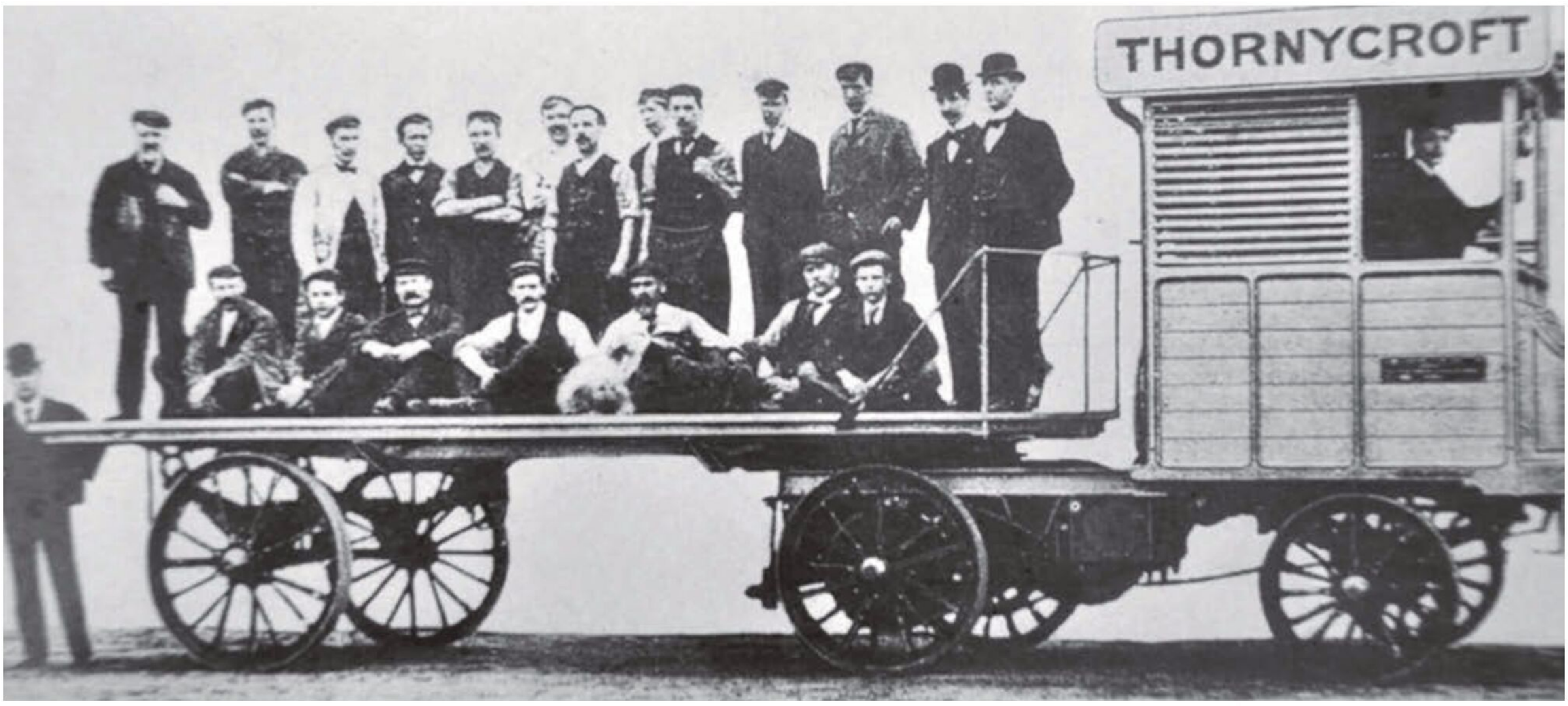
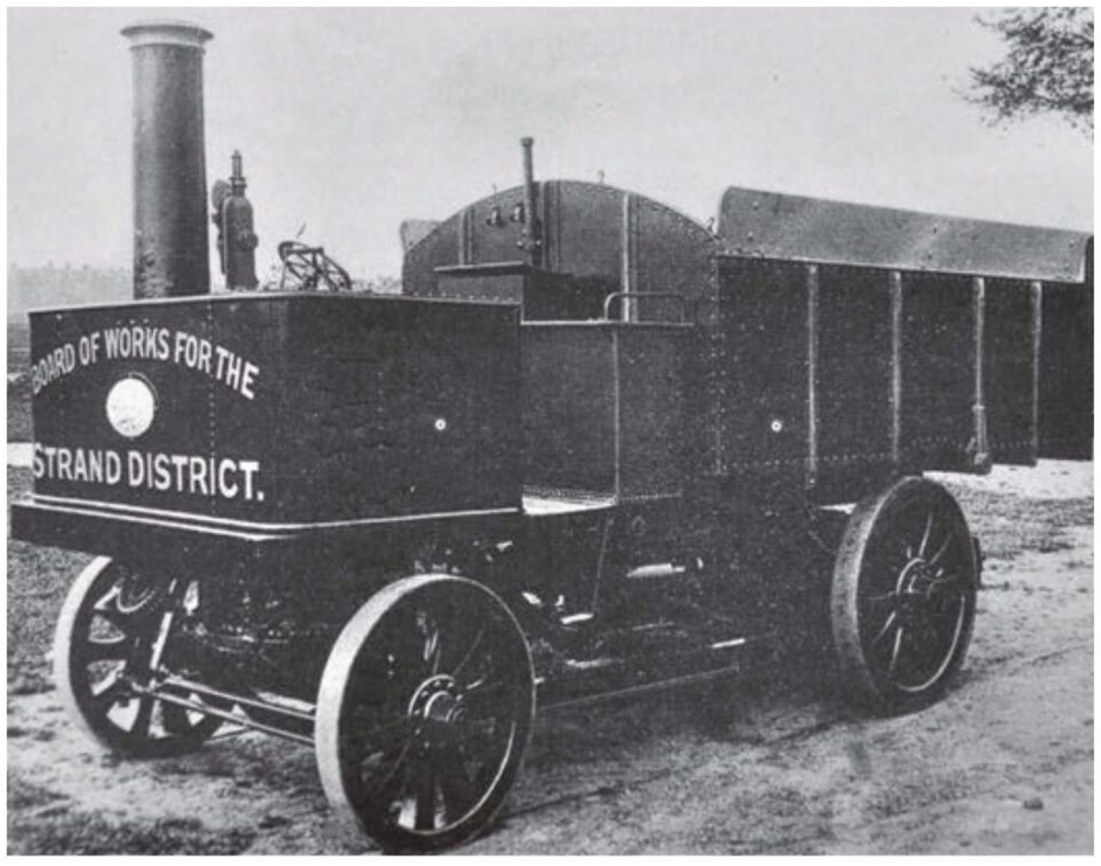


Thornycroft No. 1. This 1-ton van, built in 1896, was the company's first venture into the newly-emerging commercial vehicle business. Heavy gears and chains were just not available, hence the very frail-looking chain drive to each front wheel. The steering operated on the rear wheels. John Thornycroft stands to the left of the photo, little realising where his experimental wagon would lead his company.

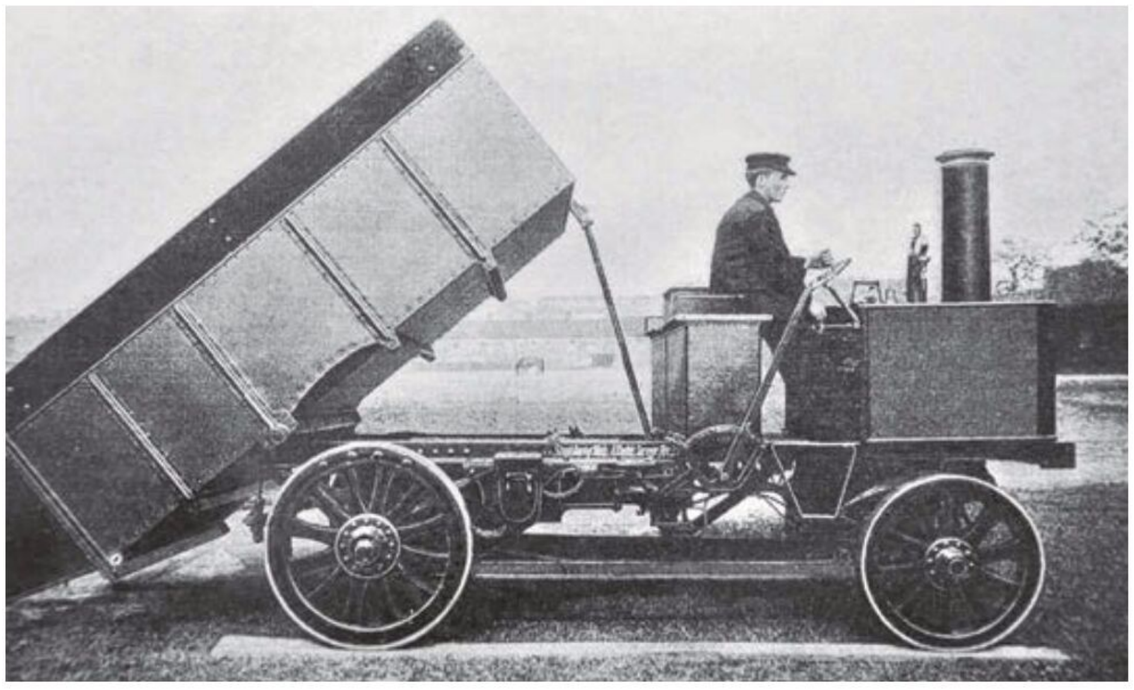
Thornycroft Steam Wagon Co Ltd
London & Basingstoke, Hampshire



Thornycroft articulated steam wagon of 1898, taking part in the Liverpool Trials of that year where it received a major award.

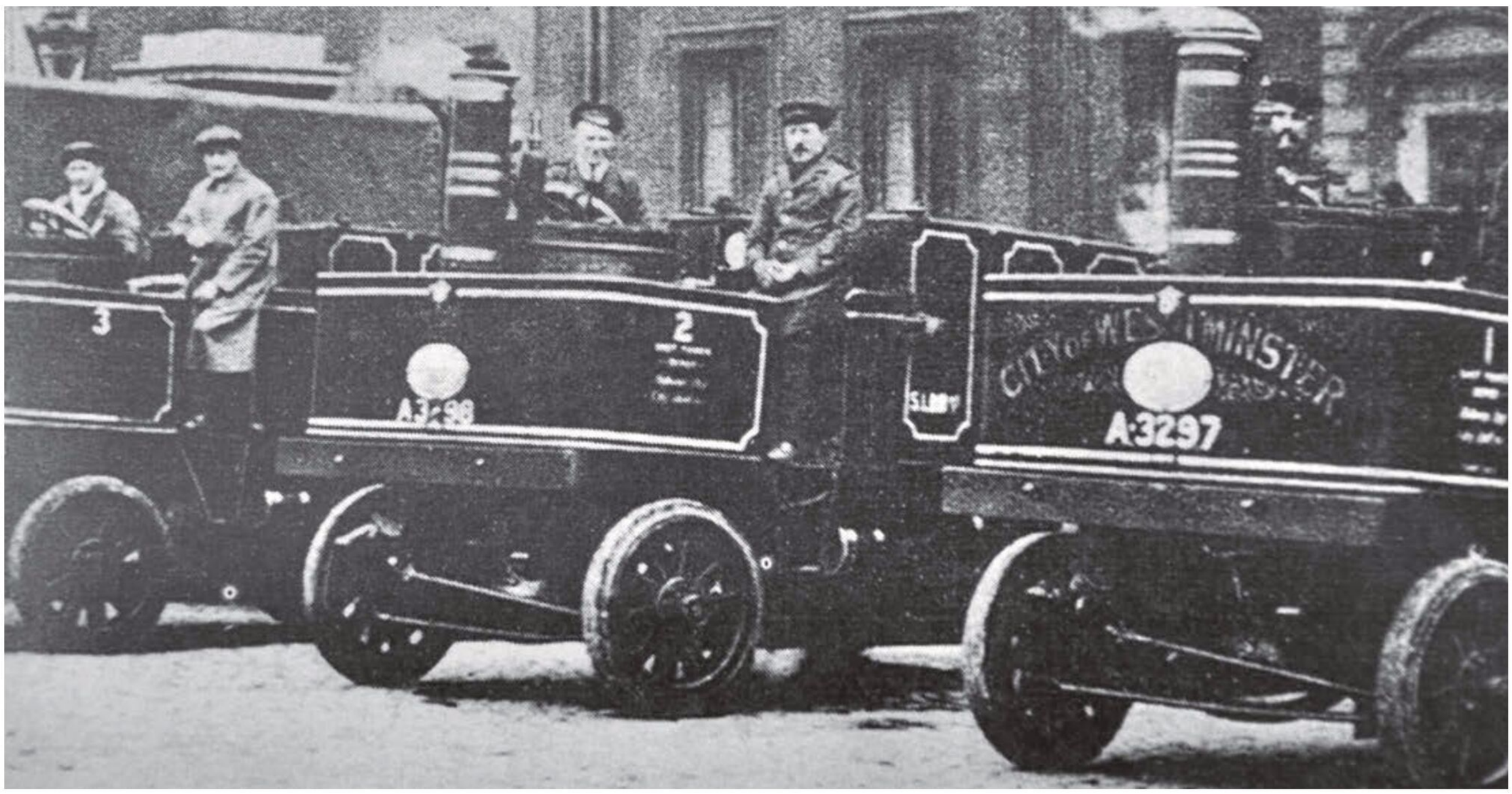


Thornycroft tipping wagon No. 11, built in 1898 for the Strand District Board of Works in London. The body turned upon a transverse pivot and was easily raised or lowered by hand by means of the screw seen at the front. The body was of fairly light construction and could be easily removed altogether and replaced with a water tank for street sprinkling.



Another view of No. 11. It was noted in the press of the day "That this wagon may be observed almost every day at work amongst the busy London traffic, sometimes with and at other times without a trailer. There is rarely any visible exhaust of steam or smoke and horses take little notice of it".

BELOW: No. 11 had, by 1904, received the registration A 3297 and was to be seen now under the wing of the City of Westminster Cleansing Dept. From left are wagons No. 44 of 1900 (registered A 3299 in 1904); No. 43 of 1900 (registered A 3298 in 1904) and No. 11.



When John Isaac Thornycroft (later Sir John) founded his company in 1864 to promote his marine activities, he could have had little concept of the way his company would develop.

The firm's reputation was established in 1871 when their steam launch *Marina* reached the unheard of speed of 18 knots whilst on trial. As a result, they became world-famous for the building of fast vessels for both naval and commercial use.

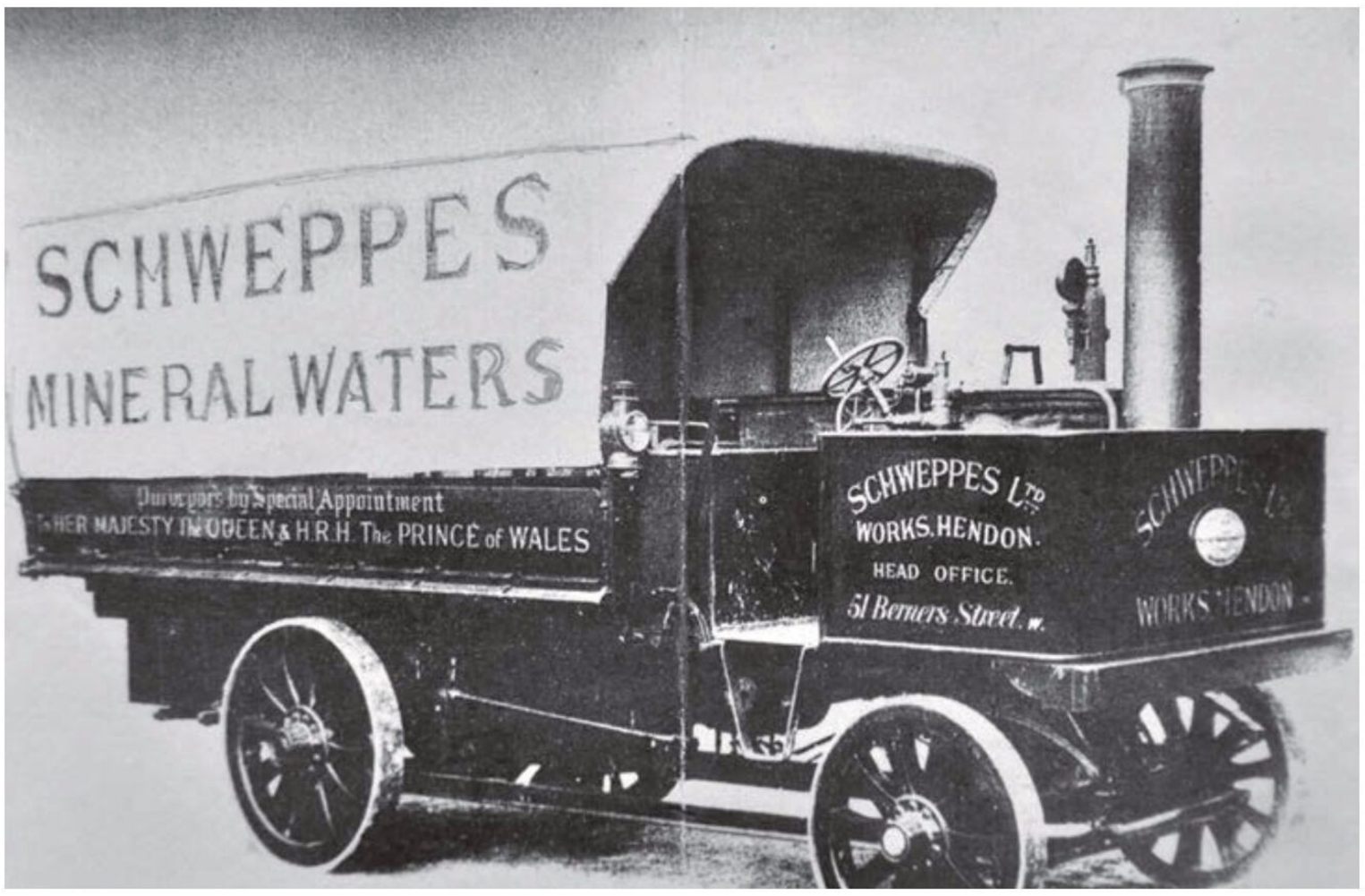
By the middle of the 1890s, John Thornycroft could see the possibilities offered by mechanically propelled wagons (as could many others) but it had always been considered that the railway network was more than adequate for this purpose with its horse-drawn drays delivering the parcels locally to their final destination.

However the country was slowly coming to realise the advantages of this new form of transport.

By 1895 John Thornycroft and Colonel Niblett (who was later to become works manager at the Basingstoke works) had successfully built their first experimental wagon, a 1-ton van, which was constructed in such a way as to look as little like a steam vehicle as possible. Against all the odds, this pioneer vehicle is still with us today. A Thornycroft watertube boiler was utilised, providing steam at 150psi.

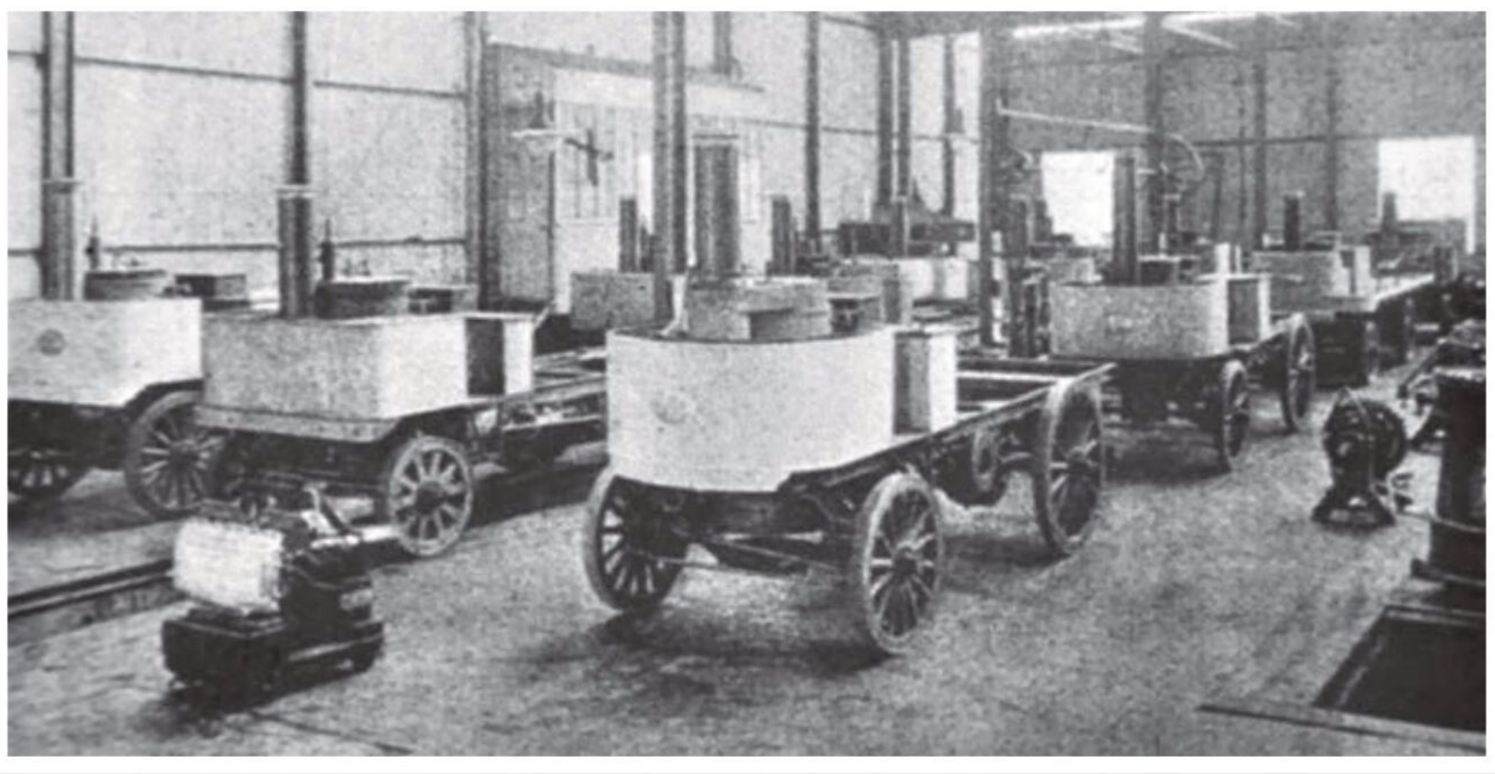
Frederick Strickland of Teddington, who was to be responsible for the design of the later Thornycroft engines, designed the engine, a vertical twin tandem compound. Boiler feed water was supplied by a pump driven off the engine whilst the fuel bunker carried 2cwt of coke. The overall length of the vehicle was 11ft with an all up weight of 30cwt.

Around this time Thornycroft decided to form a separate company to embrace their steam vehicle operations and 'The Thornycroft Steam Wagon Co Ltd' existed



Thornycroft 3-ton wagon No. 14, built on March 27, 1899, with tilt cover in the employ of Schweppes Mineral Waters of Hendon, Middlesex. It spent all its working life here and was registered H 1910.

An early Thornycroft wagon fitted with a bus body. A trial was jointly undertaken with the London Road Car Co Ltd, operating between Hammersmith and Oxford Circus. The service operated at a considerable loss and didn't survive very long.



Thornycroft wagons under construction at the Basingstoke factory c1900. It was obviously posed as there is no clutter lying around.

until 1904, when it was absorbed by John I Thornycroft & Co Ltd.

As the company later pointed out, at the time of building this vehicle, many of the parts were necessarily very heavy as high-tensile steel had yet to be invented.

Rubber tyres were not readily available and castle nuts had to be specially made due to the need for nuts to be locked to cope with vibration. The only sprocket wheels on the market were basically those used in the cycle trade and with nothing suitable being available for No. 1, it was a case of making the parts that were needed. A strange feature of the design was that the steering operated on the rear wheels.

From 1899, Thornycroft wagons were basically all very similar but varying in weights and dimensions. So a description of the 4-ton wagon thus covers most of the vehicles being built until the arrival of the later designs in 1905/6. The engine was a two-cylinder compound with cylinder bores of 4in and 7in and a stroke of 7in. It was fitted with constant lead radial valve gear and was located on the nearside of the vehicle, just forward of the rear axle.

The crankshaft, or first motion shaft, extended across the vehicle and on the end of it was fixed the flywheel outboard of the mounting bracket, which was secured to the chassis frame. On a square length of this first motion shaft, the high and low speed pinions could be slid in or out of engagement with larger gears on the countershaft. The drive was transmitted via two universal joints to a small pinion that meshed with a large crown wheel on the differential casing of the back axle. This final drive featured double helical teeth.

The sliding pinions on the first motion shaft were operated by clutch handles with forked ends embracing collars on the pinions and moving on a slide bar with locking pins to keep them in the required position.

The counter shaft (or second shaft) was made in three parts, connected by two enclosed universal couplings. Whilst the bearings for this shaft on the offside were carried on the chassis frame, the nearside bearing was carried by a triangular-shaped bracket supported on the axle. Since the offside was spring-suspended and the nearside was practically carried on the solid axle, there was a certain amount of play to be taken up between the two; the arrangement of splitting the countershaft with two universal couplings permitted flexing to the full extent.

The boiler was of the Thornycroft water tube type and consisted of two annular

chambers connected by 168 seven-eighths of an inch diameter tubes which were only expanded into each, there being no screwed stay tubes. Both top and bottom ends of the boiler had removable end plates that permitted cleaning and inspection of the tubes.

The top cover carried the steam dome from where the steam supply was drawn. The boiler's working pressure was 200psi – one safety valve which exhausted into the smokebox was set at 210psi whilst the second, of the 'pop' type, went off at 230psi.

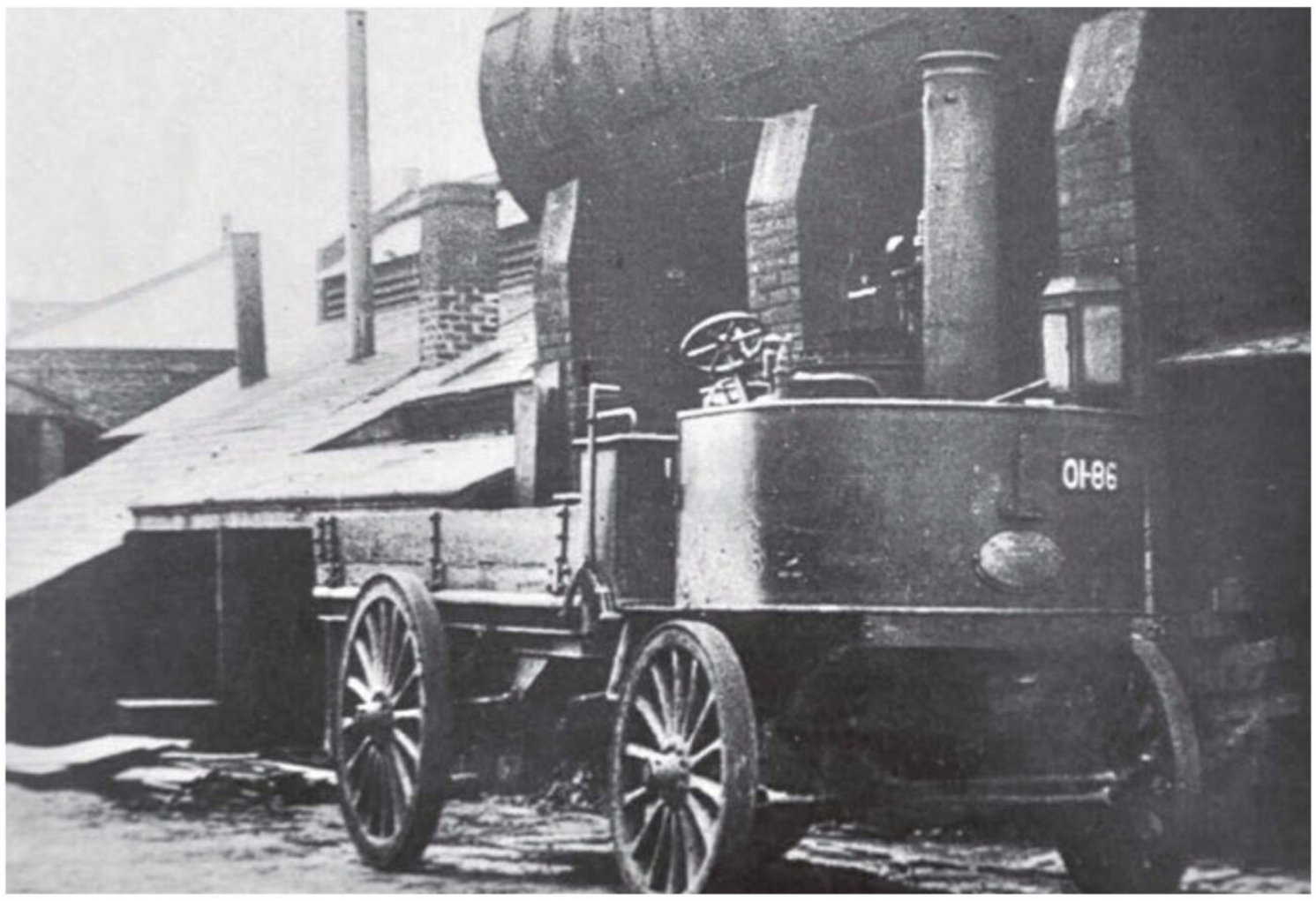
Feed water was supplied by means of a pump driven by a worm on the crankshaft, the pump being mounted beneath the cylinders of the engine. One injector of the self-lifting type was also fitted.

The diameter of the front wheels was 3ft x 7in wide, the rear wheels being 4ft x 10in wide, with the steering being of the Ackerman type. The rear water tank carried 179 gallons and that, with the top tank under the driver's seat, gave a range of 25 miles but sufficient coal could be carried for 50 miles.

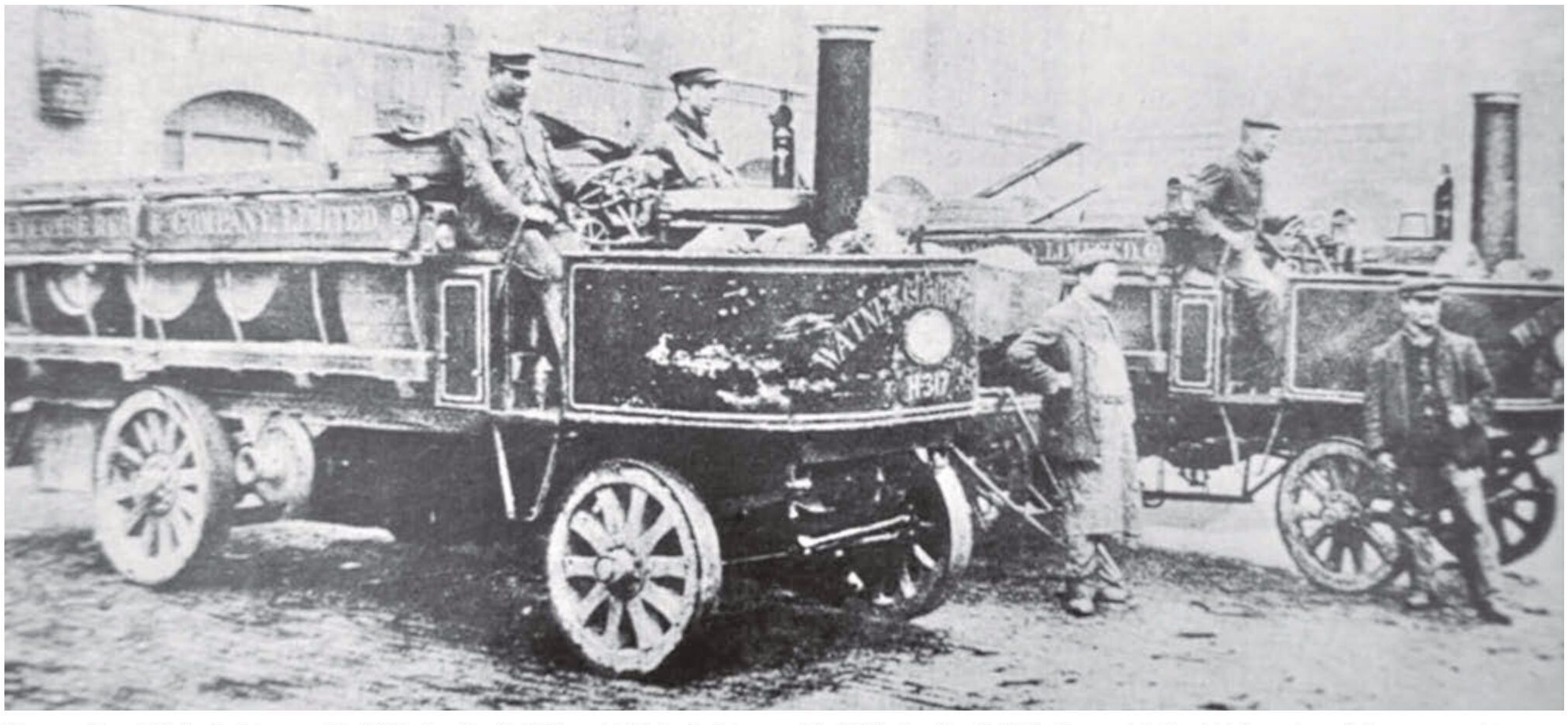
So how many steam vehicles did Thornycroft manufacture? With all of these early builders it is nigh on impossible to come up with an exact figure but looking through the records that do exist I would think a number of between 380 and 425 wouldn't be too far off the mark.

Production of steam vehicles ceased in 1907, after they'd built their first internal combustion vehicle in 1902. They then concentrated with good effect on their range of petrol and paraffin vehicles. ■

A Thornycroft 3-ton wagon possibly on a demonstration run and reputed to be in the area of 'Bexley Mill'.



Possibly wagon No. 105, built in February 1902 and sold to the Belfast & Northern Counties Railway. In July 1903 the company became the Midland Railway (Northern Counties Committee) – note the Irish registration of 01-86.



Wagons Nos. 165 (built February 13, 1903, Reg No. H 317) and 163 (built February 20, 1903, Reg No. H 315). Along with No. 164 (not shown) they were sold to brewers Watney, Combe, Reid & Co Ltd.