

# Straight from the (4½) Horse's Mouth

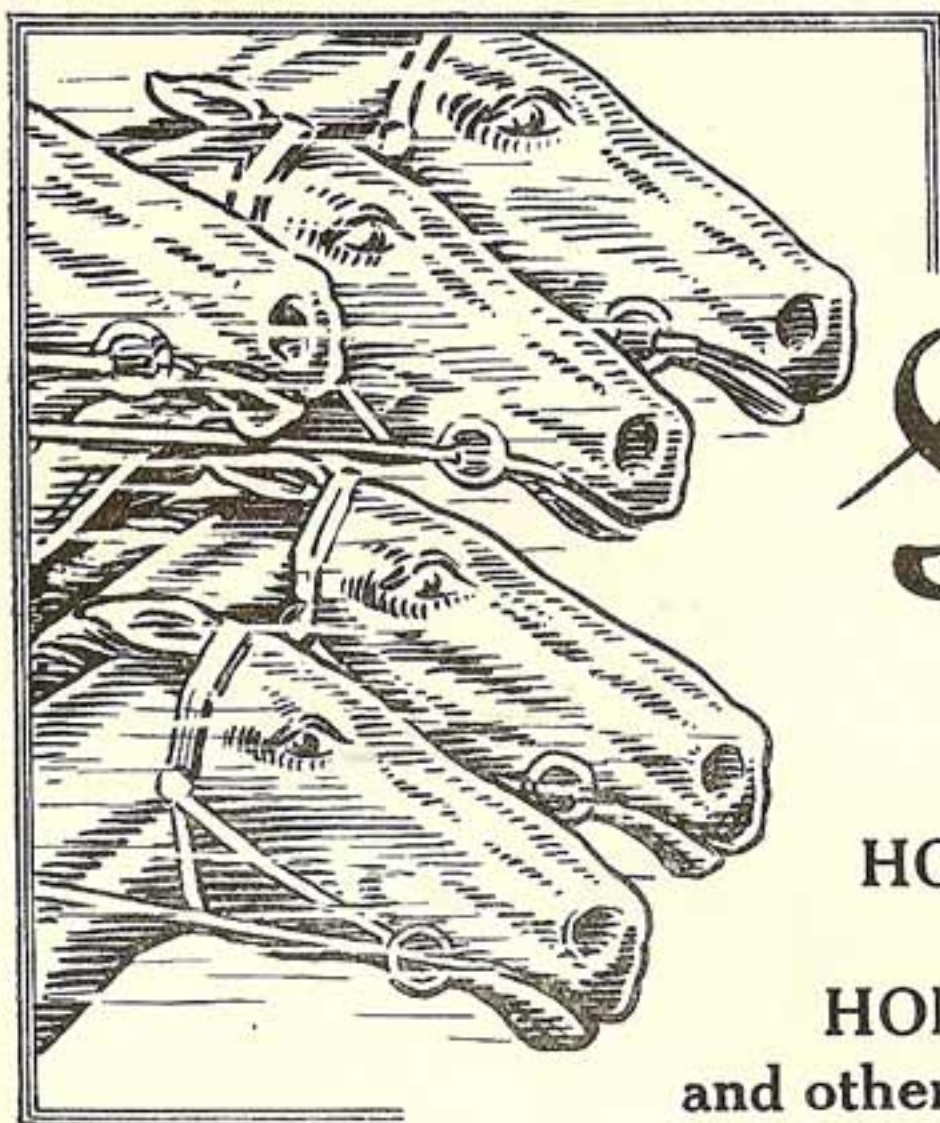
HORSE SENSE  
about  
HORSE POWER

About that  
**P**erfect **M**asterpiece  
the  
4½ H.P. · 4 Speed



Produced by  
**P**helon & **M**oore Ltd.  
**P**ioneers of **M**otor-cycles  
Works: Cleckheaton, Yorks.  
Showrooms & Sales Headquarters  
4 Berners Street,  
Oxford St, W. 1.





# Straight

**HORSE SENSE**  
about  
**HORSE POWER**  
and other information.

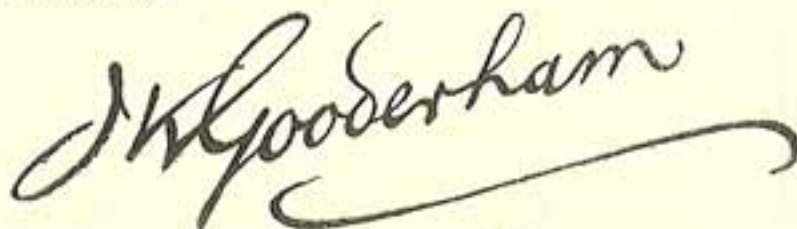
**I** SUBMIT, with great respect, that for 1923 you are demanding an outfit which can "go anywhere" and "do anything"—an outfit which can cruise up hills so steep that they seem to lean back, and which can compel you to forget that an "ordinary hill" exists. Then you insist upon rapid acceleration and that high turn of speed—not "fussy" speed—but just that "little more out" which we all seek when the spirit moves us. Being a man of method you seek to plan every run along time-table lines, with confidence in the knowledge that nothing short of an earthquake can shatter that schedule. Then, because you are not of that nature which looks for trouble, you aim at the last word in simplicity of mechanism—easy to drive—combined with foolproofness. Comfort always makes one happy with the world at large, and so you aspire to an outfit which can assure you the utmost of this quality. Then, being a man of discrimination, you desire handsome, refined appearance and finish combined with individuality, not only in regard to the "tout ensemble," but in the smallest detail. You are in search of a pedigree thoroughbred, not only to satisfy mere self, but to make appeal to the eye and taste of the passenger, mindful of the fact that *she* may desire to drive sometimes. These are the irreducible minima of your demands and you couple them with moderate outlay and minimum running cost. Finally, convinced that such an outfit is to be found, you are equally insistent that it shall carry the industrial hall-mark—have behind it a sound old-established firm of unassailable reputation, integrity and prestige, which maintains a highly efficient spares, repairs, service, and thoroughly organised agency system capable of giving satisfaction, anywhere and at any time. Your requirements are exacting, and rightly so, but there is *one*, and *only one*, outfit which *completely*—mark the word *completely*—fills this onerous bill. This is the P & M. That daring claim is justified by the overwhelming triumph of the P & M in the A.C.U. Six Days' Trials in August, 1922. The strenuous conditions governing this—the world's greatest motor-cycle trial—are so framed as to determine irrefutably which is the best machine for every-day touring purposes. The P & M team performance was unequalled, and of such outstanding merit as to compel record by the leading press throughout the country. Submerging partisanship and prejudice, the press was for once unanimous in declaring that in the P & M was to be found exactly what the public seeks—the *happy medium*. It was the Press—not we—who asserted that Phelon & Moore's clever adaptation of a moderate 4½ h.p. unit with a 4-speed gear had rendered superfluous the twin cylinder outfits of 6 to 9 h.p. I merely mention this because, after all, the *public press* merely reflects *public opinion*, which is *your opinion*. But the pæons of praise did not surprise Phelon & Moore, Limited, who pioneered the motor-cycle movement—they built the first British Motor-Cycle in 1900—and who have always blazed the trail in motor-cycle



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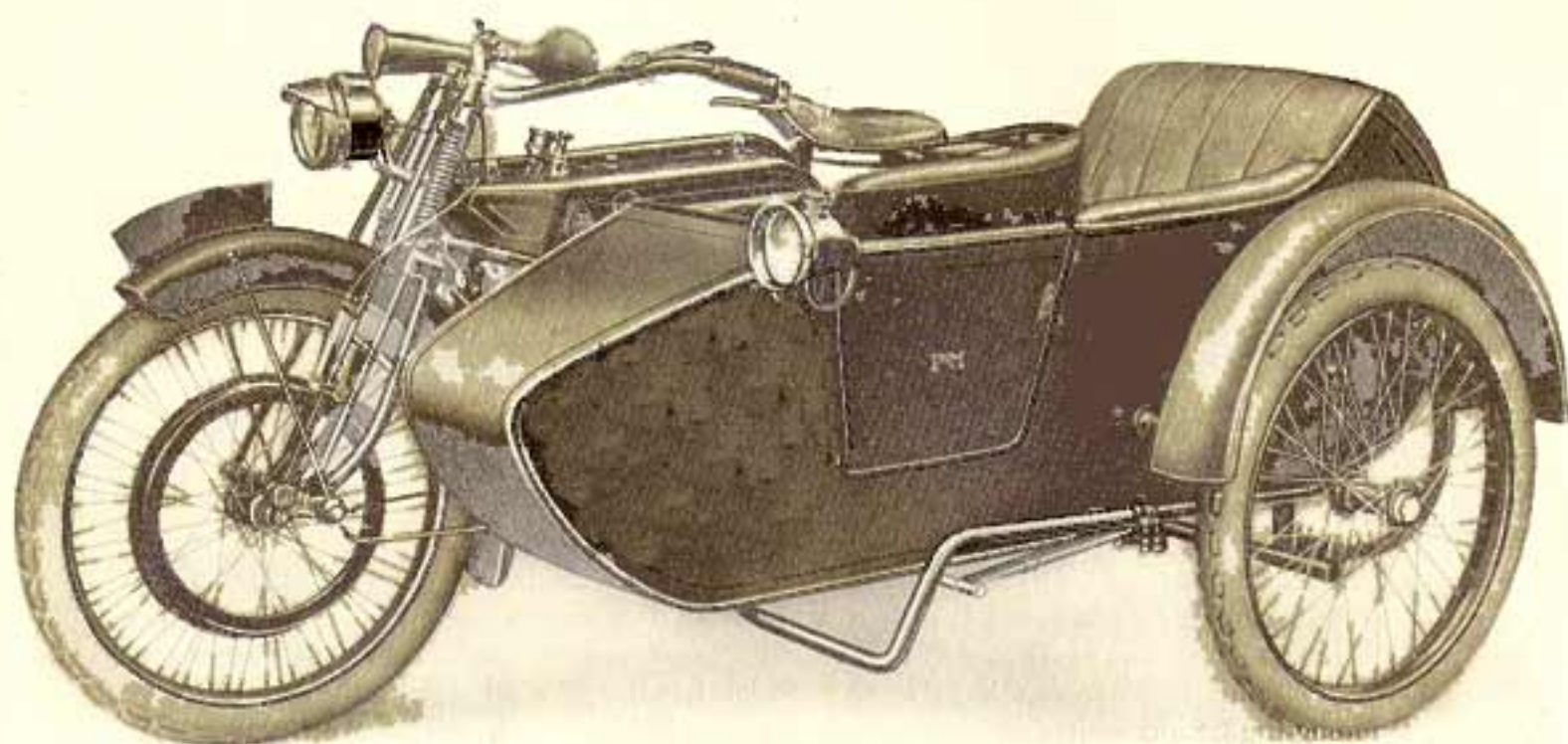
design and construction. The famous 1922 trials of the A.C.U. merely revealed to the public what P & M learned when they launched this 4-speed model in the Six Days' Trials held in 1921. Then it forced its way to the front by performance which was second to none. Throughout the 1922 season the 4-speed model has been tried out to the last degree, concluding the period with the smashing victory already mentioned. The P & M emerges triumphant from the 1922 season to enter 1923 as *the only exhaustively tested 4-speed machine* upon the market—the *only machine* in which moderate horse-power is so scientifically employed as to yield everything which, hitherto, has only been forthcoming from machines of twice its power—units far more costly to maintain. With such a machine of merit and performance it is difficult to stress one feature more than another, but it is in its hill-climbing capacity that it has particularly distinguished itself. It has conclusively proved itself to be superior to any existing machine of double the power in the subjugation of the "bank." In the P & M you have the expression of how to meet the public desires in its most compelling form. In the P & M you have *Horse Sense* as well as *Horse Power*. The secret does not lie in excessive—and costly—horse-power, but in the *scientific application of moderate power*. *The secret lies in the 4-speed gear*. 1923 will be the 4-speed year. British motor-cycle history, in the main, is the Twenty years' story of the P & M way of doing things. In design and construction it has always been a year or two ahead of its rivals. History is being maintained; other manufacturers will follow the P & M lead once more; will embrace the 4-speed gear; but it will take them a year or two to make up the lee-way. Consequently, are we not completely justified in our assertion that the P & M is the *one and only* machine which is able to fulfil the whole of the exacting demands which you impose for your 1923 outfit? As to those other factors which enter into the perfect machine—reliability, durability, simplicity, comfort, refinement of details, "finish," economical running and so on, little need be said, because the reputation of the P & M in these respects is universal, and a by-word in motor-cycling and manufacture throughout the world. The prodigious feats of performance and endurance fulfilled under murderous conditions by the thousands of P & M's supplied to the Royal Air Force in all the theatres of the Great War has passed into fully-recorded history. As to stability, integrity, and prestige of the firm, and the completeness of the organisation behind the machine for the supply of spare parts, fulfilment of repairs, and provision of general service through a world-flung agency system—well, these have been matters of comment throughout the industry for twenty years. We are so confident in the knowledge of having found, at last, *the happy medium*, and one which will satisfy the requirements of the *great majority* of motor-cyclists as to have adopted the policy of concentrating upon the production of one model only—the 4½ h.p. 4-speed—but we offer the choice of three types.

Yours faithfully,



Sales Manager.





4½ h.p. 4-speed "A" Combination - £123 10s.

**FRAME.** The well-known unique P & M method of building the engine into the frame provides a frame with immense strength and exceptional lightness, and is designed to take the sidecar on either side of the machine without any clips being necessary. All tubes are of round section.

**ENGINE.** 3½ bore x 3½ stroke (84.1 x 100 m.m.) 555 c.c. Specially designed for sidecar work with cooling fins of exceptional depth. It is absolutely oil tight, and presents a perfectly clean appearance, the timing case being circular and the valves covered by spring-on plates. The half-compression device is enclosed in the timing box.

**LUBRICATION** is by a slow speed plunger pump, driven from the camshaft, delivering oil through a sight feed on the top of tank. The emergency hand pump also delivers through this sight feed. The oil release discharges into the chain covers, providing automatic chain lubrication.



**P & M FOUR SPEED GEAR.** This gear is the latest development in motor-cycle construction, enabling the driver and passenger to go anywhere under any conditions with speed and comfort.

The gear box provides ratios of

5.3, 7.8, 12 and  $17\frac{1}{2}$  to 1,

and gives a two-speed footstarter for instantaneous starting whether the engine is cold or warm. All engagements are frictional, the gear being as easy to operate as the old P & M two-speed.

**SPRING FORKS.** The well-known P & M spring forks with exceptional bearings all provided with screw down greasers are retained. The fork, however, has been lightened without any sacrifice of strength.

**CARBURETTOR.** Latest type B & B Carburettor with starting pilot jet is fitted.

**MAGNETO. E.I.C.** On the P & M, ideal magneto position has been obtained.

**CONTROLS.** Ignition, valve lifter, throttle, air and front brake levers are all on the handlebars, all wires passing inside the bars. Half-compression, right-hand side of engine. Engine starter right-hand side of gear box. Back brake by hand lever and pedal on right-hand side of machine interconnected. Gear lever on right-hand side of tank.

**TRANSMISSION.** By two  $5/8''$  x  $1/4''$  Hans-Renold chains from spring shock absorber on engine shaft to the gear box, and one chain to the back wheel.

**CHAIN COVERS.** These have been re-designed, being made now in four pieces only. The front case is of cast aluminium, and all parts are removable with ease for chain adjustments, wheel removal, etc.

**WEIGHT.** (With empty tanks and without accessories) 280 lbs.

**TANK.** Holds 2 gallons of petrol and  $3\frac{1}{4}$  pints of oil. Petrol outlets controlled by needle valves fitted with adjustable glands.



**BRAKES.** Contracting band on back wheel, and pivoting block working in "V" belt rim on front wheel.

**SUSPENSION.** Brooks B600 double cantilever saddle, giving complete comfort on the worst roads.

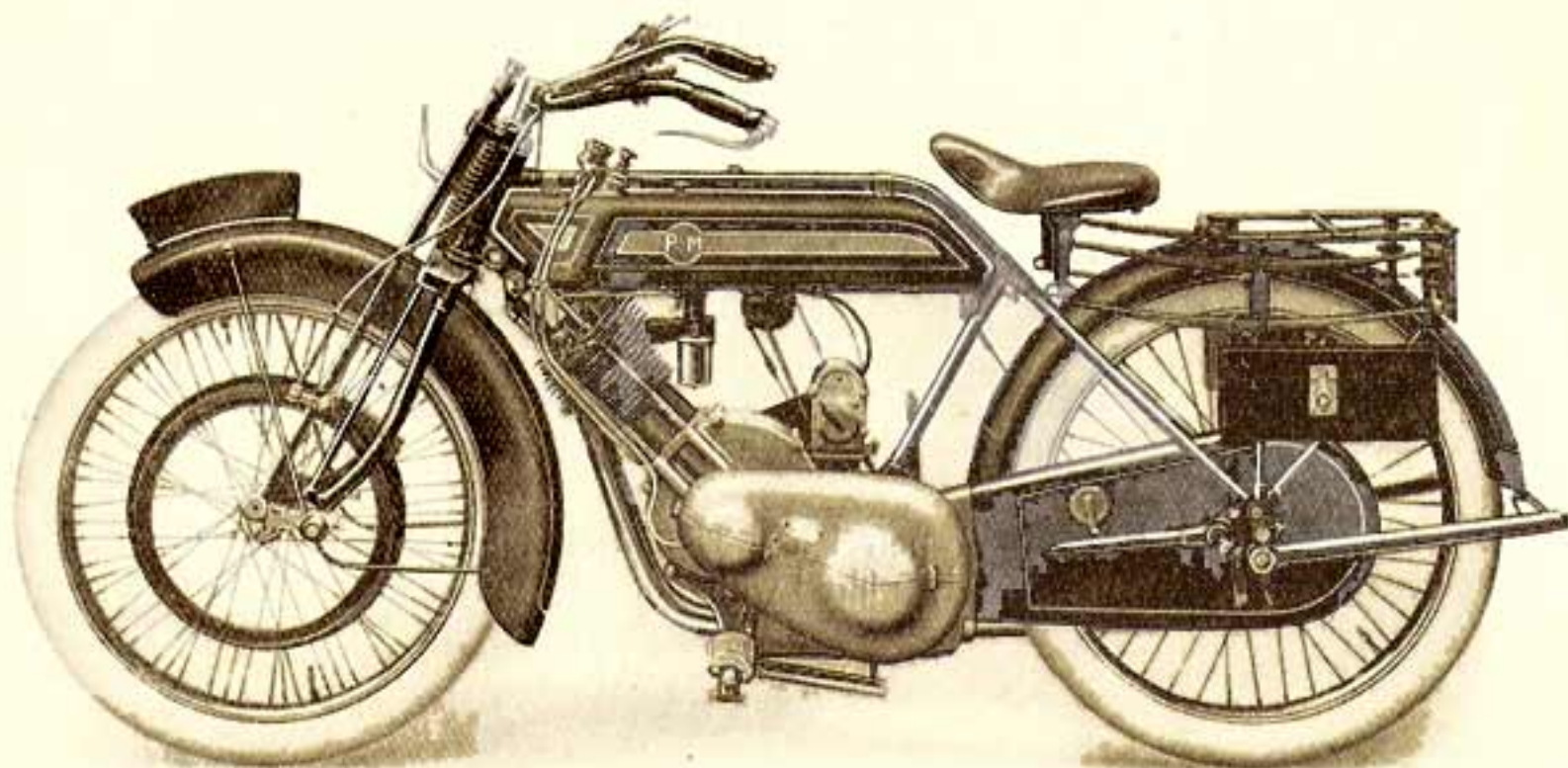
**MUDGUARDS AND WHEELS.** Well-balanced, single piece front mudguard and  $5\frac{1}{4}$ " wide back guard. 700 x 80 (26" x 3") tyres—back wheel fitted with security bolts.

**GROUND CLEARANCE.** 10" from crank case.  $5\frac{1}{2}$ " from footrest.

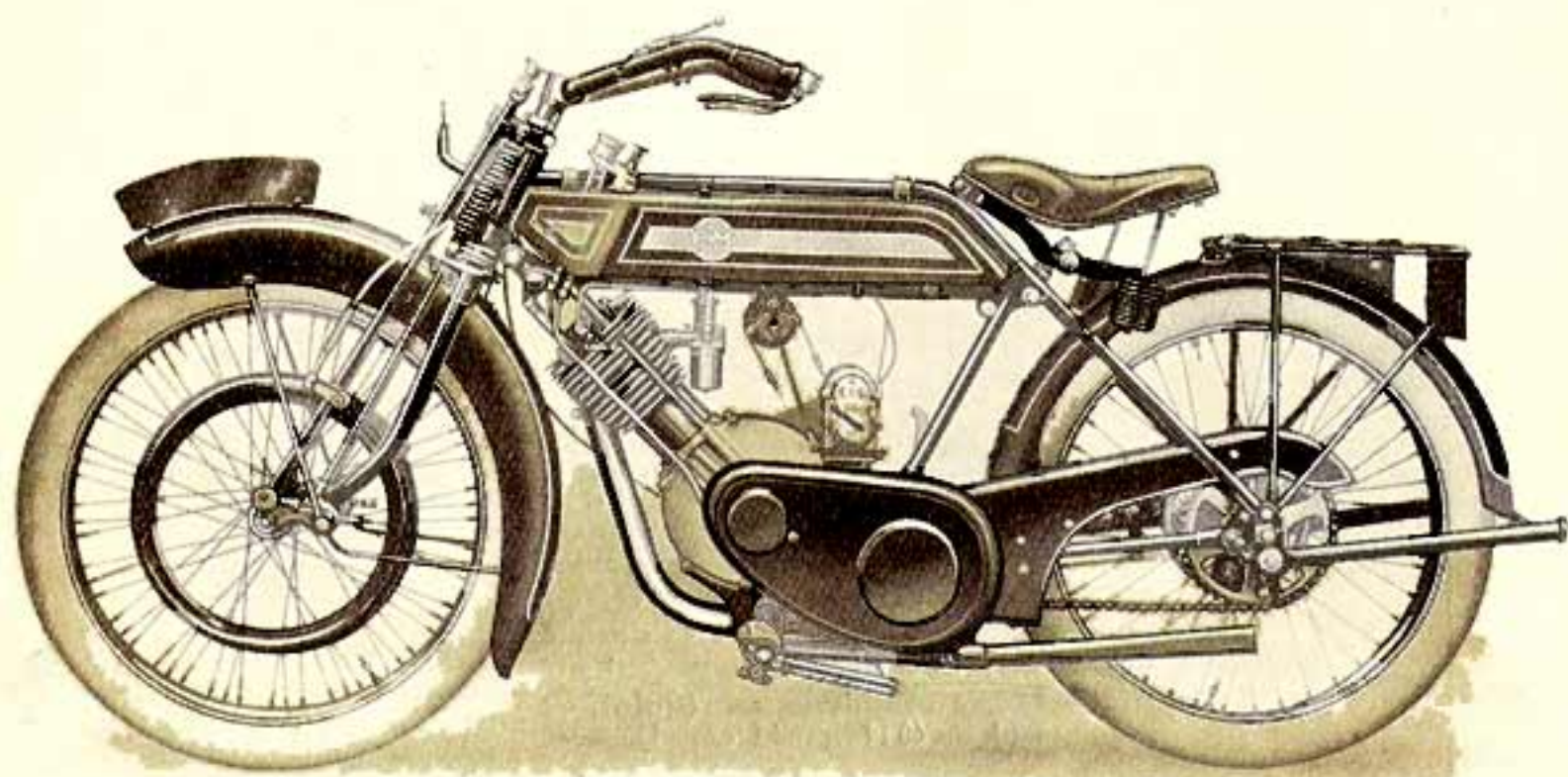
**STANDS.** Back stand fits into new type clip on back mudguard, and front stand is fitted under footrest with automatic spring release.



4½ h.p. 4-speed "A" Model, Solo - £97 10s.







4½ h.p. 4-speed "B" Model, Solo - £92 10s.

**4½ h.p. 4-speed "B" Combination - £117 10s.**

The specification of the "B" model is the same as the "A" model, with the following exceptions:—

The special Brooks Cantilever saddle is not fitted.

A front chain cover and back chain guard are fitted instead of completely enclosed cases.

The ratchet hand brake is not fitted, and there is only one tool bag.

The sidecar body is fitted with a movable back instead of hinged flap.





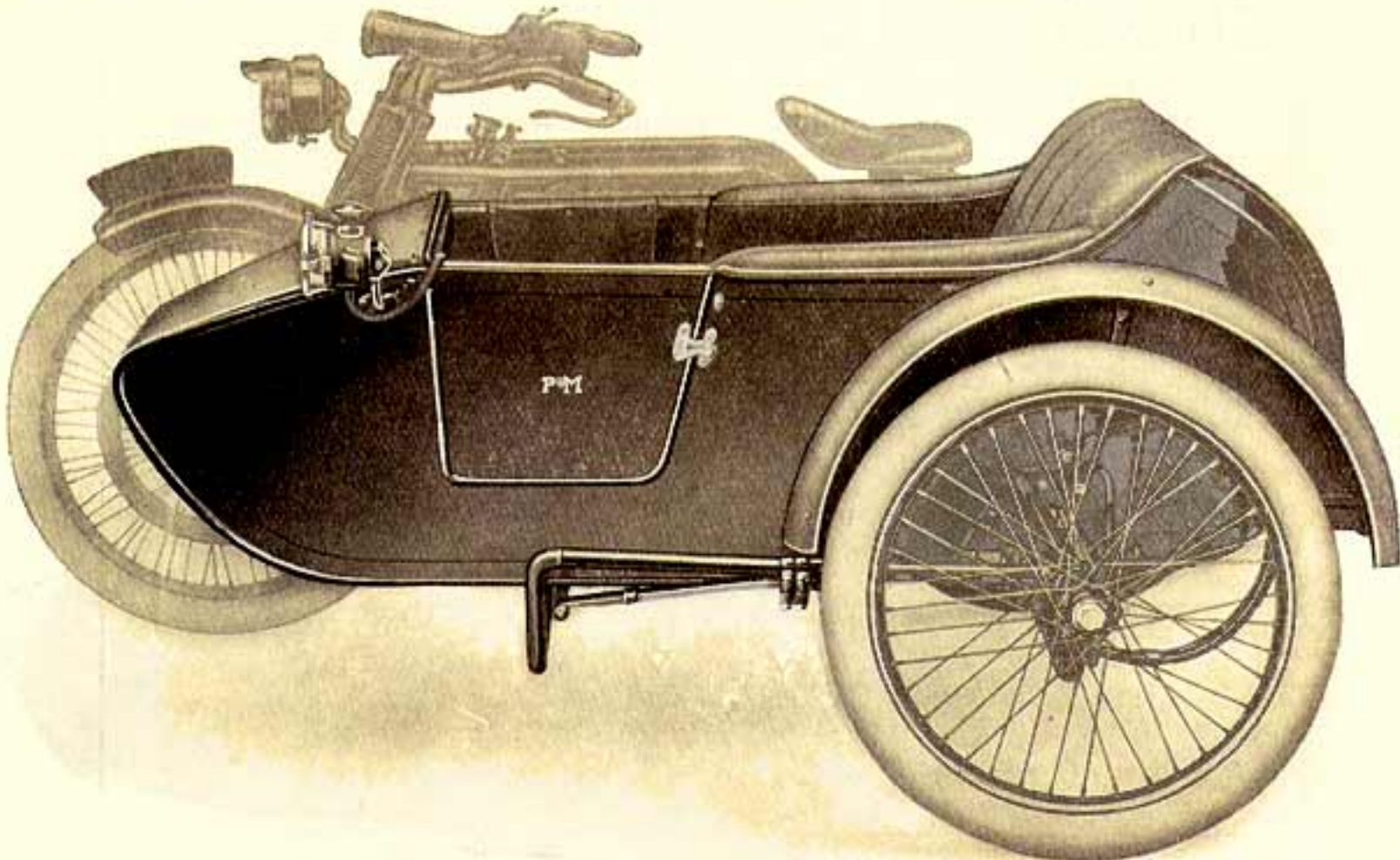
## EQUIPMENT.

<b>Type "D."</b>	<b>Acetylene Set (Sidecar).</b> Lucas 454 Acetylene Head Lamp, Lucas 350 S/C Lamp, Lucas 344 Tail Lamp, Tubing, Connections etc., Lucas special large Generator, Lucas No. 60 Horn, Licence Holder ... ..	<b>Total £4 0 0</b>
<b>Type "F."</b>	<b>Acetylene Set (Solo).</b> Lucas 454 Acetylene Head Lamp, Lucas 344 Tail Lamp, Lucas special large Generator, Tubing, Connections etc., Lucas No. 60 Horn, Licence Holder ... ..	<b>Total £3 13 6</b>
<b>Type "G."</b>	<b>Lucas Accumulator Set (Sidecar).</b> 618 Battery in tin case, M41 Head Lamp, R25 Sidecar Lamp, M.T. 10 Tail Lamp, Switch S25, Complete set Cables and Sundries, Lucas No. 60 Horn, Licence Holder ... ..	<b>Total £6 8 0</b>
<b>Type "J."</b>	<b>Lucas Accumulator Set (Solo).</b> With No. 60 Horn and Licence Holder ... ..	<b>Total £5 18 0</b>
<b>Type "K."</b>	<b>Lucas Magdyno Set (Sidecar).</b> With No. 60 Horn and Licence Holder ... ..	<b>Total £15 18 0</b>
<b>Type "L."</b>	<b>Lucas Magdyno Set (Solo).</b> With No. 60 Horn and Licence Holder ... ..	<b>Total £15 8 0</b>

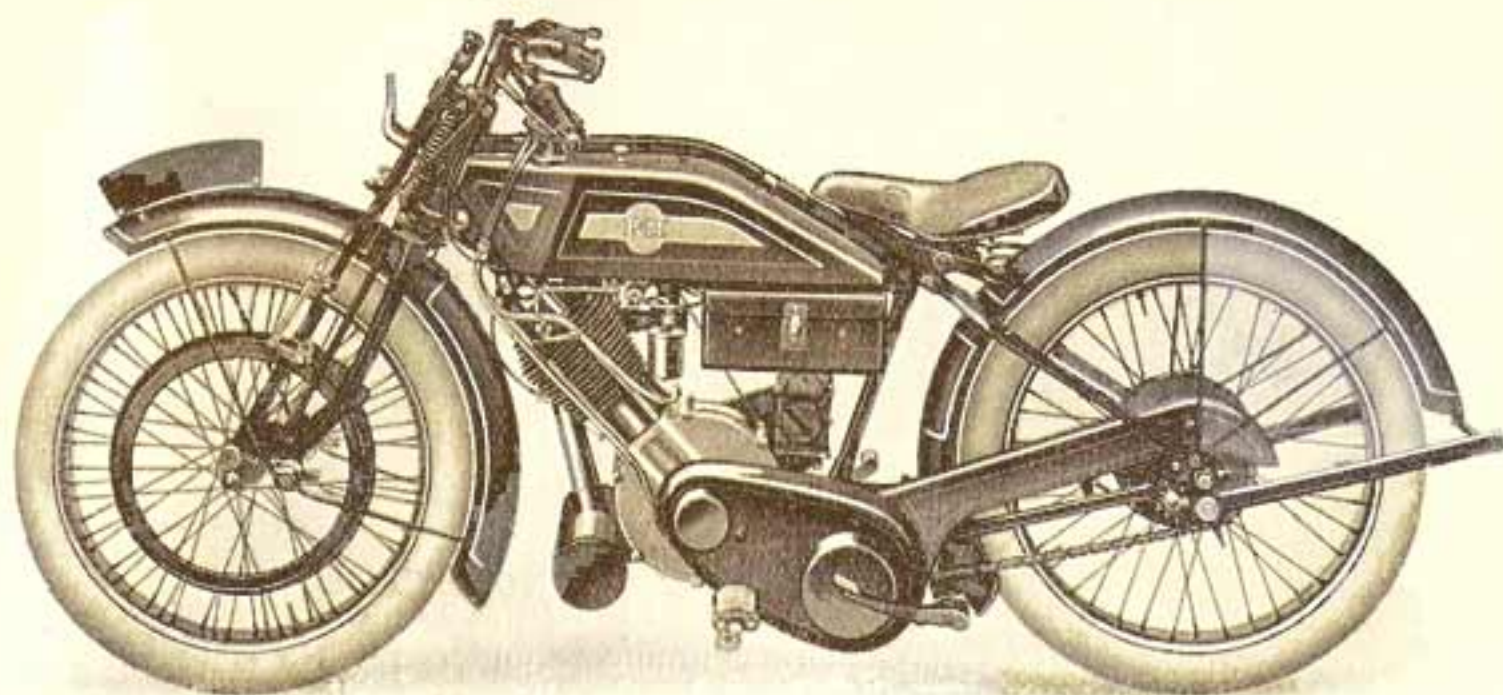
## P & M SIDECAR.

The chassis is manufactured throughout by us, and having been designed for P & M machines, no adjustments are provided, with a consequent gaining of strength and lightness. A further improvement is the attachment of the mudguard to the body itself, where it receives the benefit of the springs. The springing is of the underslung type, giving extreme comfort with a low position. The body is of the highest quality throughout, with an exceptionally deep back and ample space for luggage in the bulbous back. Weight of Sidecar 134 lbs.

Sidecar "A" Model - £26. "B" Model - £25.







## The "PANTHER"

4½ h.p. 4-speed Solo - £90.

This machine comes into the class commonly known as Sports models, but it is not, as is so often the case, a standard model with a few details removed—a light uncomfortable saddle fitted—different type of handlebars, etc. Such a machine, although faster than the standard from which it is derived, remains nevertheless the same proposition in a more uncomfortable form.

The P & M "Panther" is expressly designed for being ridden in absolute security and comfort at the high-speeds the modern engine will give. The standard 4-speed P & M has been developed mainly for sidecar use, but the solo rider's needs are embodied in the design of the "Panther" in a way that has never been done before.

The remarkably successful result is due to a combination of those qualities which he desired. The heaviest units *i.e.* the flywheels, the engine, and gear box have been lowered to the utmost possible extent consistent with the ample clearance which is necessary in a machine which will be ridden under all conditions in all parts of the world. The famous P & M design by which the engine is part of the frame permits of this being done in a way not possible if the engine had been upright. The superb riding position is the result of exhaustive experiments. The top of the saddle is only 28 inches from the ground so that the shortest rider can place his heels squarely on "terra firma." When the feet are placed on the footrests there is an instant feeling of perfect security and comfort, the knees lying in an ideal position against the tank.

The handlebars, although practically straight, give absolute control without any stretching or strain of any part of the body, thus obviating backache and cramp. It is a solid fact that the machine can be ridden at high speed through grease and over very bad surfaces, with a feeling of complete security which enables the high speed of the machine to be used to its fullest extent.



We have left to the last that vital feature which makes the machine stand out above any other motor-cycle adapted for a similar purpose, and that is the 4-speed gear. The horse-power developed by the 555 c.c. P & M engine combined with the comparatively low weight of the complete machine would at first thought suggest that four speeds were unnecessary. That is not so, and were the machine fitted with three speeds it would in common with other makes of the same class be capable of speeds up to 50 and 55 miles an hour with the ability to climb abnormal gradients under adverse conditions, but it is no exaggeration to say that the pleasure of riding is increased 50% by the four speeds. The present generation of motor cyclists does not know of the joy of a really high gear, and on the "Panther" a top gear ratio of  $3\frac{1}{2}$  to 1 is provided, leaving the other three speeds on the same basis as is usual with the old-fashioned three-speed machine. This high gear enables the machine to travel under favourable conditions at a speed of 40 to 45 miles an hour on a mere whiff of gas, and a mile-a-minute gait is comfortably within its capacity.

All this, be it remembered, is attained with a complete sense of comfort and security, and gives a standard of motor-cycling pleasure hitherto unknown.



**FRAME.** Although primarily designed as a solo machine, full provision has been made for fitting a light sporting sidecar, while maintaining the characteristics of a high speed touring mount. When supplied for sidecar work, a larger sprocket is fitted on the back wheel, giving a slightly lower range of gear ratios.

**ENGINE.** This is a development of our highly efficient standard engine. The compression is slightly raised, and a die-cast aluminium alloy piston is fitted.

All the well-known features are retained, such as enclosure of the valves, half compression device, and mechanical lubrication delivering through a sight feed on the tank.

**SPRING FORKS.** These are the standard P & M type, set at exactly the correct angle to give effortless steering, and add to the extraordinary stability of the machine.

**GEAR RATIOS.** These, as the result of careful experiment, range from  $3\frac{1}{2}$  to 1 on top and 11 to 1 on bottom.



**GEAR CONTROL** is by means of a rocking pedal operating the clutches. When the lever on the side of the tank is in one position the two top gears are operated by the pedal ; and in the other position, the two lower gears.

**TRANSMISSION.** This is the normal P & M type with two chains from the engine shaft. On account, however, of the higher gear ratios it has been possible to reduce the size of the sprockets, and therefore the cases are very much smaller. The guards, which completely protect the primary and the final drive, are made in one piece, and are instantly removable.

**WEIGHT.** 256 lbs.

**TANK.** Holds 2 gallons of petrol and  $3\frac{1}{4}$  pints of oil.

**BRAKES.** P & M contracting band type on back wheel and dummy belt rim type on front wheel.

**GROUND CLEARANCE.** 5 inches.

**TOOL BAG.** Fitted underneath the tank.

**GENERAL.** In all other respects the specification remains the same as the "B" Model.

The following extras can be fitted if required: —

Kickstarter,  
Carrier,  
Brooks Cantilever Saddle,  
Dynamo Electric Lighting.

▽      ▽      ▽

The following extras can be fitted to the various models.

				£	s.	d.
Kickstarter ...	...	...	For "Panther" model ...	1	0	0
Carrier ...	...	...	For "Panther" model ...	1	12	0
Brooks' Cantilever Saddle ...	...	...	For "Panther" and "B" models	2	10	0
Extra Toolbag ...	...	...	For "B" model ...		7	6
Ratchet Hand Brake ...	...	...	For "B" model ...	1	1	0
Leg Shields ...	...	...	For all models ...	1	2	6
Speedometer ...	...	...	For all models ...	4	10	0
Aluminium Number Plates ...	...	...	For all models ...		17	6
Bluemel Windscreen ...	...	...	For "A" or "B" sidecars ...	3	10	0
Luggage Carrier ...	...	...	For "A" or "B" sidecars ...	1	12	0
Luggage Carrier ...	...	...	For Semi-Sports body ...	1	6	0
Tansad Pillion Seat...	...	...	For "A" or "B" models ...	1	14	0
Child's Dickey Seat ...	...	...	For "A" model sidecar ...	2	10	0
"A" or "B" Sidecar, fitted with raised flap and special Bluemel windscreen ...	...	...	...	6	0	0

Insurance—comprehensive policy from £6 according to value and risks covered.