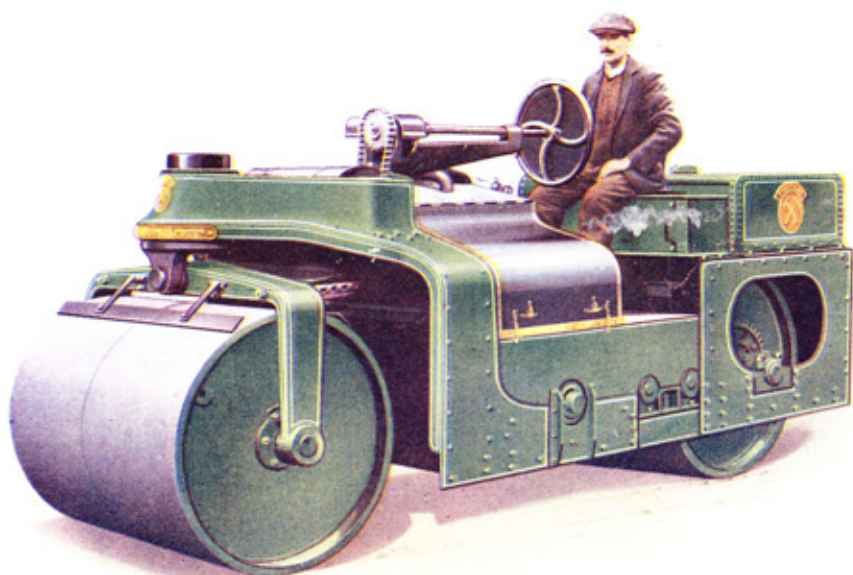


# MOTOR ROLLERS

*Quick-Reverse Series*



910. Barford & Perkins Ltd.  
Peterborough.

**Barford & Perkins, Ltd.**

**Peterborough**

**ENGLAND**

55

# MOTOR ROAD ROLLERS

Quick Reverse Type  
in weights  
6 to 10 tons



The only Motor Roller designed  
specially for Asphalt



## Barford & Perkins, Ltd.

ENGINEERS

PETERBOROUGH

ENGLAND

Telephones :

Peterborough 28  
Peterborough 479

Codes :

A.E.C. (5th and 6th Edition)  
and Bentley's

Telegrams :

"Barfords, Peterborough,  
England"



## SPECIAL NOTE.

*This Catalogue is a sectional List dealing with one series only of our rollers.*

*Our other publications are :—*

- No. 597. General Motor Roller Catalogue showing the whole range of our Rollers.*
- No. 601. Sectional List describing our " A " series of Motor Rollers, in weights  $1\frac{1}{2}$  to  $2\frac{1}{4}$  tons, for grass work of all kinds ; also special Rollers for footpaths.*
- No. 596. Sectional List describing our " E and F " series of Tandem Rollers, in weights 4 to 10 tons, for light and medium road-making, tarmacadam and fatching.*
- No. 602. Sectional List describing our Three-Wheel series of Rollers in weights 8 to 16 tons, for the heaviest forms of roadmaking.*
- No. 592. Sectional List describing the Thackray-Barford Patent Independent Scarifier, 2 and 4-tyne.*

# Quick Reverse Water Ballast Motor Road Rollers

(Q SERIES)

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Patent No. 225134.

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**T**WENTY-ONE years ago we designed and built the first motor-driven Roller. Our subsequent success may be gauged from the fact that during the last few years the majority of prominent steam roller manufacturers throughout the world have turned their attention to rollers driven by the internal combustion engine.

We have many more Motor Rollers at work than all the other British manufacturers combined, and a far larger trade than any other firm in the world.

Motor Rollers are our principal manufacture—not a “side-line.” During the growth of the business we have laid out and equipped our motor roller works with specialised machinery solely for their production.

For many years our Rollers have been at work in every part of the world. During that time we have been in close touch with users of large fleets in many countries, so that our latest models are the result of a practical experience in design which is unique.

In our latest models we have more than maintained our lead in design. They embody higher powered engines, larger front rollers, more substantial construction throughout, and other valuable improvements which add considerably to the cost of manufacture.

The Barford & Perkins' rollers are built to give long and solid service with the minimum cost of upkeep. We sell on quality and performance in actual use—not on price.

There are machines on the market of designs cheaper to manufacture and, in particular, with cheaper engines, but our unquestioned position as the leading makers proves that our policy meets with the approval of practical users.

During the last completed year over half our output was absorbed by repeat orders from satisfied users.

After three years of the worst slump the general engineering industry has ever experienced, the demand for our Rollers is such, that we are now engaged in important extensions to our works to cope with the volume of orders.

We suggest that it is to the best interest of the user to purchase a machine of proved worth with over 20 years' experience and reputation behind it, from a firm whose greatest advertisement is thousands of Rollers working to the entire satisfaction of their owners.

**Range of Sizes.** We manufacture Motor Rollers in a wide range of sizes and types, in weights of 16 tons down to 1½ tons—a more complete range than that offered by any other maker.

Their uses include—

Road-making and repairing of all kinds, including special Rollers for footpath work and for bituminous carpeting.

Also all kinds of grass work, such as racecourses, polo grounds, aerodrome landing grounds, cricket grounds, football grounds, and golf links.

The following pages illustrate and describe only our " **QUICK REVERSE** " series of Motor Rollers which are specially designed for rolling asphaltic compounds and hot bituminous carpeting. The standard sizes are 6, 7 and 8 tons, and with the aid of water ballast the range is from 6 to 10 tons. The most popular size is the Q7, 7 ton.

*A list of publications describing our many other sizes and types will be found at the beginning of this Catalogue.*

Our "**QUICK REVERSE**" **MOTOR ROLLER** has the following outstanding advantages over the American-type tandem Steam Rollers hitherto used for this class of work :—

**Greater Ease  
in Handling.**

On a steamer the driver has to

- (1) Steer.
- (2) Regulate the control valve.
- (3) Break and size coal.
- (4) Dismount frequently to fire the boiler and keep a clear fire.
- (5) Maintain the water level and boiler pressure.
- (6) Take up additional coal and water.

Our motor roller is clean and compact, the engine speed is automatically governed (though the speed may be reduced, but not increased, by the throttle) and the driver's sole duty comparable to the above while at work is :—

To sit and steer.

His whole attention can be concentrated on his primary job—rolling the road in accordance with his orders from the road foreman.

**View from  
Driver's Seat.**

The driver has an uninterrupted view of the work in hand both forward and backward. On the American-type Steam Roller he is perched over the small roller and his view is interrupted by the boiler and chimney, to say nothing of the discomfort due to smoke and fumes, his head being, practically speaking, in line with the chimney top.

**Low Running  
Cost.**

In most districts the daily cost of the petrol used does not exceed that of the corresponding coal for a steam roller. There are many countries where it is less.

In addition—

All the expense of carting is **SAVED**.

The expense of carting water is **SAVED**.

The fuel tank holds about two days' supply, and a fuel storage tank holding a week's supply can be fitted if desired as an extra.



**No Wasted Fuel** Road rolling in conjunction with a gang of men, is usually an intermittent job. When not actually rolling, the engine is switched off and no fuel is consumed.

**No Wasted Time.** Getting up steam.  
Stoking boiler.  
Taking up water.

The one day a fortnight required for washing out the boiler, is saved.

**No Smoke. No Dirt.**

**Low Cost of Repairs.**

**Time Saved in Repairs.** The engine is of the usual four-cylinder four-cycle type, similar to those used on the highest class of commercial vehicles. It is of the highest class workmanship and design, of robust construction throughout and with an ample reserve of power. Being governed to run only at a moderate speed and the work requiring for the most part a proportion only of the power available the repairs and maintenance costs are very moderate.

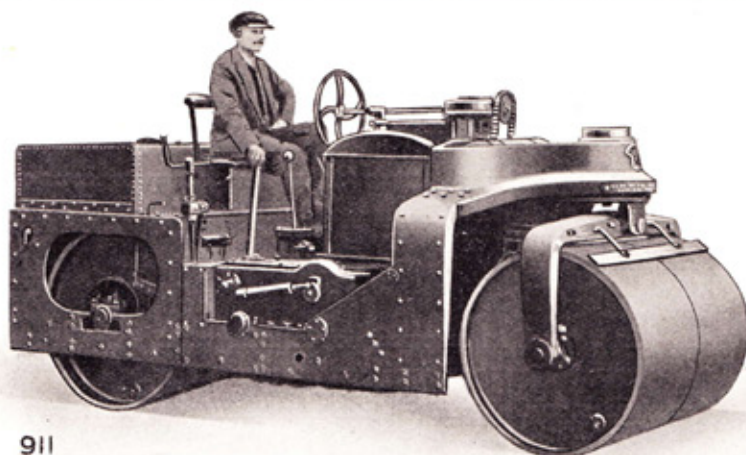
All wearing parts are renewable, interchangeable and quickly and easily fitted.  
The engine is immediately accessible on lifting the bonnet.

A complete engine overhaul can be carried out by a mechanic on the spot in three or four days, at a fraction of the cost of a similar overhaul to a steam engine and boiler. The latter would as a rule, have to be sent to a works with special facilities for boiler work, and the repair might easily take two months.

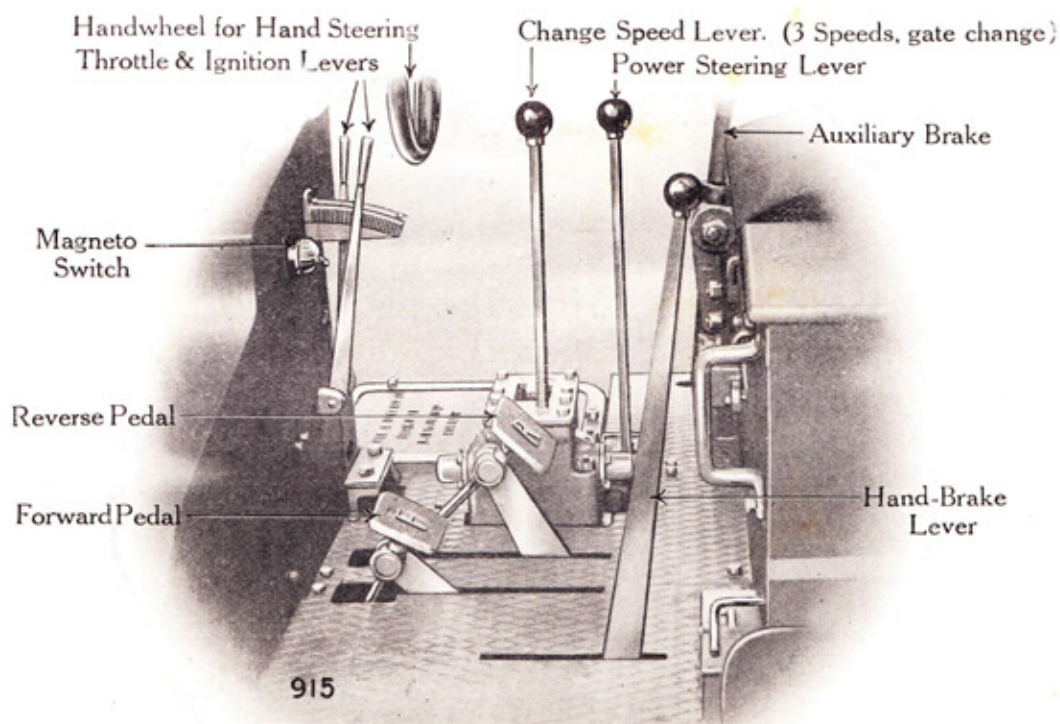
**Depreciation.** This should be allowed for at the same percentage as in the case of a Steam Roller.

The engine of the Motor Roller will give at least as long service as the firebox of a Steam Roller both under average conditions. Being a separate unit from the rest of the machine, the engine can be removed or replaced, temporarily or permanently, in a few hours.

A new engine complete could be supplied at less than the cost of full boiler repairs to a Steam Roller.



Driver demonstrating easy control of Power Steering Gear.



BARFORD & PERKINS, LTD.  
PETERBOROUGH.

View showing convenient and central grouping of Controls.



The " PIONEER QUICK REVERSE " roller has many advantages over other makes of motor rollers offered for asphalt work, these being in many cases only adaptations of older designs and not at all suitable for the very particular work of asphalt rolling.

Our special design provides the following exclusive features—

- |                                      |   |
|--------------------------------------|---|
| <b>Patent Quick Reversing Gear.</b>  | An immediate reverse is obtained by the use of two plate clutches actuated by the driver's feet, or by a single hand lever if preferred. This special feature obviates any tendency to " dwell."  |
| <b>Smooth Reversing.</b>             | These plate clutches give the smooth reverse so essential for successful work, and entirely obviate the jerk experienced where cone clutches are fitted.  |
| <b>Low Centre of Gravity.</b>        | The centre of gravity is lower than that of any other make, with the advantage, of course, that oscillations, whether transverse or longitudinal, are proportionately reduced. No springs are fitted in the main axle brackets in this particular type of roller, as it is necessary to reduce any possible source of oscillations.   |
| <b>Large Diameter Front Rollers.</b> | The front rollers being large in diameter give a better rolling effect. Small diameter front rollers tend to push the material, with formation of waves.  |
| <b>Variable Weight.</b>              | By means of our well-known water ballast principle the weight of the roller can be increased by about $1\frac{1}{4}$ tons by filling the back and front rollers. The variable weight can be increased still further when the water sprinkling tank is filled, making a total increase of weight of about $1\frac{3}{4}$ tons. By altering the disposition of the water ballast the rolling pressures front and back can be equalised. |
| <b>Spur Wheel Drive Throughout.</b>  | Spur Gear Drive instead of Chain Drive, the chain drive being unsuitable for asphalt work owing to " dwell " when reversing, especially when the roller has been in service for some time. All the gears used, whether of fine pitch or coarse, are machine cut from the solid, eliminating backlash and ensuring smooth working.   |

**Short Wheel  
Base.**

The very short wheel base (9 ft. 2 in.) makes the machine easy to handle as it answers the steering quicker. This is a very valuable feature for cross or sweep rolling on narrow roads.

**Power  
Steering.**

Simple power steering gear with hand steering gear in a convenient position for operating, the driver being able to use either at will.

**Water  
Sprinklers.**

A fine spray of water is often necessary to prevent the road material adhering to the rollers. This is provided by a 120 gallon water tank and suitable pipes to both front and back rollers. The water flows by gravity (no pump being required), and the supply of water is controlled from the driver's seat.

**Low Fuel  
Consumption.**

The consumption of petrol (gasolene) is about four gallons per working day on average work. Owing to the very intermittent nature of bituminous carpeting work this roller is fitted as standard for petrol fuel only.

The above important points of design should be considered when comparing our machine with those of cheaper construction.



## DETAILED DESCRIPTION OF THE ROLLER

**Engine (General).** The four cylinder 28 Brake Horse Power Engine is of the highest class in design and workmanship, of robust construction throughout and with an ample reserve of power.

It is entirely without unnecessary complication and is built to give long and continuous service with the minimum of attention and upkeep.

Where smooth running is important a four cylinder engine is imperative. It is impossible to obtain from a single or double cylinder engine the regular movement and flexibility given by four cylinders.

**Governor.** The engine is fitted with a powerful governor which greatly facilitates driving, and also prevents a careless driver from overrunning the machine.

This ensures both long life for the engine, which is not subjected to the high engine speeds and maximum loads associated with automobile, commercial vehicle and tractor work, and also relieves the driver of any necessity to control the throttle.

**Cylinders.** The cylinders are cast monobloc and are of close grained cast iron, and  
**Water**  
**Circulation.** jacketed, with water cooled heads and valve passages, the water circulation being on the thermo-syphon principle.

**Detachable Heads.** Detachable heads are fitted to the cylinders.

**Valves.** The inlet and exhaust valves, which are interchangeable, are made high from carbon steel.

**Crankshaft & Camshaft.** The crankshaft and camshaft are of special steel, ground on all journals.

**Timing Gear.** The timing gear is enclosed in the crankcase, the wheels being of extra wide surface.

**Ignition.** The ignition is by high tension magneto.

**Carburettor.** The Zenith-Albion Carburetter is fitted.



**Lubrication.** Lubrication is by the " Albion-Murray " system, whereby fresh oil is pumped from the oil tank to the bearing surface at frequent intervals, no oil passing through the bearing surface more than once.

**Clutches.** These are two in number and are contained within the Gear-box, each being a plate clutch with " Ferodo " Lining, one clutch giving the forward drive, and the other the reverse drive, the actuating gear being moved by foot pedals. The spring pressure acts only on the clutch which is engaged, no pressure being required on the foot pedal to hold clutches in engagement.

**Flexible Coupling.** A flexible coupling is provided between the engine and gear-box. The flexible coupling absorbs the shock of reversing and reduces the wear on the bearings if any misalignment should occur due to wear.

**Gear and Gear-boxes.** The gear-box is a totally enclosed design allowing for thorough lubrication. Ample allowance is made to meet the very considerable shocks and strains incidental to roadmaking. All gears are of steel and machine cut from the solid to ensure smooth running. There are three forward speeds and three reverse speeds (for road speeds see specification).

**Final Drive (Gear Drive).** The drive from the gear-box to the back roller is through steel spur wheels machine cut from the solid. All pinions are steel forgings.

**Steering.** The roller is steered by a worm and worm wheel with sprocket wheel and chain connecting the front roller to the hand steering wheel immediately in front of the driver. This method effectively prevents shocks being transferred to the driver's arms from the rollers, which, being in two parts, answer quickly and readily to the steering wheel.

**Power Steering.** A power steering gear is provided, which has sufficient power to turn the front rollers from side to side in a few seconds, even when the roller is at a standstill. The actual time occupied from centre to extreme position is only about 4 seconds.

This device consists of two small metal cone clutches, which derive their power from the clutch spindle in the main gear-box. The drive is transmitted by a roller chain to the steering handwheel spindle and operates from this point through the standard steering arrangement. The clutches are controlled by means of a simple lever in a convenient position near the driver's seat, and only a slight pressure on the lever is necessary. This pressure is exerted in the direction it is required to turn, i.e., left or right ; therefore, there is no possibility of mistake or confusion in steering.

The hand steering wheel is conveniently placed in front of the driver and can be used at any time without the power steering being disconnected.

A safety gear is provided which automatically stops the power steering if the rollers are locked round beyond a safe angle.

The whole steering gear is extremely simple, and does not require any attention beyond occasional oiling.

**Brakes.**

A hand operated band brake acting on the intermediate shaft is provided as standard equipment, but in addition an auxiliary hand brake acting on a brake drum on the driving roller is recommended where the roller is required for work in a hilly district.

**Frame.**

The frame is of exceptional strength, of channel section, reinforced with deep plate sides, stiffly braced and provided with suitable cross members for carrying the various parts of the machine. The front of the frame is firmly bolted to the large head casting, which contains our patent spring steering head, and is arranged to allow considerable ascillations of the front roller. When passing over uneven surfaces the frame remains comparatively steady, and is thus relieved of severe strains.

**Freedom  
from  
Projections.**

All the gears are within the frame, and there are no objectionable projections. The outside edge of the frame is only  $3\frac{1}{2}$  inches beyond the edge of the back roller on the brake side.

- Rollers.** The 6 Ton (Q6) has steel plate back and front rollers.  
The 7 Ton (Q7) has steel plate front rollers and cast iron back rollers.  
The 8 Ton (Q8) has cast iron back and front rollers.  
(A minimum thickness of  $\frac{5}{8}$  in. front and  $\frac{3}{4}$  in. back for the steel plate rollers).
- Awning.** An awning is not provided as standard equipment, but if specially desired can be supplied at an extra charge.
- Tools.** A complete set of tools is provided with each machine, including all necessary spanners and wrenches, oil can and small wearing parts.
- Test.** A thorough road test is made of each machine before leaving our Works.



## APPROXIMATE SHIPPING PARTICULARS

		MEASUREMENTS.						Gross Weight		Net Weight	
		ft. ins.	ft. ins.	ft. ins.	m/m	m/m	m/m	cwts.	kilos.	cwts.	kilos.
1. Motor Roller } complete }	"Q6"	13 10	5 9	6 0	4220	1755	1830	138½	7035	121	6145
1. Motor Roller } complete }	"Q7"	13 10	5 9	6 0	4220	1755	1830	160	8120	142½	7240
1. Motor Roller } complete }	"Q8"	13 10	5 9	6 0	4220	1755	1830	180	9135	162½	8255
1. Awning	"Q6""Q7" or "Q8"	8 10	5 8	1 4	2695	1730	410	6½	330	3½	180



## SPECIFICATION

	"Q6"	"Q7"	"Q8"
Code Word .....	FERLY	FERMA	FERAC
Weight Empty (in working order) approx.	6 tons	7 tons	8 tons
Weight Full (with Water Ballast) approx.	7½ "	8½ "	9½ "
Back Rollers .....		3' 6" dia. x 4' 2" wide	
Front Rollers .....		5' 3" dia. x 4' 2" wide	
Rolling Width .....		4 ft. 2 ins.	
Wheel Base .....		9 ft. 2 ins.	
Total Length .....		13 ft. 3 ins.	
Width over Frame .....		5 ft. 3 ins.	
Height to top of Steering Gear Cover .....		5 ft. 10½ ins.	
Height with Awning .....		8 ft. 7 ins.	
Water Ballast in Rollers (approx.) .....		1 ton 3 cwts.	
Water Ballast in Tank (approx.) .....		10½ cwts.	
Ground Clearance under frame at side .....		12 ins.	
Ground Clearance (Minimum) .....		9 ins.	

**Speeds.** 1½, 2½ and 4 miles per hour (both Forward and Reverse). By throttling down the engine a still slower speed may be obtained whenever desired.

**Horse Power.** (Petrol) 28 B.H.P.

**Engine.** Four cylinder 98 m/m. x 127 m/m. Albion Patent Lubrication—Governor—High Tension Magneto.

**Radiator.** Car type, with large cooling area, assisted by Fan driven from the engine in the usual manner.

**Gears** of steel and machine cut throughout.

**Ball and Roller Bearings** on Clutch Spindle and Ball Thrust Washers for Actuating Gear.

**Flexible Coupling** on transmission.

**Three Point Suspension** for Engine and Gear-box.

**Turning Radius** (approx.) To outside edge of rollers, 12 feet.

### STANDARD FITTINGS.

**Brake.** Hand Brake on Transmission.

**Water Sprinkling Tank.** 120 gallons. Sprinkling Pipes to both Front and Back Rollers.

### EXTRA FITTINGS.

<b>Awning</b> .....	Code Words
<b>Brake.</b> Auxiliary Screw Brake on Back Axle .....	Fling.
<b>Fuel Storage Tank</b> .....	Flown.
<b>Pulley</b> (with extended spindle for driving machinery) .....	Flail.
<b>Water Pump</b> for filling the tank and rollers in country districts (supplied complete with Suction and Delivery Hose) .....	Float.
<b>Spring Drawbar for Hauling</b> (fitted on the back of the roller frame) .....	Fleet.
	Drwbr.

# Barford & Perkins' Motor Rollers

HAVE BEEN ADOPTED BY

His Majesty's Government	The Japanese Government
The French Government	The Norwegian Government
The Russian Government	The India Office
The Italian Government	The Commonwealth of Australia
The Spanish Government	The Dominion of Canada
The Egyptian Government	The Dominion of New Zealand

## THE CROWN AGENTS FOR THE COLONIES

The War Office	The Road Board
The Admiralty	H.M. Office of Works
The Air Ministry	The Port of London Authority

They are used by over 100 Public Authorities in

## THE UNITED KINGDOM

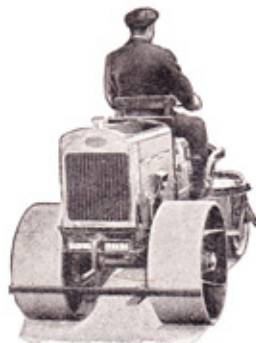
and in

Albania	Fiji	Norway
Antigua	Finland	Palestine
Argentina	France	Persia
Australia	Germany	Peru
Austria	Gold Coast	Russia
Azores	Greece	Siam
Bahamas	Grenada	Siberia
Barbados	Holland	Sierra Leone
Bermuda	Hong Kong	South Africa
Belgium	Hungary	Spain
Bosnia	Iceland	Straits Settlements
Brazil	India	St. Vincent
British East Africa	Indo-China	Sudan
„ Guiana	Italy	Sumatra
„ North Borneo	Jamaica	Sweden
„ West Indies	Japan	Syria
Burmah	Java	Tanganyika
Canada	Leeward Isles	Turkey in Europe
Canary Isles	Lemnos	Turkey in Asia
China	Malta	Trinidad
Cochin-China	Mauritius	Uganda
Colombia	Mesopotamia	Uruguay
Cyprus	Montenegro	United States
Denmark	Morocco	Windward Isles
Dutch East Indies	New Zealand	Yugo-Slavia
Egypt	Nigeria (North & South)	Zanzibar
Federated Malay States		

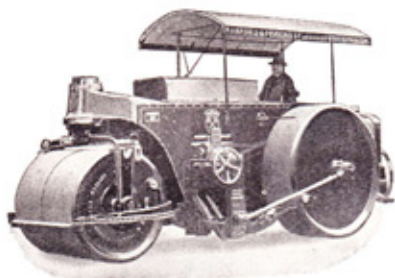
# A few of our Types of Motor Rollers



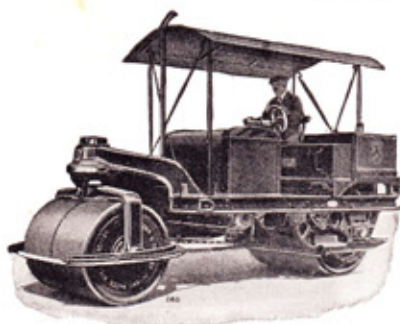
Type "A3" for Grass.



Type "A" for Footpaths.



"T" series in sizes 8 to 16 tons.  
For heaviest forms of road making.



Types "F8" and "FSS"—  
8 to 9½ tons.  
For Tarmacadam and Patching.



"E" series in sizes 4 to 7 tons  
For light road-making—  
particularly in partially  
developed countries.

*As the largest manufacturers we offer a more complete range than any other maker in the world. Particulars of our other publications are given on Page 2.*



