

K P G Co

1878-1955

A5 FEINT

Kildwick Parish Gas Co.

Copy of article published in the "Keighley News"
dated. Sat. Nov 19th, 1955.

KILDWICK GAS WORKS TO CEASE PRODUCTION.

INTERESTING HISTORY GOES BACK 80 YEARS.

Boards of directors have always been local men.

Under the scheme, now nearing completion, for the re-organisation of the production and distribution of gas supplies in the Keighley and Bingley areas, Kildwick Gas Works will cease production and will be used only as a storage station for gas.

The history of the works is an interesting one. In the 1870's the Kildwick Parish Gas Company was authorised by Statute and it remained in being until the nationalisation of the industry when the works and all its assets were transferred to the North Eastern Gas Board.

THE FIRST MEETING.

The first meeting of the company was on

July 24th, 1876, and those present were William Blough, Charles Bemon, Sam Jackson and Jerry Brothier. Mr Blough was elected president, Messrs Mills and France were appointed the architects, and Messrs Smith and Gothard valuers. A well-known Keighley solicitor, Mr John James Waterworth, was appointed secretary for the time being, & at that time, the company had no assets. Messrs Wright and Waterworth were appointed solicitors to the new company and Messrs Mills and France architects and surveyors.

When the company decided to have works constructed in 1877 they appointed Mr John Garlick, of Barnforth, to be clerk of works, and after ^{their} completion he was appointed secretary and manager, continuing in that position until his death in 1891. Mr Garlick was succeeded by Mr Fred H Pickles, who rendered 35 years' valuable service as secretary and manager, and at a meeting in 1926 he was thanked by the directors for his efficient work.

Mr Fred Luyock, who started work in the company's office in 1914 was, in 1926, appointed in succession to Mr Pickles and he retained his position until the nationalisation of the industry, when he was appointed district engineer and manager.

MILLS' ENTERPRISE

In the early days of the company most of the mills in the area had their own gas-making equipment which served their own premises and, in many cases, houses in the villages as well. This system was authorised at the time the company was having its Bill passed through Parliament. Later the gas company purchased these mill undertakings. Some of these mill undertakings only supplied a few houses, but in other cases the greater part of the village householders were on the mill supply. At Bradley there was a Bradley Gas Company at Bourne's Mill.

The last mill to be supplying its own gas was that of Messrs G. M. Bawston at Sutton Mills, which works did not close down

until 1922, but had long before ceased to supply gas to houses in the village.

One of the mill owners who stood out against selling his undertaking to the gas company was Sam Watson, who owned the Farnhill Mills, and ultimately the matter went to arbitration before settlement.

The company's rights extended over the villages of Steeton, Eastburn, Cross Hills, Glesburn, Sutton, Sutton Hill, Bowling, Kildwick, Farnhill, Bownley and Bradley.

SUPPLYING SILSDEN

In the early days, Silsden Local Board sought authority from Parliament to supply the Silsden area and there were two inquiries but very little was gained by the Local Board except the right to be distributors in their own area. The Kildwick Company, so long as they supplied Silsden, did so in bulk which went through a meter in a stone building which now stands on the left-hand side of the road on entering the village.

In 1904 the Silsden Urban Council

obtained Parliamentary authority to be suppliers as well as distributors for the Silsden Urban District.

All through its history the board of directors was comprised of local men. Sir John Horsfall was a director for 34 years. Chairmen of directors have been as follows:- William Blough, Samuel Jackson until 1907 Sir John B Horsfall (from 1907 to 1920), Mr James Barstow (from 1920 until his death) Mr Francis Stick, and Sir J Donald Horsfall (chairman until nationalisation).

The last directors of the company were Sir Donald Horsfall, Col G M Bateman, Mr Sam Blough, Mr Percy Stick and Mr J. Alma Blapham.

THE GAS HOLDERS.

Speaking of the company from an engineering point of view, Mr Laycock said the big gas holder had a capacity of 400,000 cubic feet of gas and was constructed in 1897.

The smaller holder - still in use -

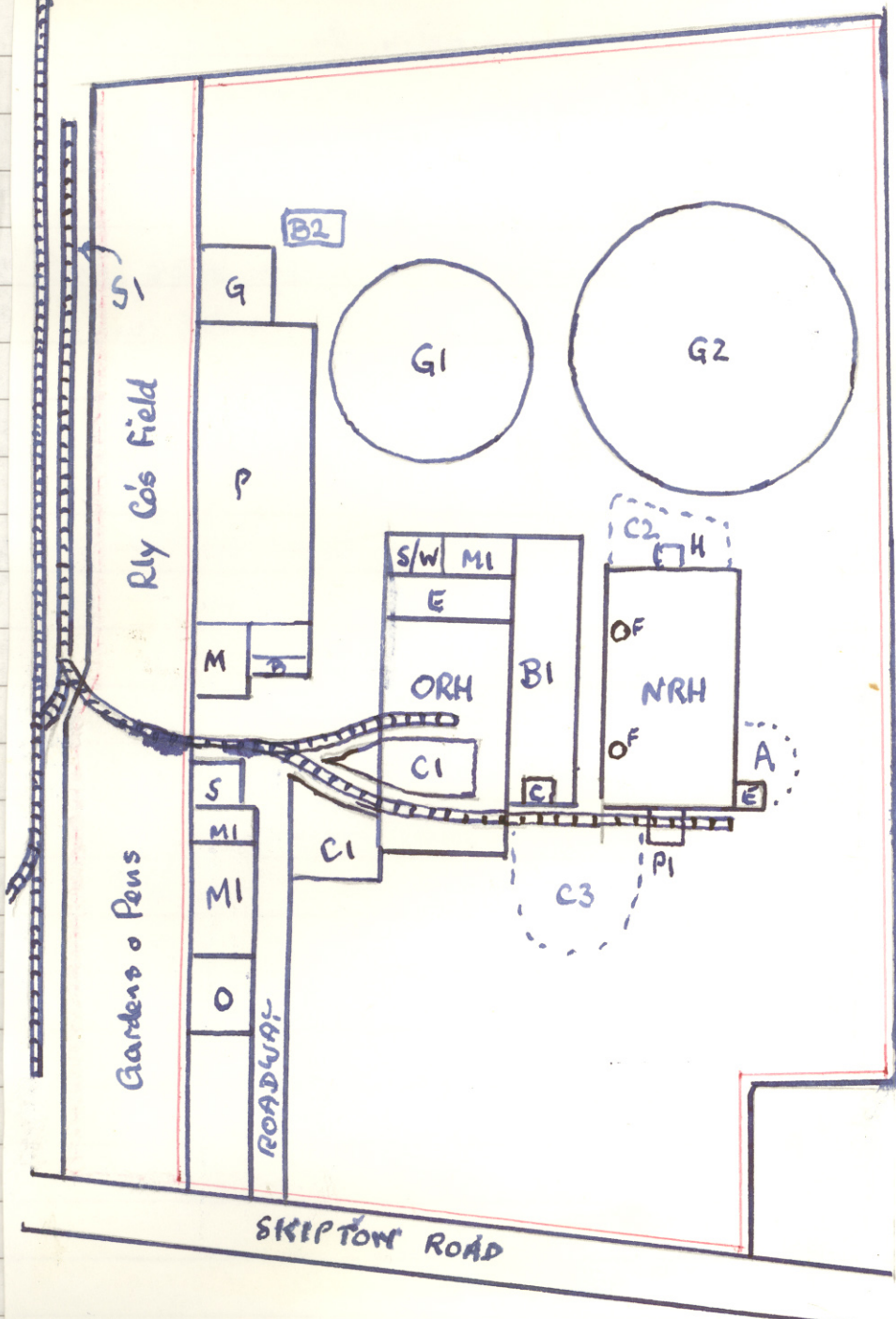
was the one erected when the company first started. In 1922 a vertical retort plant was erected at a cost of £22,000. The big holder is a three lift holder. In 1895 the company extended its operation by raising a large sum of new capital and further capital in 1921. At the close the nominal capital of the company was £46,000.

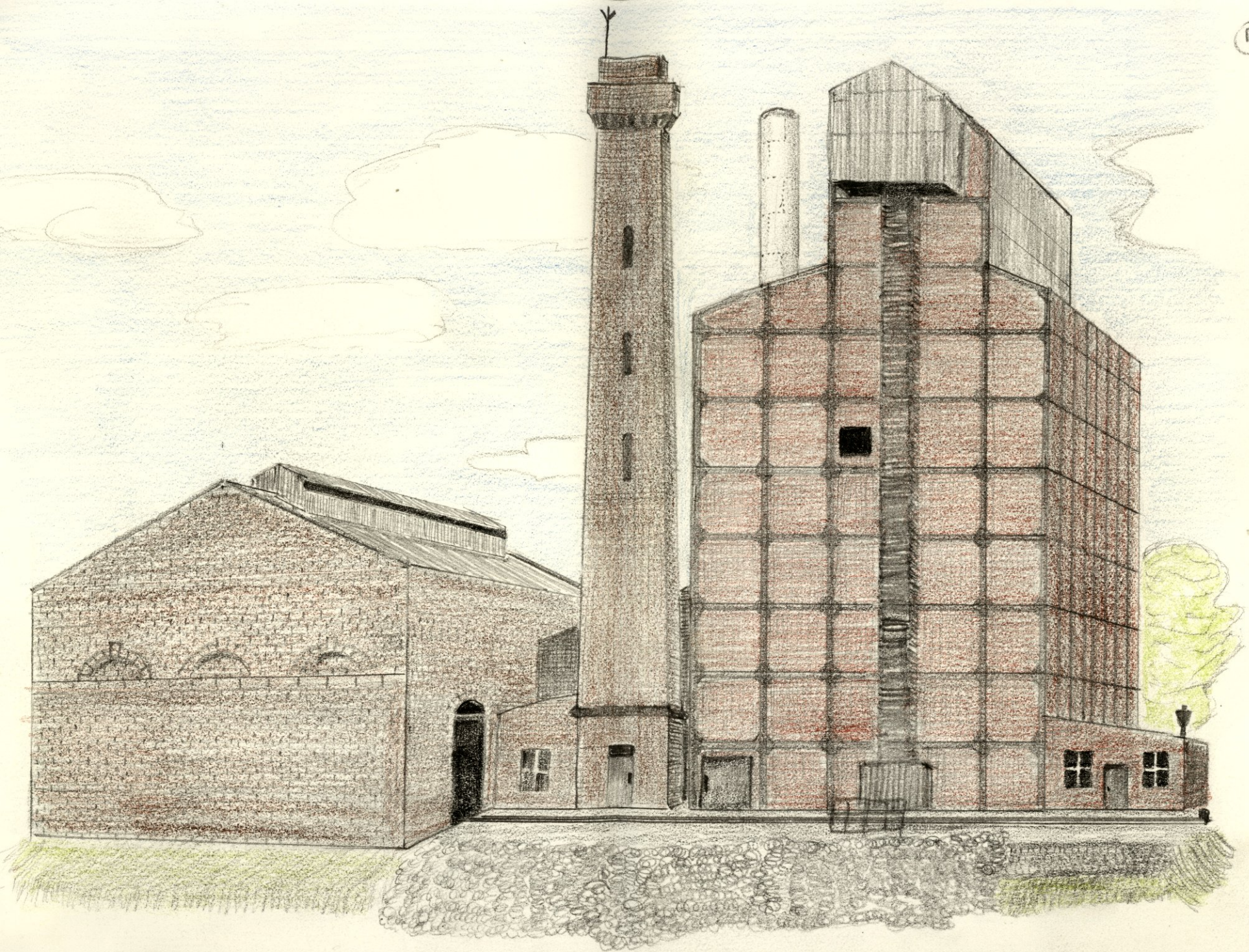
KEY

————— Boundary of Premises

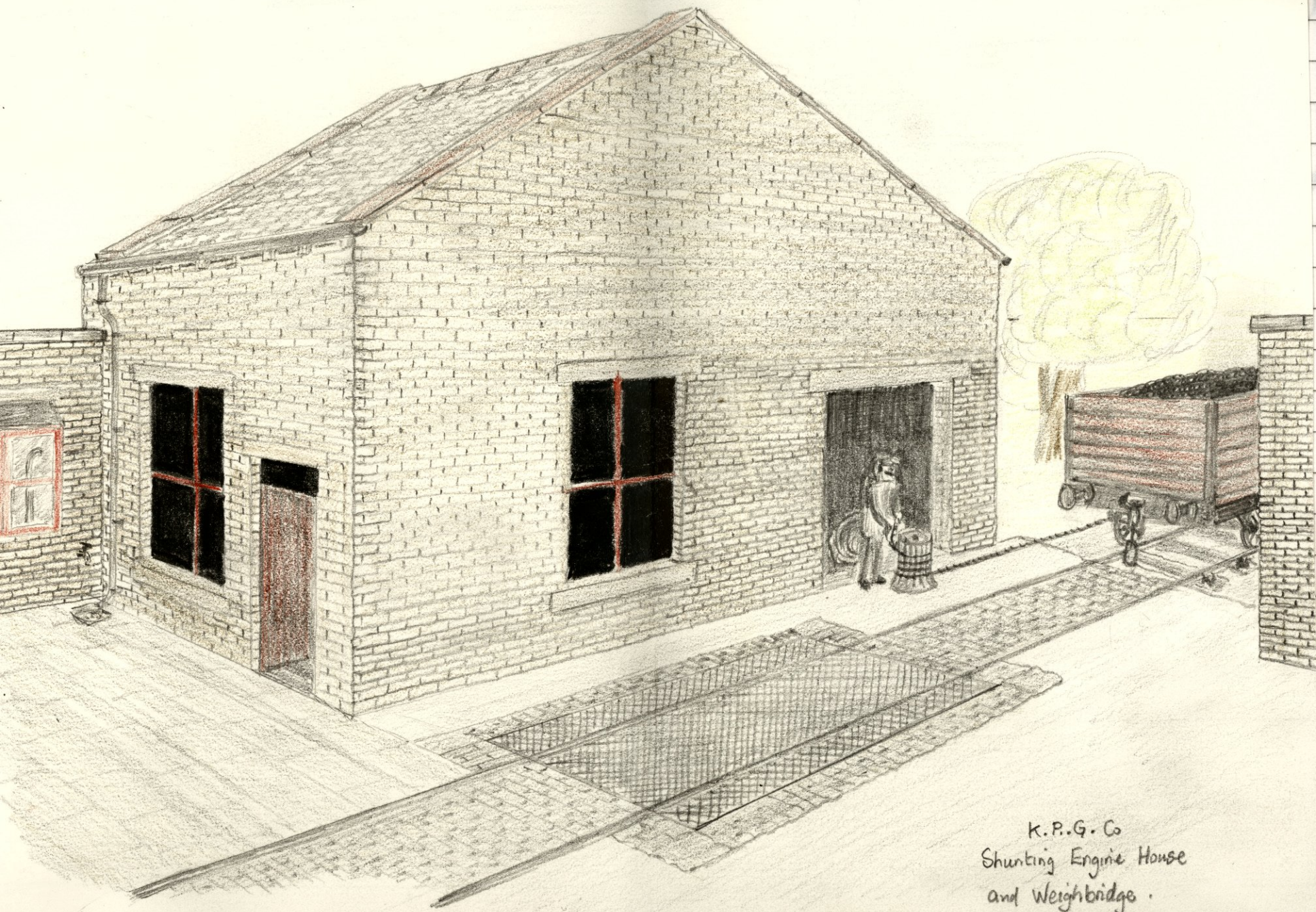
- G Garage
G1 Small Gasholder
G2 Large Gasholder
P Purifier Shed
M Meter House
B Booster House
S/W Scrubber and Washer
M1 Mechanics Shop
E Engine Houses
B1 Boiler House
ORH Old Retort House (disused)
NRH New Retort House
C Chimney
H Hoist
P1 Pit and Conveyor.
C1 Coal Stacks
S Shunting Engine House
M1 Manager's House
O Offices
F Flues in NRH
C2-C3 Coke Stacks
S1 Siding
- A = Ash Heap
B2 = Benzol Plant

→ North

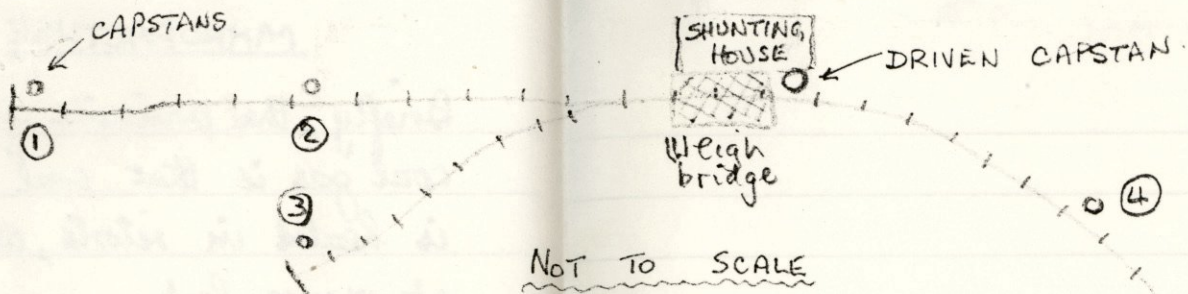




K. P. G. Co from E



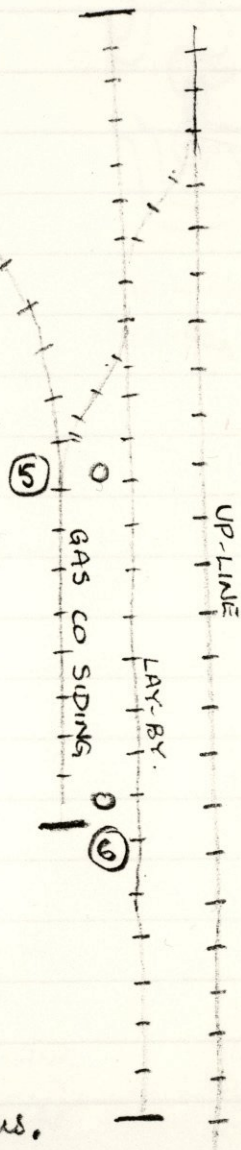
K.P.G. Co
Shunting Engine House
and Weighbridge .



KILDWICK PARISH GAS CO

Coal Waggons were brought into the gasworks by wire rope. The radius of the siding was approx $\frac{2}{3}$ chains - far too sharp for other than 4-wheeled vehicles. The driven capstan was powered by a steam engine, a rather primitive one. The steam boiler was distant in the works, 80-100 yds away. This caused much condensation when shunting was finished, and this was blown out rather spectacularly from the exhaust pipe when the engine was next started. The speed of the engine was controlled by the foreman (Willie) by means of the steam valve on the inlet pipe. The capstan was driven by belting and gearing.

The early morning shunt left up to 3 12ton waggons of coal in the Gas Co's Siding. The wire rope was pulled out from the Shunting House by Sam, and placed behind the intermediate (free-running) capstans, the hooked onto the waggons. The engine was started, and the rope given 3 or 4 turns round the driven capstan by Joe. Willie increased the steam, and the waggons came in! — at about one m.p.h.



The wire rope was approx $\frac{3}{4}$ " dia x 50 ^{ft} ~~ft~~ long, with a 4" steel ring on each end. 2 ropes could be joined by hooks → These hooks were also used for attaching the rope to the waggons. The waggons were each weighed, then:—

Sam took the rope out and round the first capstan (no 2) and back to the waggons. The waggons were pulled till they got to the capstan, then Sam had to take the rope out and round the next capstan (no 1), and back to the waggons to pull them further on.

The shorter siding (to capstan no 3) was used for filling tar and ammonyl liquor tanks. The former were sent



Two-linked hooks.

to Yorkshire Tar Distillers at Bleckheaton, and the latter to Brotherton and Co, Wakefield.

Empty waggons and full tanks were then taken out to the Gas Co's Siding, and were collected by the 6 p.m pick up shunt.

This method of shunting was used up till the closure of the works about 1955, and must have been one of the last places in the country to use it.

MANUFACTURE

Briefly, the principle for manufacturing coal gas is that coal (of a suitable quality) is heated in retorts, the fires of which are at orange-heat.

The coal breaks down into gases and carbon (which is left as coke - a saleable by-product). The gases are then washed, scrubbed, purified and water vapour condensed out. The resultant gas is then fed into the gasholder for distribution.

The coal was delivered almost daily by rail, and left in the company's siding by the 7 a.m. drop-off shunt. Also empty Tar and "Liquor" Tanks came this way.

These Waggon's were brought into the works by wire rope, as detailed elsewhere (next page). The empty Tar and "Liquor" Tanks were put on the shorter siding for filling.

The coal waggon's were placed one at a time above the Pit. The side and bottom doors were opened and the coal went into a hopper

beneath the railway track, and was fed into conveyor brackets, whence it was delivered up to the top of the retort house. (Occasionally a waggon came that had not bottom doors, and two or three bottom planks were pried up, illegally, to let the coal out.) The company had seven red-painted waggons of their own. These waggons were commandeered by the government in 1940, and the company received (I think) £10 each for them. All the coal waggons used were twelve-tonnes.

The coal was supplied by Pope & Pearson's of Normanton and several other Yorkshire collieries.

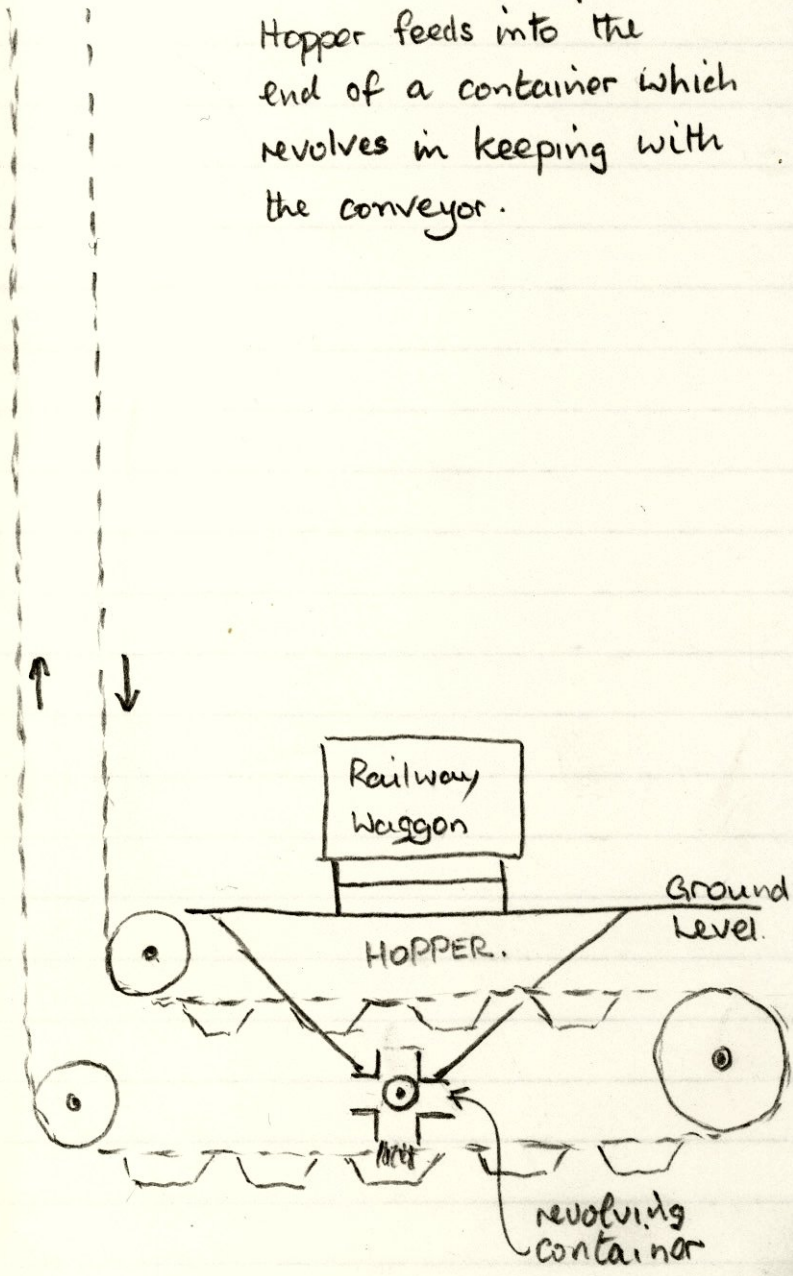
Any coal surplus to immediate needs was stacked for use in time of shortage through bad weather or non-deliveries.

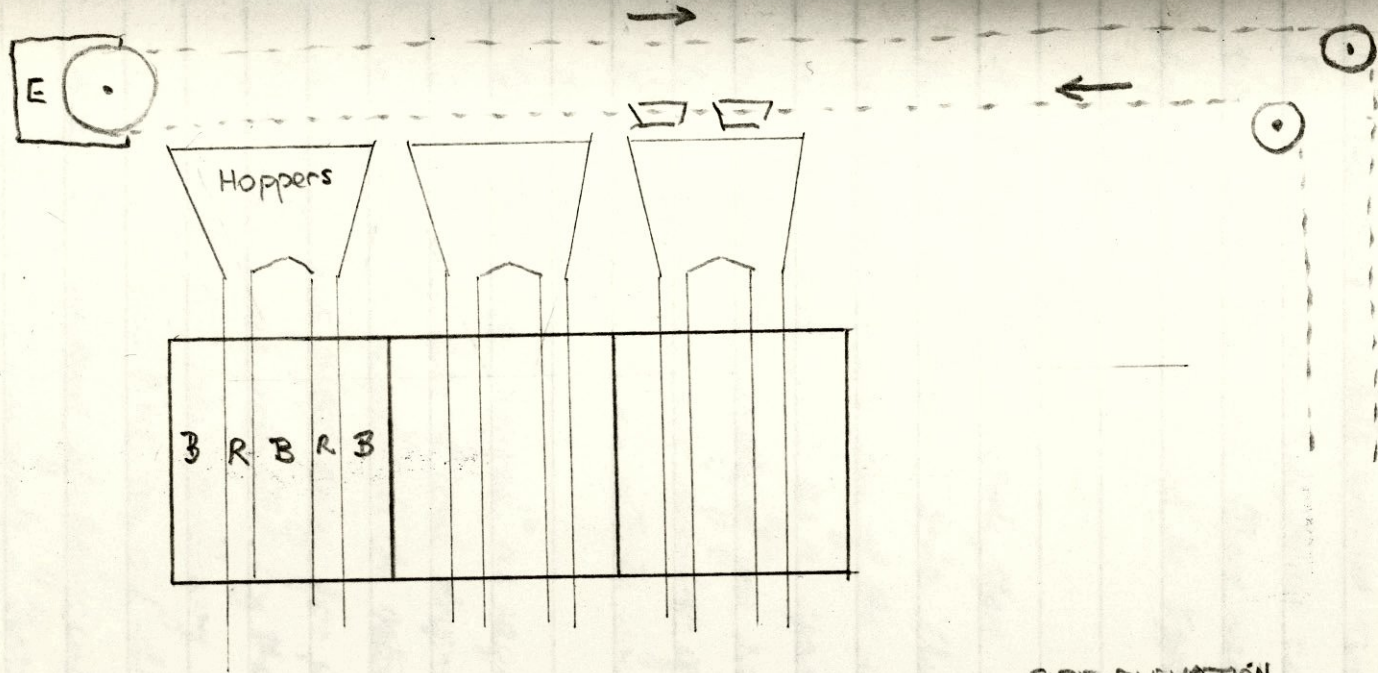
An explanation of the conveyor working is shown overleaf. It was worked by an electric motor — the only one in the place in earlier times.

BOTTOM END OF CONVEYOR.

Hopper feeds into the end of a container which revolves in keeping with the conveyor.

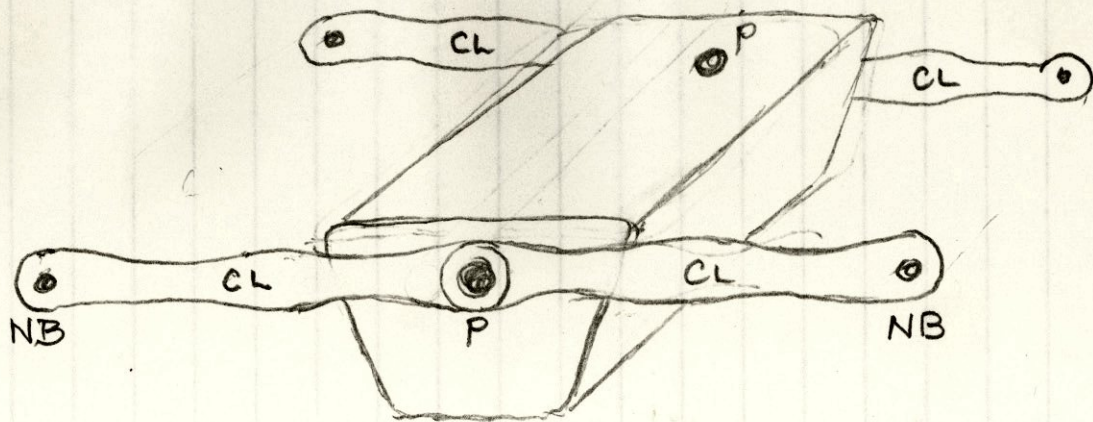
Retort House Side





E = Electric Motor driving conveyor
 R = Retort
 B = Bed (Fire)

SIDE ELEVATION



CONVEYOR BUCKET. $30'' \times 12'' \times 9''$ (approx)

NB - Next Bucket

P - Pivot

CL - Chain links similar to bicycle chain

As the full buckets crossed over the hoppers, a simple trip lever caused them to tilt and tip the coal. There were three hoppers, and coal could be tipped into which was required.

RETORTS

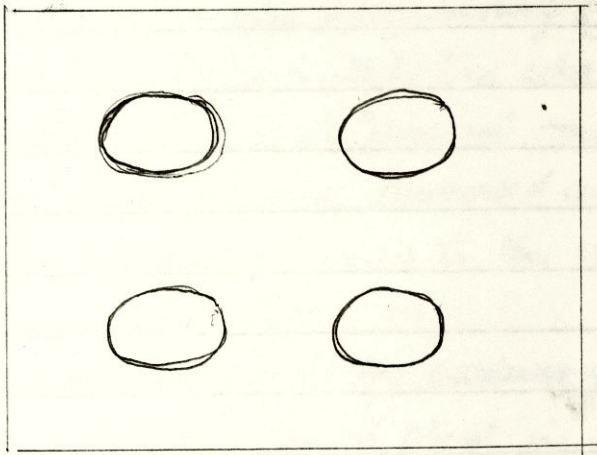
Each hopper fed 4 retorts, there being 4 in a bed, and there were 3 beds. Usually 6 or 7 retorts were in use, one of the beds being un-fired and used as a spare, or being re-lined. The supply of gas was adjusted by using a varying number of retorts.

The fire-beds and retorts were made of firebrick.

The retorts were "charged" as required by letting a quantity of coal drop in from the hopper. As it reacted in the retort, gas was given off and piped away for processing.

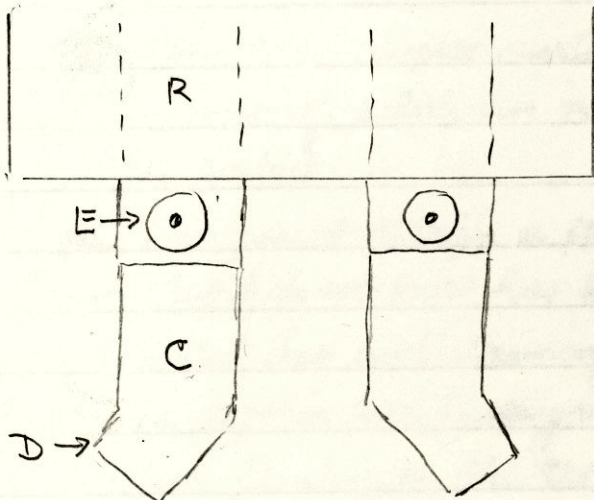
The coke was extracted by the extractors.

An extractor was a heavy casting shaped rather like an oil-drum cut in half, but instead of being cut straight across, cut at an angle. These revolved



PLAN of firebrick bed and retorts

SIDE ELEVATION of extractors.



R = Retort.
 E = Extractor
 C = Chute.
 D = Door.

continuously and very slowly (perhaps 2 or 3 times per minute). The coke fell into the chute, and was "drawn" manually every two hours, and barrowed away in a large 2-wheeled barrow to the coke stacks, for eventual sale.

The beds were fired by producer gas, which was made in a small plant in the back ground floor of the retort house. Producer gas was made by passing steam through burning coke and is a mixture of hydrogen and carbon monoxide.



PROCESSING

Raw coal gas is a complex mixture of chemicals, most of which are not wanted in the finished product.

The gas was passed through a washer and a scrubber (but I do not know how these worked). These extracted Tar and Ammoniacal "Lecquor", which were kept in an underground tank, the Lecquor floating on the tar. The tar

was pumped into a rail tar tank, and sent to Yorkshire Tar Distillers at Cleckheaton. The liquor was pumped into rail liquor tanks and sent to Brotherton & Co Wakefield

After these "wet" processes, the gas passed through a condenser to take out most of the water vapour

Next it was passed through a Purifier containing Iron Oxide, which extracted the sulphur from the gas.

The gas was then put in the gasholder, for distribution

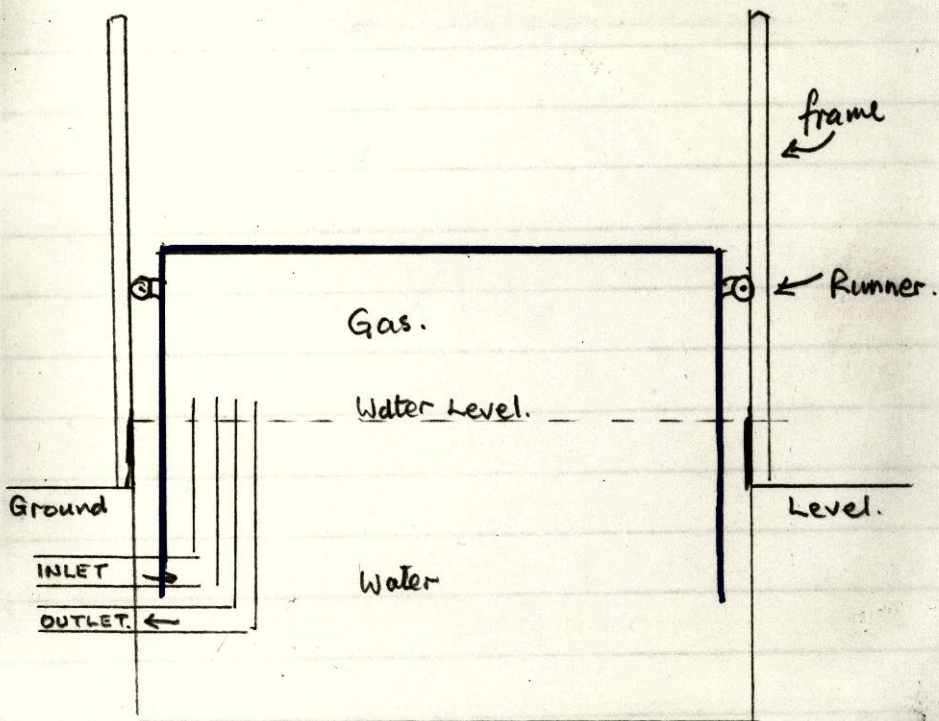
GASHOLDERS

The principle of a gasholder is like an inverted teacup floating in water. The gas entering from the works lifts it up, and its weight pushes the gas out into the distribution mains

The small holder was the original, and is described below. Note that there must be enough depth of water in the tank to submerge the empty holder, and enough

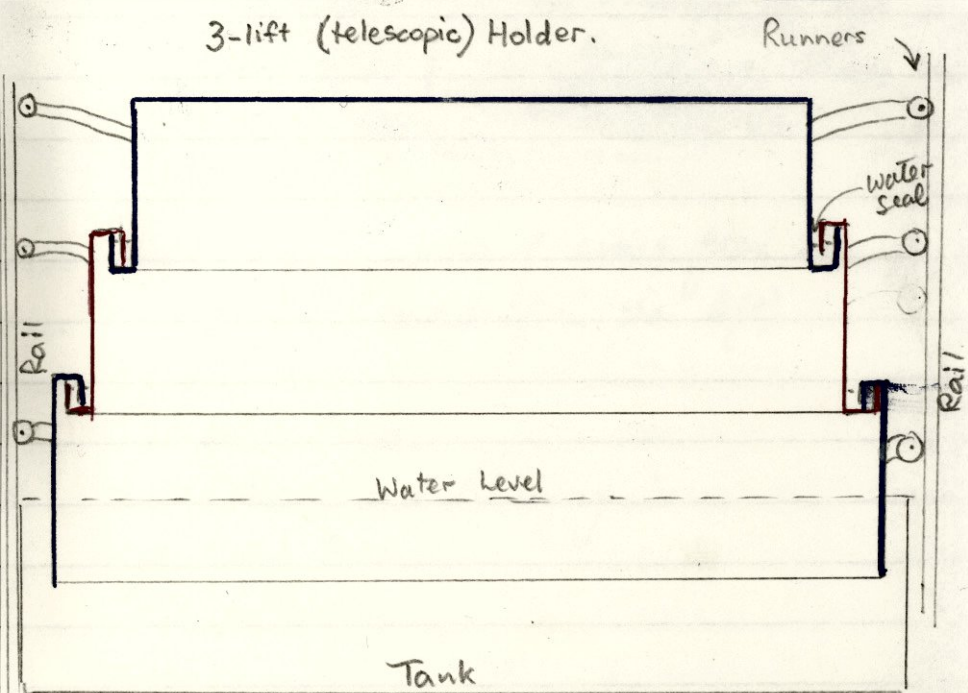
framework ~~framework~~ to support it when full.

The framework was 8 tapered cast iron pillars, each with a vertical rail attached. The runners on the holder ran on these. The pillars were joined by girders across their top, to hold them together. The photograph shows the holder empty, with the top being re-sheeted (It was made, sides & top, of rivetted steel plates)



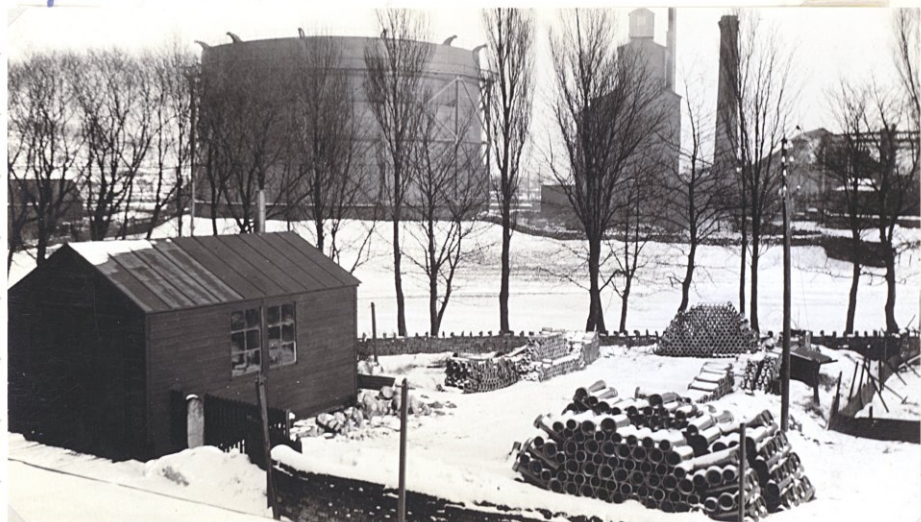


The Big holder was made wholly of steel, the framework being H-section girders. It was a 3-lift (telescopic) design. The principle was as shown on the drawing. The advantage of this design was that the depth of the tank need only be a little over $\frac{1}{3}$ the depth of the full holder, as it telescoped on emptying.





The photographs (previous page) were taken in Apr '74 during the dismantling. They show the framework well. Also in the top photo is the little holder.



General view of part of works from St. Andrew's Ter. Shows (from the left) ↑

Big holder.

New Retort House.

Boiler House and Chimney

Old Retort House

Little holder.

POWER

In earlier days the only moving apparatus powered by electricity was the conveyor used for "putting coal up" into the retort hoppers. When the conveyor was needed, there was an upright steam engine in the engine house attached to the new retort house, which drove a dynamo. This made the current to drive the motor for the conveyor.

The extractors needed continuous power, and this was provided by another steam engine (a horizontal one) in this same engine house. There was also a duplicate "stand-by" engine.

At the other side of the works, the Washer needed constant power, and this was provided by another steam engine, in a building between the boiler house and the washer, again with a "stand-by" engine.

Another small steam engine was a pump used for filling the Tar & Liqueur rail-tanks. The biggest steam engine was the shunting engine - see item about shunting.

STEAM

It is obvious that steam had to be constantly available, although none was needed during shunting operations.

The main boiler was a Lancashire (2-fire) boiler, which burned coke-breeze. This fuel was produced at the works, being merely small coke and coke dust, so was gratis.

The "stand-by" boiler was a Cornish (1-fire)

The boiler feed pump for water was also driven by steam from the boiler. There was an attachment for blowing steam into the fire-grate. This was used for only a minute or two at a time, and boosted the burning by making producer gas then burning it.

Photograph opposite was taken in the early 1950's.

In the background, left to right:-

Coal Stack wall.

(Radman & Smith's mill chimney).

Gas Lamp.

Offices and former manager's house

Shunting-engine house, & capstan (far right)

Personnel, left to right:-

Stanley House - Asst Mechanic

Wilson Wright - Mechanic

Harvey Peacock - Stoker and Union Man.

Tom Bensford - Lorry driver.

? - Labourer.

Tom Holmes - do.

? - do.

Dennis Tillotson - do & lamp man.

Jim Bingham - Foreman

Fred Laycock - Engineer, Secretary & Manager



Photograph opposite shows a petrol-engined conveyor bought in 1945, for loading coke into the lorry

In the background, left to right:-

Redman & Smith's Mill.

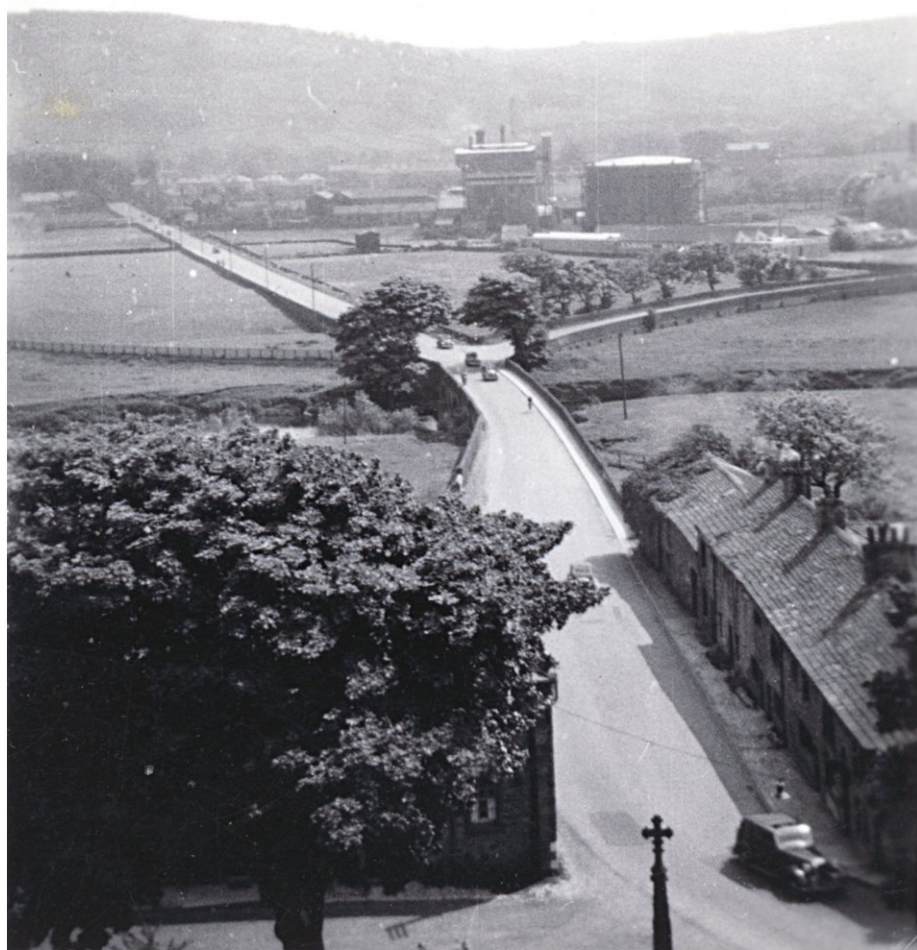
Ernest Dixon's shop.

Signal Box

Station master's house (Old Station)



Photograph taken in late 1940's
from Kildwick Church tower.



Photographs. From New Retort House

- ① From window at front.
Looking towards Eastburn. Showing Main Rd.
mill, level crossing etc. yard, garden, offices
and front field.
- ② From window at front.
Looking towards Kildwick
- ③ From Hoist Landing at Back
Looking towards Eastburn
Showing House and offices in foreground.
Behind them the railway goods shed
- ④ From Hoist Landing at Back
Looking toward Cross Hills, Kield Bros mill
and top of little gasholder in foreground









1964, before the railway goodsyard closed. The new retort house has gone, but the old one still stands (-behind the engine's tender), as does the house



1981 - In the background, the site of the big gasholder and new retort house, prior to development (now Airedale Chemicals)





BUNDRY NOTES

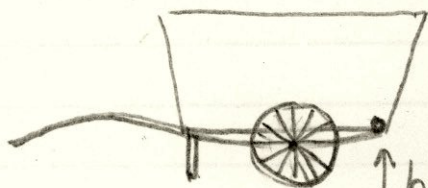
The new retort house was 6 storeys high. It was made of H-section steel girders infilled with red brick, see drawing on page 8.

At the west (back) end of it was an outside hoist, the motor house for which (known as "E'pigeon'oyl") is shown on the photograph on page 22. The hoist was not for weights above 15 cwt., and was in a steel framework, entirely open to the weather, with landings across to the building. There were three floors served by it, the first, the top, and one inbetween.

Outgoing empty coal waggons and full tanks were put out onto the railway siding to be picked up by the 6 p.m. pick-up shunt. Empty coal waggons had to be put on the shorter siding whilst full ones were being brought in. See pages 11 & 12

Ashes from the boiler and producer gas plant were tipped behind the works (see plan, page 7) They were given away to anybody who wanted them. Uses were for making mortar, gritting roads in winter, making-up potholes in unmetalled roads, etc

Coke was a valuable by-product. It was "drawn" (see page 18) into a large two-wheeled barrow, which could be tipped, i.e. it had a hinged container part. The barrow was pushed along a plank run over the coke heaps by two men, and tipped. At the end of summer there were two large coke heaps, and at the end of winter, customers were almost waiting for the next barrowful from the works



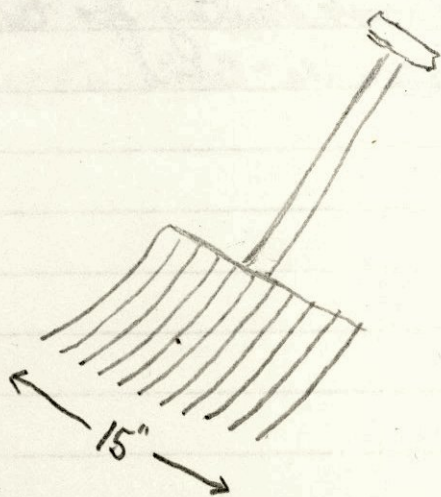
↑ hinge for tipping.

BARROW - SIDE ELEVATION

After the ~~1914~~ war, when coal was still rationed, people were allowed to buy $\frac{1}{2}$ cwt of coke off-ration. The company used to sell to "halfhundredweights" on Saturday mornings. There was quite an assortment of old prams, go-carts, bogey's boys' carts, an almost continuous procession, coming to get their one and twopence-worth.

The company had a lorry, whose main job was delivering coke, either a full load "loose", or different quantities in sacks. If it could not be tipped on delivery, it had to be bagged and carried to the customer's storeplace.

The lorry was loaded manually by throwing forkfuls on (until the conveyor came - see page 26). A large fork was used, not a shovel. The prongs were perhaps $1\frac{1}{2}$ " apart which allowed the coke-breeze and dust to fall through. This was used for the boiler (see page 24)



COKE FORK .

Controls etc - About the premises were many valves, governors, meters and a booster, to make sure everything was going on all right. There was also a calorimeter, which measured and recorded on a paper roll, the calorific value of the gas, which had to be between close limits. Gas meters measure gas in cubic feet, but gas was sold by the therm, and this calorific value was used as a conversion factor.

[One Therm = 100,000 British Thermal Units (BThU)
1 BThU is the amount of heat required to raise
1 lb of water through 1° Fahrenheit.

The main meter which measured the amount of gas passed into the mains was perhaps 8 ft dia x 10 ft long.

There were many valves, all over the place, controlling gas into different parts of the plant.

There were several governors to control the pressure at various points, including the distribution mains.

There was also a Booster powered by a

gas engine, which was used to push gas into the mains at times of high demand, such as Sunday mornings for cooking Sunday dinner, and Monday mornings for wash-boilers

Gasholder runners were wheels with a flange at each side. These ran against the upright rail on the framework. The flanges kept the runner on the rail, and the whole holder from turning round on a vertical axis. In springtime jacksnaws caused a nuisance by nesting on these runners and other parts of the framework, and were occasionally shot. (They were known as "gasworks pigeons")

The big holder had a vertical ladder up to a walkway around the top girders. These had been removed when the photographs on page 21 were taken.

The holders' tanks used to freeze up in winter, and the ice had to be broken manually. However the two "cups" on

the big holder did have steam to them to try to prevent freezing up.

After the works closed in 1955, the holders were used as a "Storage Station". The closure was the result of a gas-grid being developed, and gas was made at, and supplied from Birkhall, Bradford. After a few years this storage was discontinued and the holders were pulled down.

A later development was the advent of North Sea gas, which is piped over the Standard to Skipton, then down the Valley. Changeover was 5/4/90 or thereabouts.

During the war a Benzol Plant for extracting Benzol from gas was built near the ~~garage~~ garage. Benzol was used with petrol in engines. This did not last long beyond the war, as the Benzol was expensive and better left in the gas anyway.

The stone-built old retort house was not pulled down when the steelwork was, and survived for several years in different (non-gas) uses. After the new retort house was built, existing plant was scrapped, and the building was just four walls and a roof. It was useful for storing small items such as wheelbarrows and handcarts, but its main use was for storing coal against shortage. It also had the advantage of being able to work the coal in wet weather without the men getting soaked. There were also 2 coal stacks outside.

The Purifier shed contained five purifiers, which could be used in any sequence, usually three at once. They were simply large iron boxes, perhaps 20 feet square by 8 ft deep. Across them horizontally were wooden grids, with iron oxide piled on them. The gas passed through and sulphur was extracted. They had to be emptied at

times, and new oxide put in. All this was done by hand and wheelbarrows. The spent oxide was left out in the open air for several months to sweeten, and could be used again, but not many times, new had to be bought. New supplies came by rail

STREETLAMPS

All the local parishes were lit by Streetlamps. Kildwick was the first to change to electricity in the 1930s. After the war, all the others followed, Farnhill being the last (about 1960)

A man (Dennis Lillotson in later years) had to go round all the lamps weekly to wind the clock on each lamp, and adjust the lighting-up time according to the time of year. He also put new mantles on as required, and wiped the glass. Lights out was 11.30 p.m. for all parishes except Ghusburn, which was 11 p.m. The lights came on at 6 a.m. till dawn. Ghusburn had a "summer season" from May 21 to Jul 21, when the

lamps were not lit.

STAFF

F. Laycock was Engineer, Secretary & Manager
Office 2.

Laboratory Technician 1

Meter Inspectors 2.

Lorry Driver 1

Yard Foreman 1

" Labourers about 5

Stokers 6

Pipelayers/labourers 2.

do. Foreman 1

Fitters 2

Mechanics 2

Showroom 1

The Lab Technician A was actually an
apprentice engineer

The Meter Inspectors (Slotter) collected
the pennies and shillings from

prepayment (slot) meters, as well as
reading the ordinary meters. A goodly

proportion of consumers used slot meters. The complaint of the penny-meter users was "You don't get much gas for a penny these days", the coin box tended to get full before the quarterly visit.

The Yard Foreman was in charge of the labourers, some of whom had to work for a short time on Sunday mornings to "put the coal up". The other jobs besides this daily task were shunting, loading coke onto the lorry, and many smaller jobs as they occurred.

The Stokers worked 8-hour shifts, 2 men on at a time, 2 days a week, with every 3rd Sunday off. The shifts were:-

mornings 5-15 a.m. to 1-15 p.m.

afternoons 1-15 p.m. to 9-15 p.m.

nights 9-15 p.m. to 5-15 a.m.

On Sundays those who had gone off at 5-15 a.m. were back at 1-15 p.m. and those who had been on afternoons got the day off. This system was altered when

hours were shortened, and seven stokers were employed. The two stokers were top man and bottom man (he was in charge). The top man worked mainly upstairs in the netest house. The bottom man saw to the boiler and engines, meters and calorimeters. They both "drew" coke at 2 o'clock and every two hours.

The pipelayers' Foreman (Gordon Spencer) had worked on that job for many years, and remembered better than on plans just where service and mains pipes ran. The fitters went to peoples' houses, attending to lighting and appliances for the consumers.

The Mechanics kept the plant and machinery in repair and running.

The showroom was on Main St, Cross Hills (where Rd Wellock's shop now is). In earlier years it was attended to by Mrs Gordon Spencer, who lived on the premises.

DISMANTLING

When the works closed the new retort house and several smaller buildings, and the boiler-house and chimney were pulled down. The steelwork and cast-iron was broken up and sent by rail to Thos W Wards, Sheffield. When the "storage station" closed down, the holders were pulled down.

All that was now left of the works were the Purifier shed and attached buildings, and old retort house.

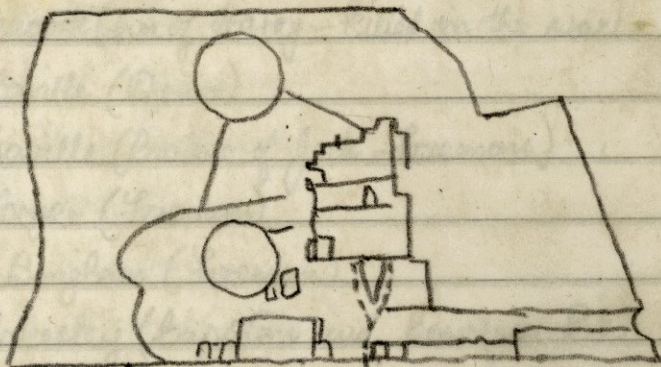
The old retort house had one or two tenants or owners before Smith Bros (Kly) Ltd. got it. They used it for several years before pulling it down and put up a new building on the site. The Purifier shed was bought by PS Turner Ltd and it has been adapted and added to, and is still in use.

Arredale Chemicals' premises are built where the big gasholder was.

The units where Walker Farming is, are built on what ~~was~~ where the house, garden and adjacent Railway Co's ^{land} was

Other coal Suppliers were, I think,
Monkton Collieries
and

Smith Parkinson & Coe, Bradford.



6" to 1 mile

1:10560

Gasworks
Site

The Kildwick Parish Gas Company had given the council notice that the price of coke was to go up to 14s 2d per ton for broken coke and 13s 10d for unbroken coke.

CH&P 3/3/00 ('00yr3ago')

names of some past employees

Bill Birch (Stoker) (collector - "Slotter")

Tom Birch

Walter Birch (Stoker - son of Bill)

Ralph Whiteoak (Stoker) (Lamp/Labourer)

David Bennett (Stoker)

Tom Waterhouse (Stoker)

Harry Peacock (Stoker)

Dick Peacock (son of Harry - killed in the war)

Jack Saville (Driver)

Harry Saville (Brother of Jack - Foreman)

Willie Boyer (Foreman)

Jimmy Bingham (Foreman)

Joe Blakesley (Bapstain and Bonveger Pit)

Sam Heaton (Labourer)

Gordon Spencer (Foreman Fitter)

James Royston (Technician)

Keith Pollard (Technician)

Leonard Barrett (Clerk)

Edith Barrett (Clerk - wife of Leonard - did his work during war)

Harry Bulcock (Clerk)

Blifford Walmsley (Fitter)

Billy Dixon (Meter reader/collector - "Slotter")

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Geo Doult (meter reader/collector - "Slotter")

Joe King

Harry Crossley (Litter)

Dennis Gillotson (Street Lamps/Lubricator)

Perry Kitson

Tom Holmes

Ernest Eastwood (Driver)

Dick Inskip (Driver)

Wilson Wrigth (mechanic)

Stanley House (mechanic)

Tom Beresford (Driver)

Tom (?) Dickinson

Harry Greenwood (Stoker)