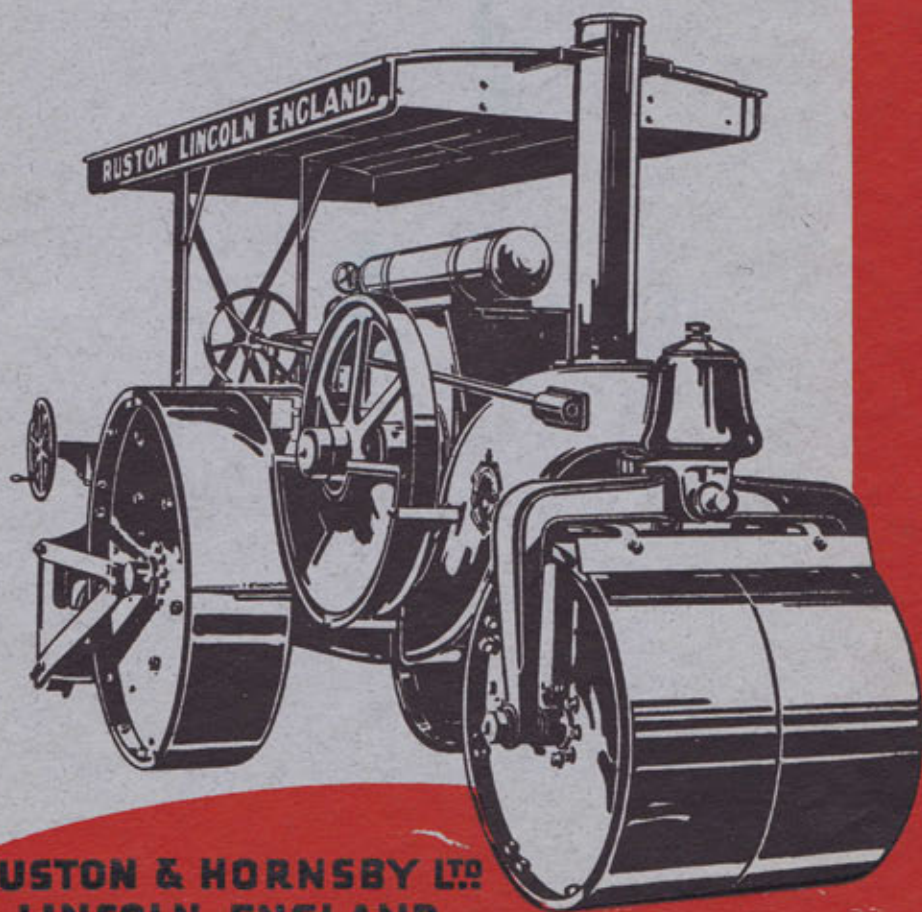


CRUDE OIL ROAD ROLLERS



RUSTON & HORNSBY LTD
LINCOLN ENGLAND

RUSTON

CRUDE OIL ROAD ROLLERS



**RUSTON & HORNSBY LTD
LINCOLN, ENGLAND.**

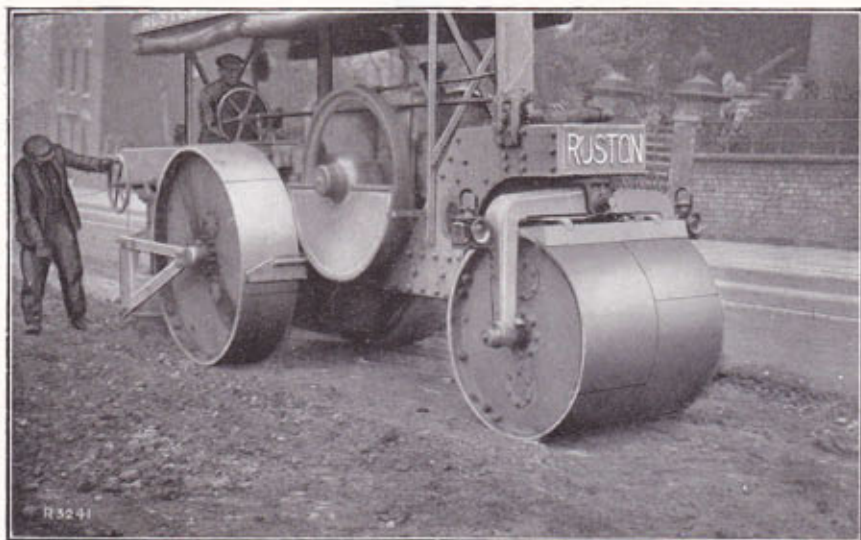
TELEPHONE: 580 LINCOLN. TELEGRAMS: RUSTON, LINCOLN.

LONDON OFFICE: IMPERIAL HOUSE, 15-17-19 KINGSWAY, W. C. 2.

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The Report of the Municipal Surveyor using the Oil Roller here illustrated says:—
"The saving in addition to the actual low cost of running in comparison with a steam road roller is as follows:—Approximately one hour every morning, and a quarter of an hour every evening. With no water boiler to clean there is a saving of about half a day per month. There is a material saving per day by not having to fill with water, and no coal for fuel to cart about."



RUSTON



USTON CRUDE OIL ROLLERS as described in this catalogue represent the latest development in Internal Combustion Engine Rollers and we are confident they will be found of considerable interest to modern highway engineers.

As pioneers and specialists in the manufacture of Internal Combustion Engines Ruston & Hornsby Ltd. bring unique experience to bear on the problem of producing a power unit unequalled for Reliability and Economy. Further, in designing a roller propelled by such an engine, we have taken full advantage of thirty years' experience as builders of the Ruston Steam Roller and several points of excellence peculiar to our rollers will be found incorporated in the present design.

Extensive experiments carried out over a long period and reports on the working of Rollers convince us that the Ruston Quick Reverse Crude Oil Roller will uphold the world-wide reputation of Ruston-Hornsby products.

RUSTON

CRUDE OIL ROAD ROLLERS

Class COR.

Engineers who have followed the increasing application of the modern Oil Engine to all power problems will be familiar with the merits of oil as a fuel, but some of the advantages over coal as applied to Road Rollers may be briefly recounted.

There is no waiting to get up steam.

Fuel is only consumed during actual working hours.

Oil is more easily transported than coal.

The cost of carting water is eliminated.

Boiler insurance is cut out.

The smoke nuisance is abated.

No time is lost for Boiler cleaning and inspection.

The elimination of water in a boiler disposes of the vexatious water-level problems where working on gradients.

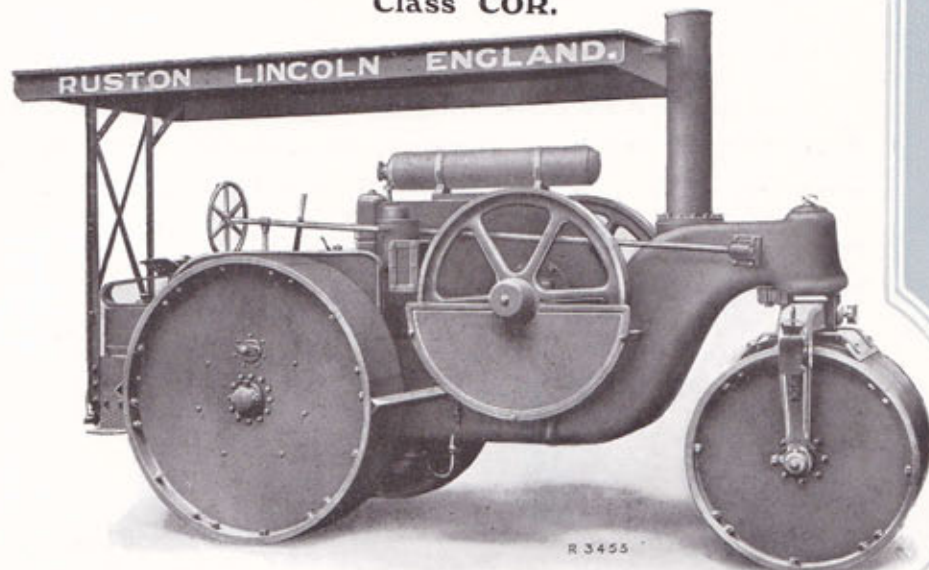
Simplicity in operation and the low consumption of Crude Oil enable the user of a Ruston Oil Engine Road Roller to exploit all these advantages to the full.



RUSTON

CRUDE OIL ROAD ROLLERS

Class COR.



The Three Wheel Roller is made in six sizes, of which full particulars, including the leading dimensions, etc., are given in the table overleaf.

The above illustration shows our Mark H size, the other side of which may be seen on page 11. Illustrations covering our other Three Wheel Rollers will be found on pages 7 and 13.

The Tandem Roller is made in two sizes; leading dimensions, etc., being as given in the table overleaf, and illustrations on page 9.

Every Engine is tested to our full satisfaction for such time as is necessary to ensure that it will develop the power given in the table on page 6 continuously for twelve hours, and is further tested for one hour at a load ten per cent. in excess of the B.H.P. specified. Each Roller also undergoes thorough road tests before delivery.

Table of Dimensions

Tandem and Three Wheel Rollers.

Class COR.

MARK.	Tandem.		Three Wheel.					
	B	D	E	F	H	J	L	N
Approx. Max. Weight in working order (tons)	4½	6½	3½	7	8½	10½	12½	14½
Brake H.P.								
On Fuel Oil ...	9	14.5	9	14.5	14.5	20	25	25
On Refined Oil	10	16	10	16	16	22	28	28
Width Rolled ...	3' 6"	4' 0"	4' 10"	5' 3"	5' 7"	6' 2"	6' 8"	6' 8"
„ „ m/m	1065	1220	1475	1600	1700	1880	2030	2030
Front Rollers								
diameter ...	2' 3"	3' 0"	2' 6"	3' 3"	3' 4"	3' 6"	3' 9"	3' 11"
„ m/m	685	915	760	990	1015	1065	1145	1195
width ...	2' 6"	3' 6"	2' 6"	3' 3"	3' 3"	3' 6"	3' 8"	3' 8"
„ m/m	760	1065	760	990	990	1065	1115	1115
Hind Rollers								
diameter ...	3' 0"	3' 3"	3' 0"	4' 8"	4' 9"	5' 3"	5' 6"	5' 8"
„ m/m	915	990	915	1420	1450	1600	1675	1725
width ...	3' 6"	4' 0"	1' 4"	1' 2"	1' 4"	1' 6"	1' 8"	1' 8"
„ m/m	1065	1220	405	355	405	455	510	510
Travelling Speeds								
m.p.h. ...	½ & 2½	½ & 2½	½ & 2½	½, 1, 2½	½, 1, 2½	½, 1, 2½	½, 1, 2½	½, 1, 2½
Km.p.h. ...	1 & 4	1 & 4	1 & 4	.8, 1.6, 4	.8, 1.6, 4	.8, 1.6, 4	.8, 1.6, 4	.8, 1.6, 4

NOTE:—Rollers are listed at approximate maximum weight in working order, including awnings, which are generally ordered. The "Fuel Oil" powers quoted are obtained with fuel of not less than 18,900 B.Th.U's gross per lb., and specific gravity not exceeding .9, while the "Refined Oil" powers are obtained with standard grades of paraffin.

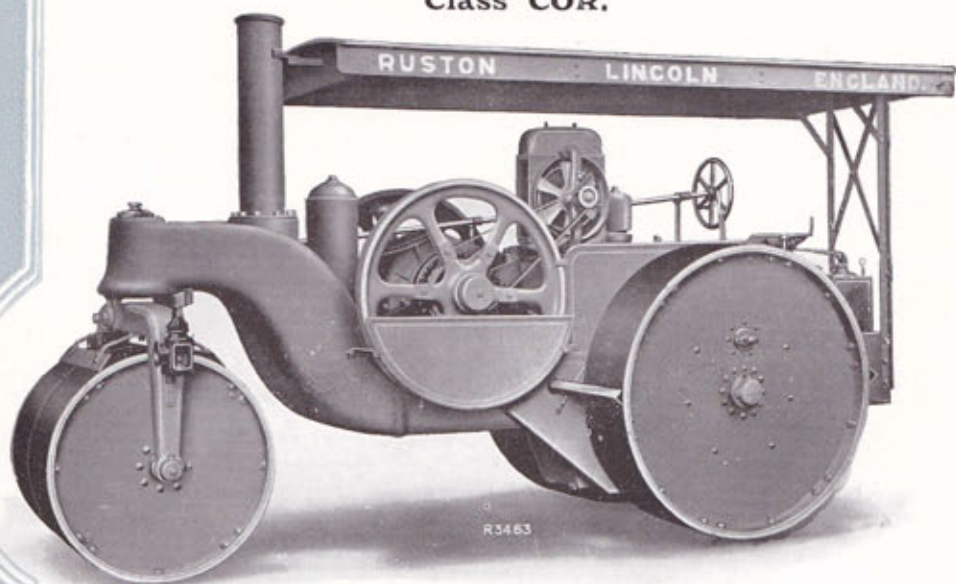
The Engine may be used for driving other machinery, but users should note that when the temperature of the air supply rises above 95° F. a reduction of one per cent must be made in the working load of the engine for each rise of 5° F. For each 1000 ft. altitude above 330 ft. above sea level a reduction of three per cent must be made.

Every Engine is tested to our full satisfaction for such time as is necessary to ensure that it will develop the power given in the above table continuously for twelve hours, and is further tested for one hour at a load ten per cent in excess of the B.H.P. specified. Each Roller also undergoes thorough road tests before delivery.

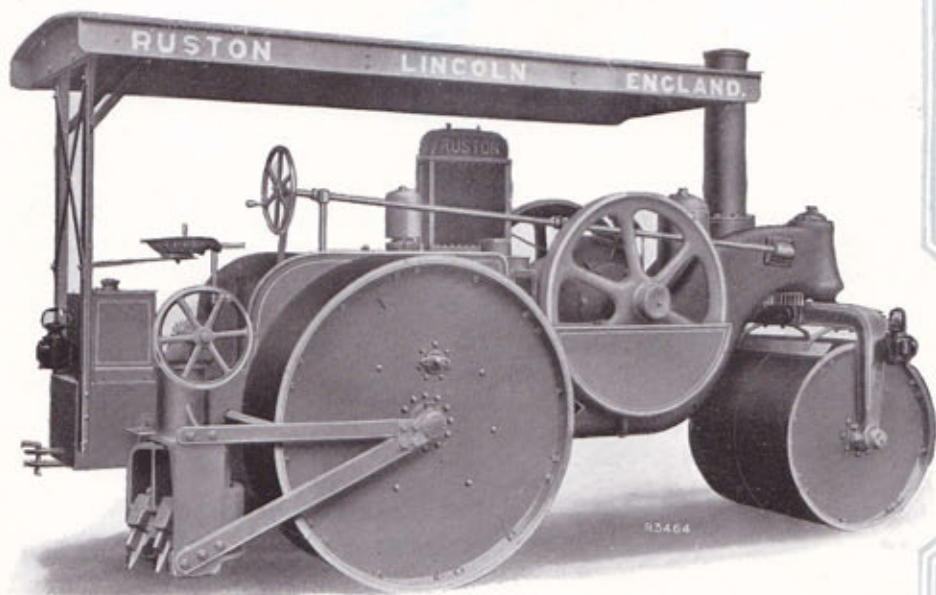
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CRUDE OIL ROAD ROLLERS

Class COR.



Two views representing our Marks L and N Rollers



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CRUDE OIL ROAD ROLLERS

Class COR.

THE ENGINE

The Engine, which is placed with the cylinder longitudinally on the frame, embodies the very latest Ruston-Hornsby Internal Combustion Oil Engine design. It is enclosed, and of the medium compression type, and runs on the four stroke cycle. *The Engine runs at a moderate speed, ensuring the minimum of wear and tear, and therefore long life of the wearing parts.*

Fuel. The Engine runs with the highest efficiency on a wide range of fuels, including petroleum, gas oil, solar oil and good residual fuel not exceeding .9 specific gravity.

The supply of fuel is automatically regulated according to the load upon the engine, this being accomplished by means of a highly sensitive governor. Fuel consumption is thus kept at a minimum without in any way affecting the smooth running of the engine.

Starting. On the Marks B & E a compressed oil vapour lamp is provided for heating the vaporizer, but no lamp is required when the engine is running.

On all other sizes by a Petrol starting attachment and the use of compressed air for imparting the initial movement to the flywheel.

Lubrication. Forced lubrication is applied to the main bearings and the efficiency of the system is such that only a very small amount of lubricating oil is needed.

In this connection it should be pointed out that the *small consumption of lubricating oil* and the *very low cost of fuel oil* effects a *very large saving* compared with expenditure for lubrication and fuel in the case of Road Rollers fitted with high speed petrol or paraffin engines, which is necessarily very high.

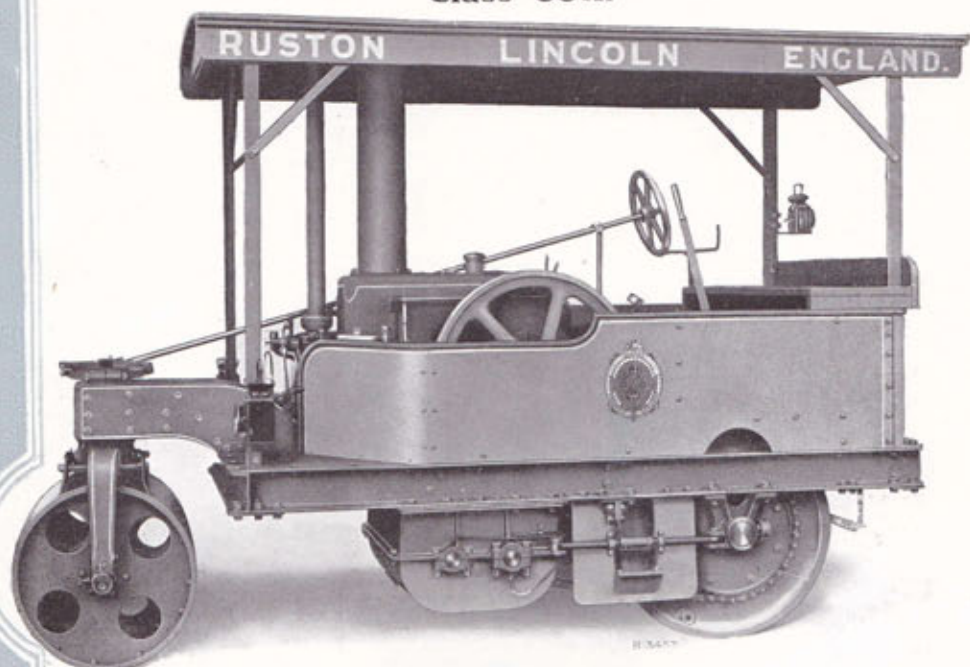
Silencing. An efficient silencer is fitted, the exhaust being carried up a chimney which clears the awning top.

Cooling. Cooling is effected on the Tandem Rollers, Marks B & D (see page 6) and Three Wheel Rollers, Marks F. H and J by means of a hopper, and on the Marks E, L and N Three Wheel sizes by water passing through a fan-cooled radiator.

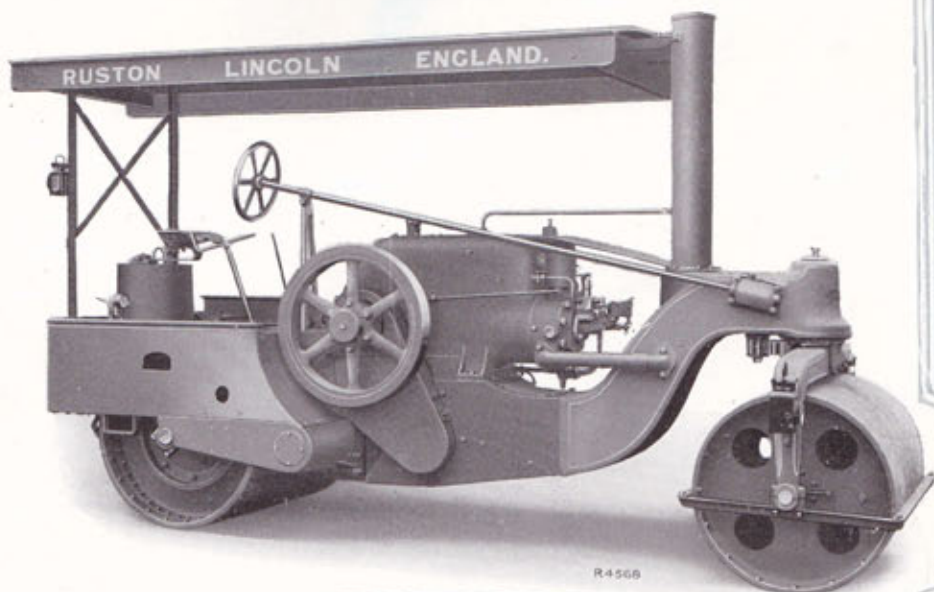
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CRUDE OIL ROAD ROLLERS

Class COR.



Ruston Tandem Rollers Marks B (top) and D (bottom)



R4566

CRUDE OIL ROAD ROLLERS

Class COR.

The Drive. Except on the Marks B, D and E Rollers, the drive is taken from the crankshaft first by a steel roller chain, which has suitable and accessible adjustments for taking up wear, then direct by steel spur gearing to the roller rims. On the Marks D and E Rollers the drive is taken by gear direct from the Crankshaft. The gears, with the exception of the final drive, are machine cut and enclosed. When the engine is required for driving concrete mixers or other machinery by belt, the travelling gears are disconnected by simply putting the control levers in "neutral position."

Mark B Rollers. The drive is taken from the crankshaft to the gearbox by a steel roller chain, which has suitable and accessible adjustment for taking up wear. The change speed and reverse gears are machine cut and totally enclosed. The final drive from gearbox to driving roller is by an adjustable steel roller chain.

Speeds. Three Wheel Roller. Three speeds in both directions are provided for as follows:—Half mile per hour; One mile per hour; Two and a half miles per hour. It will be noted that the bottom gear gives an ideal speed for working on steep gradients and for scarifying. On the Mark E Roller speeds are provided as on the Tandem Type.

Tandem Rollers. Two speeds in both directions are provided for as follows:— $5/8$ mile per hour; two and a half miles per hour.

Change Speed. The change speed and reverse gears are in constant mesh. The control levers are fitted in a convenient position for the driver, and in the case of the three wheel type rollers are arranged with an effective locking device.

Steering. The movement of the fork is controlled by a hand wheel conveniently placed in front of the driver. The wheel operates a worm gear acting on a steel trunnion; direct on the Mark B size and through spur gear on all other Rollers. The trunnion is turned to fit the forecarriage and hinged to the steel steering fork. By the adoption of this design the backlash common to chain steering gear is eliminated.

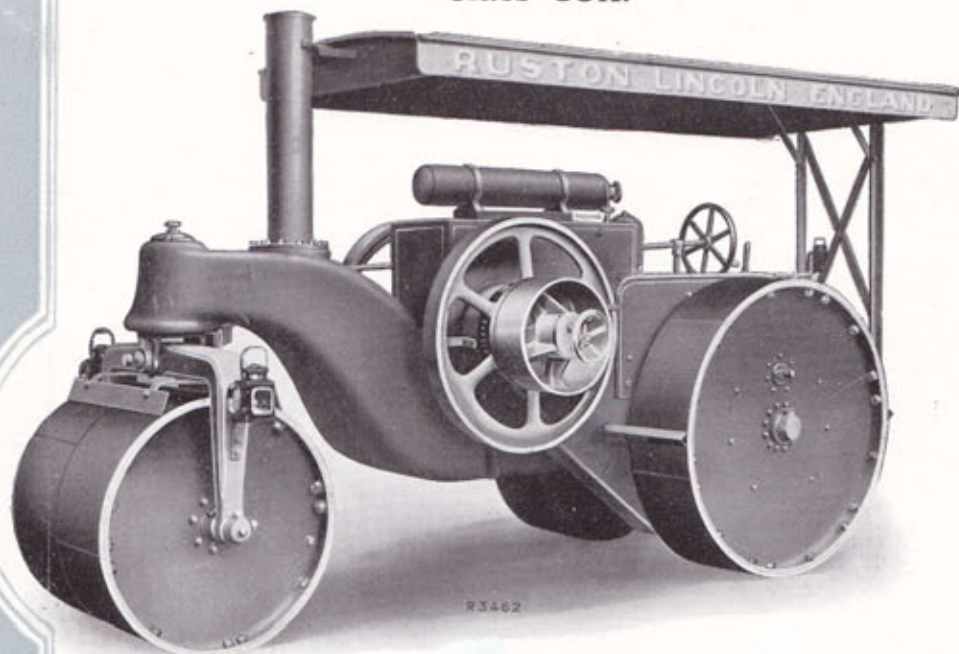
Rollers. Three Wheel Type. These are of the disc pattern, built entirely of steel and having *special hard quality renewable steel plate rims* bolted on in sections. There are no spokes to break or become loose, and the rims can be used until worn completely away, when new sections can be fitted.

The gripping power of wheels shod with steel plate is much greater than that of wheels with cast iron rims. This quality is of especial value in a Crude Oil roller, which is eminently adapted for working on steep gradients owing to its *freedom from the water-level difficulty* inseparable from steam boilers.

RUSTON

CRUDE OIL ROAD ROLLERS

Class COR.



On this illustration will be seen the pulley and clutch supplied as an extra when a roller is required for driving industrial machinery

ROLLERS—continued

The back rollers are of equal diameter at inner and outer edges, the road camber being accommodated by inclining the axle-ends. This reduces slippage and wearing of the rims caused by rollers which have unequal diameters on the inner and outer edges.

Front and back Rollers are constructed to receive water ballast when it is desired to increase weight, the operation of letting in the water or letting it out being a simple one. This is a feature which has several advantages. For example, when working on an exceptionally steep hill a better grip may be obtained by running off the water from the front roller; again, where the water ballast has previously been employed, and light bridges are to be crossed, the water may be run out from both front and hind rollers to reduce the weight. The Mark E size, being very small, is not arranged for water ballasting.

RUSTON

CRUDE OIL ROAD ROLLERS

Class COR.

ROLLERS—continued

Tandem Type. The front roller is made in two parts to allow of easy steering and constructed of steel plates and centres suitably bushed for the axle. The hind roller is designed for water ballasting, and, in the case of the Mark B, is of cast iron.

Scrapers. Efficient adjustable scrapers are fitted to both front and hind rollers.

Brakes. Three Wheel Rollers. Two independent asbestos-fabric lined brakes are fitted. The foot brake is provided with a catch enabling it to be held on for any length of time, while the drum, which is fitted to the change speed gear shaft, presents a very large radiating surface and is *water cooled*, and may thus be kept in action indefinitely without overheating. This does not apply to the Mark E size.

An auxiliary band brake, working on a drum on the last motion shaft and operated by a hand wheel with screw, is also fitted. The Mark E has double brakes acting directly on the wheels.

Tandem Rollers. Two independent asbestos-fabric lined brakes are fitted. The foot brake is of the internal expanding type, while the hand brake is an external contracting band brake operated by a screw.

Frame. The frame is of cast steel, of extremely strong and rigid design, carrying the bearings for all shafts and main axle in one solid unit. The engine is bolted directly on machined faces on the top of the frame, and misalignment of shafts and bearings owing to twisting of the frame is rendered impossible.

In the Mark B Tandem Roller the frame is built up of steel channels and plates securely braced by means of steel cross members and angles.

Machined pads are provided for taking the engine, gear box and axle bearings.



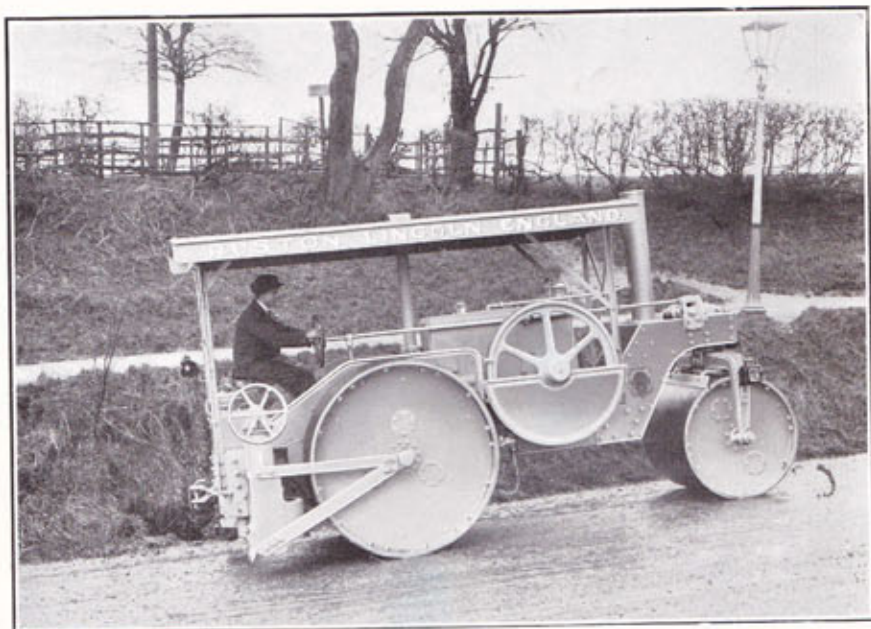
Painting and Outfit.

The whole equipment is painted, lined and varnished in the best style, and all necessary tools, tool box, driver's seat, instruction book, and equipment are supplied with each Roller.

RUSTON

CRUDE OIL ROAD ROLLERS

Class COR.



A Ruston Oil Roller ascending Cross 'o Cliff Hill, Lincoln.
Gradient at steepest part 1 in 7

Transmission

"Quick Reverse" Clutches

The transmission is on the latest Ruston-Hornsby improved "Quick Reverse" system which permits the direction of travel to be reversed instantly on any of the speeds with precision, and *without disengaging any gears.*

Two clutches are provided, one for forward and one for backward. Both are operated by one lever, a forward or backward movement corresponding to the desired direction of travel being all that is necessary. The adoption of transmission working on this principle removes the difficulty and risk otherwise present when changing gear on steep gradients. This simplicity in control allied with easy steering enables the driver to manoeuvre in traffic without difficulty or fatigue.

CRUDE OIL ROAD ROLLERS

Class COR.

EXTRAS, Three Wheel Type only,

except where otherwise stated.

Compensating Gear. (Three Wheel Type only). This enables the Roller to turn sharp curves when travelling without one of the driving pins being withdrawn. It also greatly facilitates the steering and prevents damage to the road when turning. It is included as standard on the Mark E Roller.

Awning. Taken over the full length of the roller and provided with side curtains. (Also supplied on Tandem Rollers.)

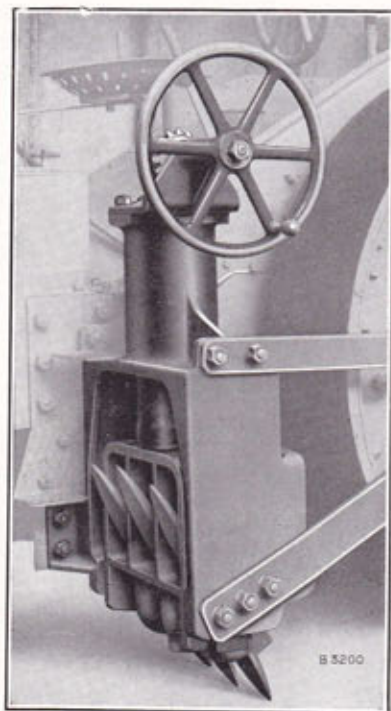
Pulley. A pulley with independent clutch can be fitted on the right-hand flywheel for driving a stone breaker or other machinery. Can also be fitted on Mark D Tandem Roller.

Water Sprayer. A tank with the necessary pipes and taps controlled by the driver so arranged that all three wheels may be sprayed. (Also supplied on Tandem Rollers.)

Winding Drum. (Three Wheel Type only). Complete with forty yards of best steel wire rope and rope guide rolls.

Scarifier. "Ruston" Reversible Scarifier attached on the right-hand side of Roller, the pull being taken direct from the frame and hind axle. Constructed of steel, simple in design and having no delicate screws or devices which are liable to injury from road grit or other causes.

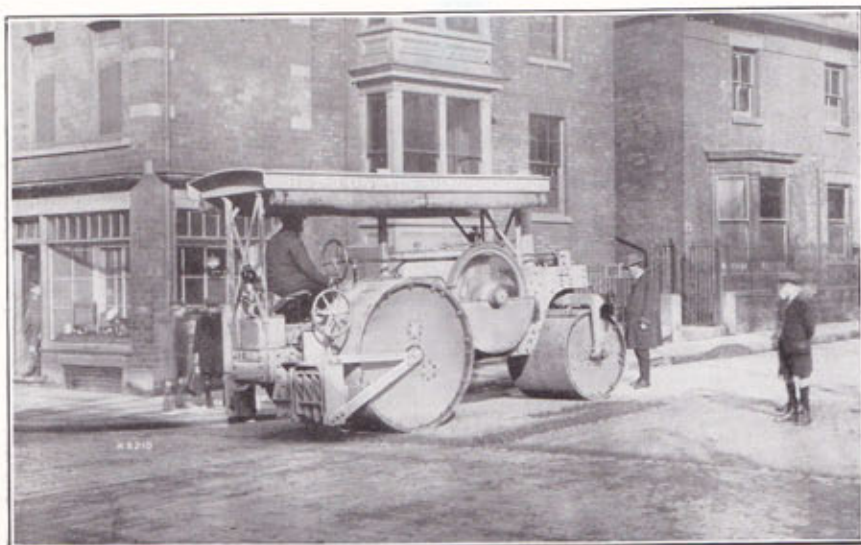
The Scarifier is made in one size, to work with one, two or three tynes according to the hardness of the road and depth of cut. Cannot be fitted on Mark B, D and E Rollers



RUSTON



The upper illustration shows a Ruston Crude Oil Roller engaged on making a new rural road. Our lower picture shows another Ruston engaged in "patching," at a corner where an old surface is being brought up to the level of a new road. The City Surveyor concerned found the "Quick Reverse" Oil Roller ideal for this work.



RUSTON



The above illustration shows Ruston Steam Rollers in India, one of the countries where large numbers of our Rollers have given the greatest satisfaction for many years. Ruston Steam Rollers, Single Cylinder and Compound, are made in sizes from 5 to 20 tons. In addition to Oil and Steam Rollers we supply Excavating Machinery for grading new roads.

While every care is taken in the preparation of this catalogue, which cancels all previous editions, the illustrations, specifications and dimensions must not be taken as binding until confirmed by us, alterations being necessary from time to time. Any variations from our standard specification may involve increase in price and delay in delivery.

Ruston & Hornsby Ltd Lincoln

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A1; ABC (4th and 5th Editions) and 6th Edition (five letter); Lieber's and Lieber's (five letter) American; Western Union and Western Union (five letter); Marconi's; McNeill's (1908 Edition); Bentley's Complete Phrase Code; The Motor Trade Code; Engineering and Private Code.

