Preliminary Issue.

The 21 h.p. 6-CYLINDER LANCHESTER

DESCRIPTIVE MANUAL.

The LANCHESTER MOTOR Co. Ltd.

Head Offices and Works : MONTGOMERY ST., BIRMINGHAM.
Telephone : Victoria, 526 (Pvte. Bch. Ex.) *Telegrams :* "Motivity, Birmingham."

Body Building and Repair Depts : FALLOWS ROAD, BIRMINGHAM.

London Depot and Showrooms : - 95, NEW BOND STREET, W.1.
Telephone : Mayfair, 6110. - *Telegrams :* "Rebalance, Wesdo, London."

London Repair Department : STAR ROAD, WEST KENSINGTON, W.14.
Telephone : Western, 3368.

Manchester Depot and Repair Department : - - - 88, DEANSGATE.
Telephone : Central, 1763. *Telegrams :* "Motivity, Manchester."

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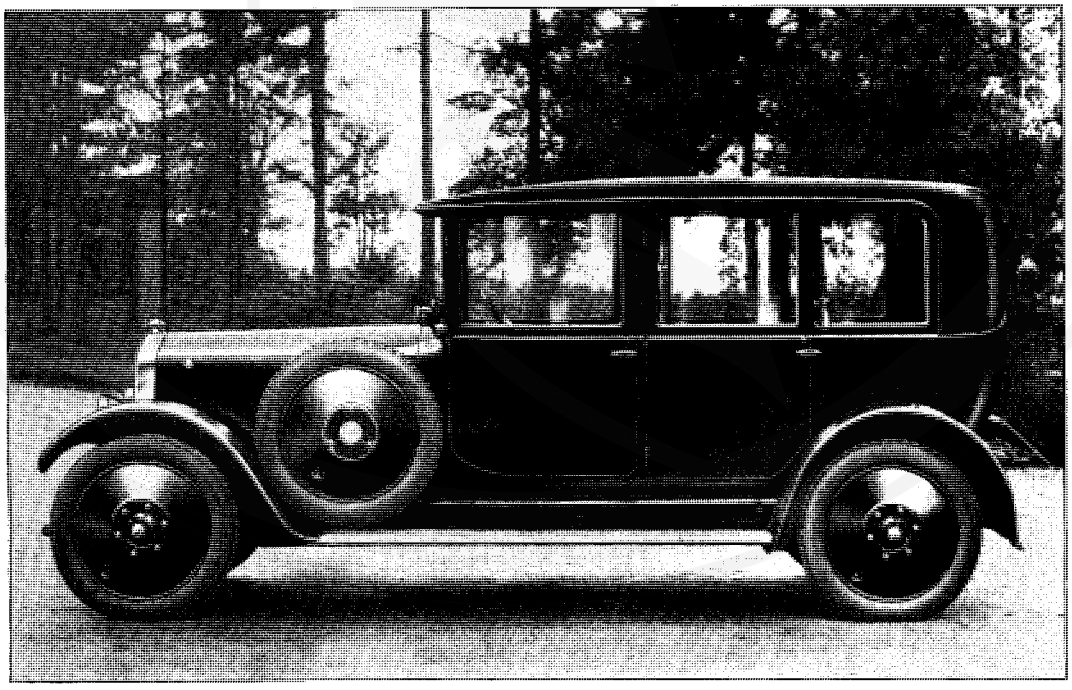


21-h.p. 6-Cylinder Lanchester 6-Seat Enclosed Drive Limousine.

21 h.p. Descriptive Manual.

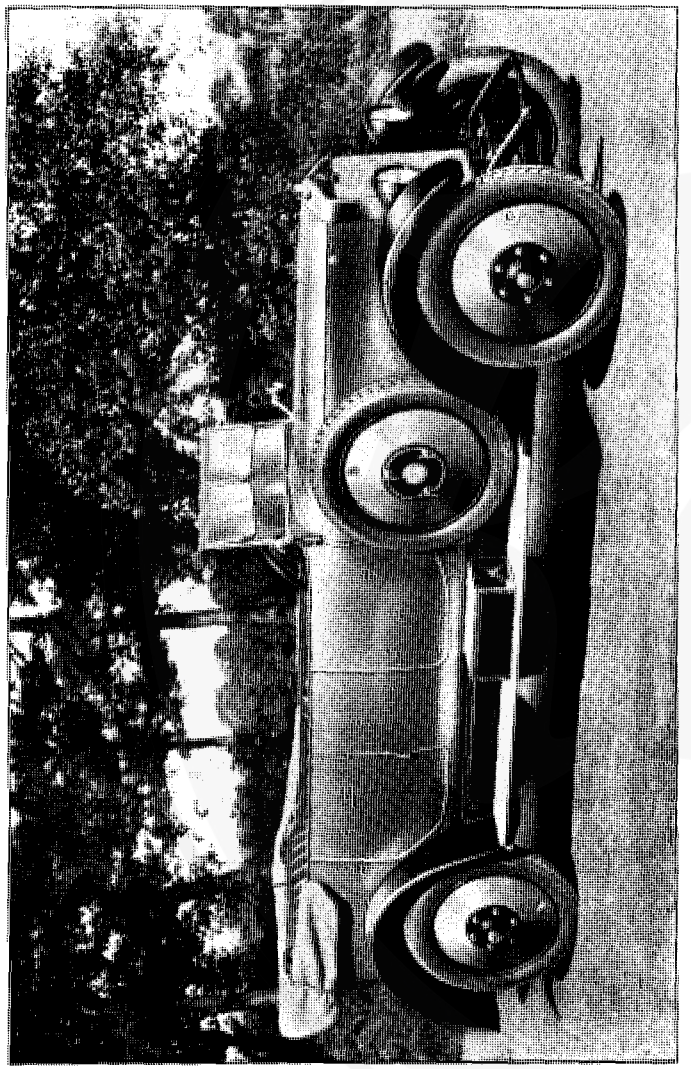
PREFACE.

DURING the past few years much has been written and said regarding the requirements of the Owner Driver, and it is claimed for many chassis that they are "specially" designed to meet the requirements of the Owner who looks after his own Car.

In the majority of instances a closer acquaintance with these chassis reveals the fact that the claims are totally unfounded and that the term "The Owner Driver's Car" is nothing more than a selling slogan.

Contemplated from a logical standpoint the requirements of the Owner Driver are precisely those of the professional Chauffeur. Advantages such as simplicity and accessibility of lubrication points, easy accessibility of petrol and oil fillers, opening and closing of same without resorting to the use of tools, access to mechanism that requires adjustment periodically, are just as desirable to the Chauffeur as to the Owner, and it pays the Owner to consider his Chauffeur's requirements, as he would his own.

It can be safely stated, and is abundantly proved in the following pages, that the 21 h.p. Lanchester possesses to a greater extent than any other Car the features and qualities desired by the present day Motorist, whether Owner or Chauffeur. The utmost care and consideration has been exercised in its design, and, as in its prototype, the 40 h.p. Car; neither labour nor expense is spared in the production of it.



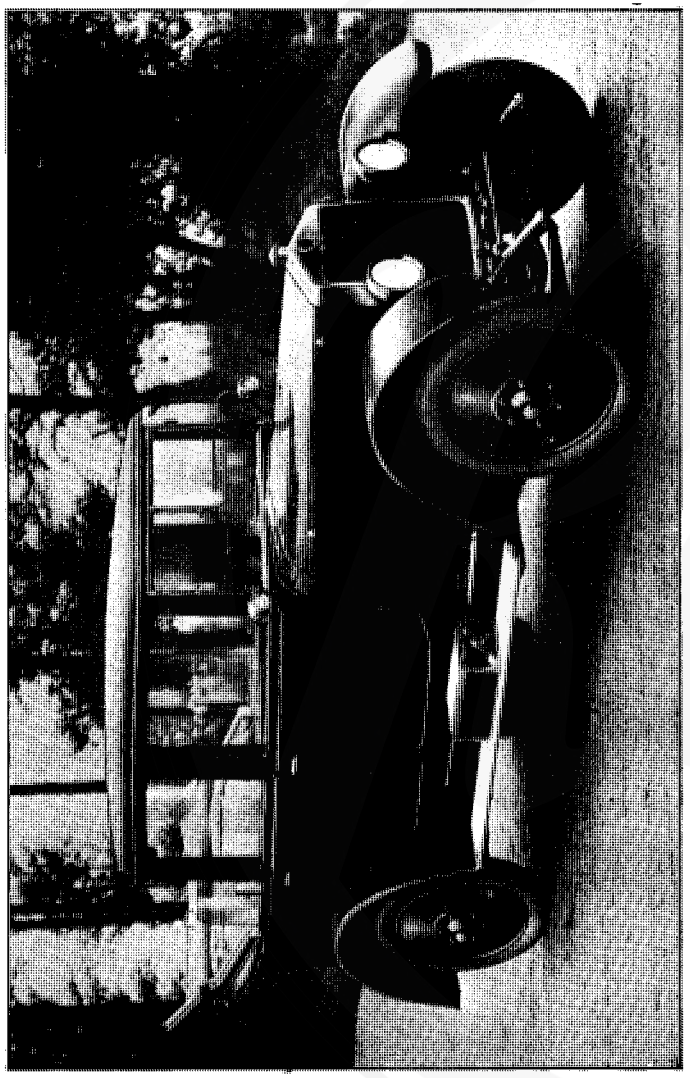
21-h.p. 6-Cylinder Lanchester 4-Seat Touring Car.

General Description.

The Chassis throughout is built on similar lines to that of the "40," the frame members being wide and deep channels, connected transversely by strong tubular members, a feature of Lanchester Cars from their inception, making an exceptionally rigid structure. The rear suspension is of Lanchester cantilever type, orthodox half-elliptic springs being employed for the front axle. Final transmission is by Lanchester silent worm gear within an axle of similar design to that of the "40." Brakes are provided on all four wheels and the front axle is of tubular construction to resist the torsional loads imposed by front wheel braking. Disc wheels are employed to enable the front brakes and steering pivots to be disposed within the wheel, and approximately in the plane of the wheel track, a precaution which, in adopting Front Wheel Brakes, we consider essential in the interests of safety.

Power Unit. Following the practice originated by the Lanchester, and now almost universally employed, the engine and gear box are built up as a unit, and the possibility of imperfect alignment between the crank shaft and gear shaft and necessity for universal joints between same is entirely eliminated.

The Engine has six cylinders cast monobloc, 2.15/16″ (74.5 m.m.) bore × 4½″ (114 m.m.) stroke, treasury rating 20.6 h.p. It has a detachable cylinder head, overhead valves operated by an overhead cam-



21-h.p. 6-Cylinder Lanchester 6-Seat Enclosed Drive Three-quarters Landaulet.

shaft, worm driven, totally enclosed and automatically lubricated. High pressure forced lubrication, magneto ignition, 4-jet automatic spray carburettor water jacketed, and water jacketed induction pipe branch. Centrifugal pump water circulation controlled by Thermostat. The electric generator is designed integral with the engine and is worm driven.

The Gear Box has 4 forward speeds and one reverse. It is of the orthodox sliding change type, but is of stiff and compact design, which combined with accurately ground gear teeth renders the gears exceptionally silent. The gear ratios are:-

1st gear 4 : 1.
2nd „ 2.4 : 1.
3rd „ 1.6 : 1.

and top gear direct, by dog clutch. The reverse ratio is 3.4 : 1. All gear shafts run on ball bearings, excepting the reverse, which runs in white metal bushes immersed in oil. The reverse shaft is entirely out of engagement when all other gears are in use.

The Steering Column is adjustable for height. Three positions being provided for. All Pedals, Clutch, Brake and Accelerator are also adjustable to suit the requirements of individual drivers. The steering wheel is of large diameter and carries the control levers for Ignition, Carburettor and Air.

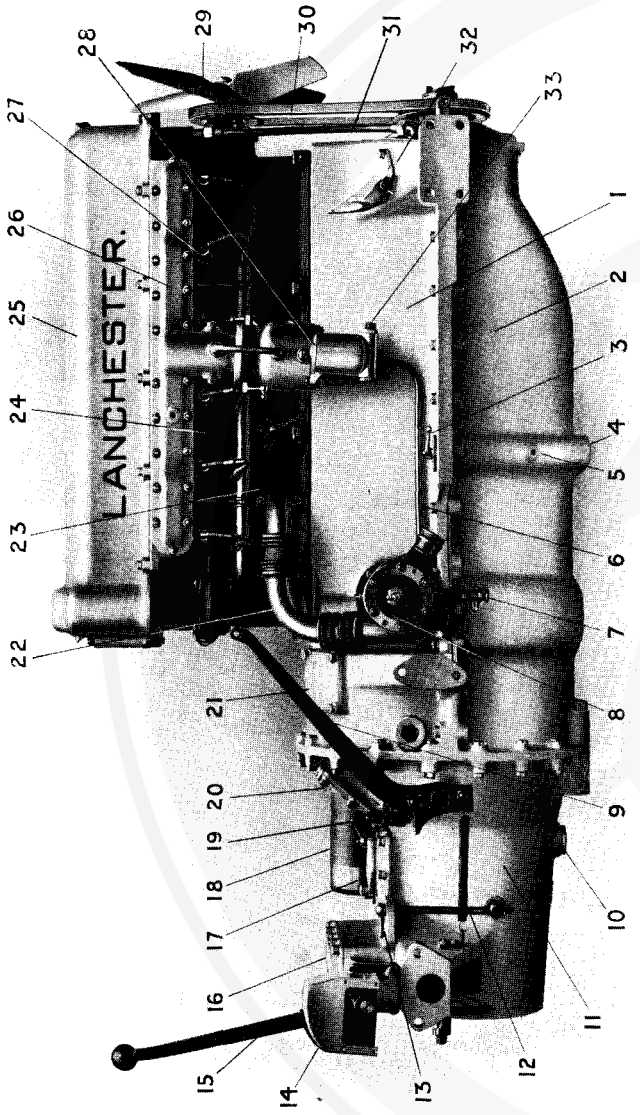


Fig. 1. Power Unit.

Detail Description.

Engine. As already mentioned in the General Description, the engine Figs. 1 and 2 has six cylinders cast Monobloc with detachable head, which may be removed without disturbing the overhead valves and camshaft. The combustion space is partially spherical in form and entirely machined, a process contributing to efficiency and evenness of running. The overhead valves and camshaft are totally enclosed by a detachable aluminium cover. Two exhaust manifolds of ample diameter are provided, each serving three cylinders. The water circulation is by centrifugal pump and its temperature is controlled by a thermostat which chokes the circulation until the water is raised to a suitable temperature.

Description of fig. 1.

1 Crankcase.
2 Oil Base.
3 Crankcase Oil Level Cock Handle.
4 Crankcase Oil Drain.
5 Crankcase Oil Level Cock.
6 Carburettor Jacket Water Circulation Pipe.
7 Water Drain Tap.
8 Water Pump.
9 Clutch Pedal.
10 Gear Box Oil Drain Plug.
11 Gear Box.
12 Clutch Pedal Spring.
13 Gear Box Oil Level Cock.
14 Gear Change Gate.
15 Gear Change Lever.
16 Gear Change Selector Box.
17 Gear Box Oil Filler.
18 Engine Starter.
19 Clutch Stop.
20 Inspection Cover.
21 Valve Timing Inspection Lid.
22 Water Circulation Pipe.
23 Cylinders.
24 Detachable Cylinder Head.
25 Valve Cover.
26 Induction Manifold.
27 Sparking Plugs.
28 Carburettor.
29 Cooling Fan.
30 Fan Driving Belt.
31 Oil Return Pipe.
32 Electric Horn Bracket.
33 Petrol Union.

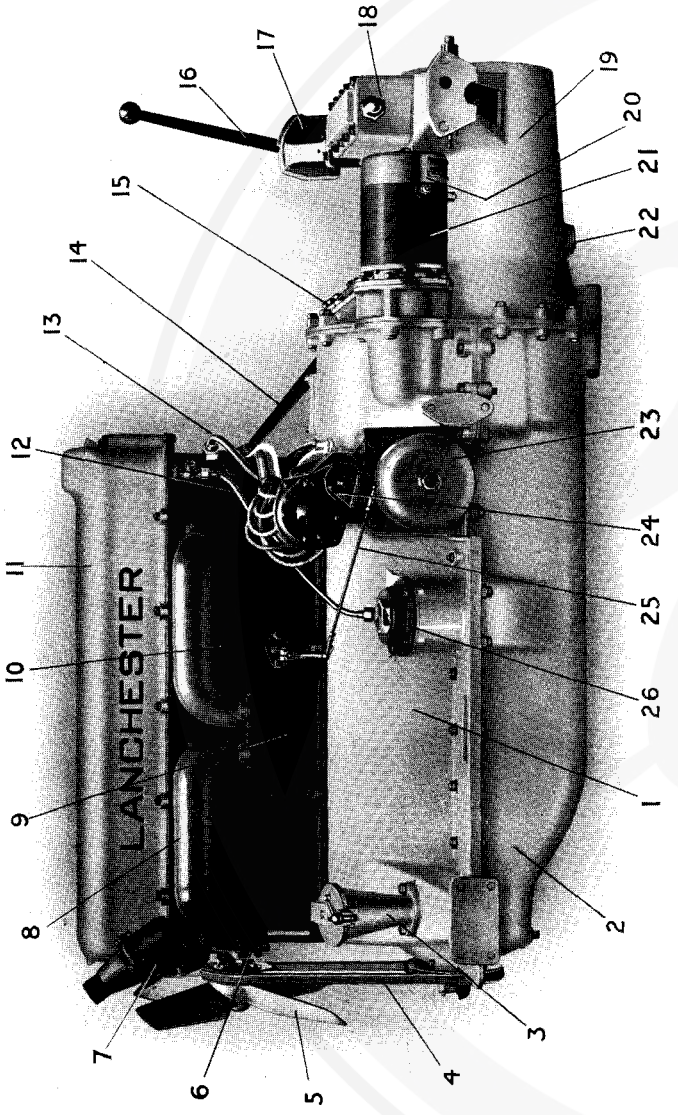


Fig. 2. Power Unit

Crankcase. Both the crankcase and the oil base are of deep section combining to form a stiff girder-like construction, the strength of which is greatly increased by employing wide flanged crankcase joints and a large number of bolts securing them to each other. The engine is supported in the chassis by bearer brackets cast integral with the crankcase and gear box. Mounted on the near side bracket at the forward end of the crankcase is an oil filler of large diameter Fig. 2 ; no tun-dish is required for filling, and the oil filler lid being hinged and secured with a wing nut, no tools are necessary to open it. Towards the rear of the crank-case on the nearside is situated an oil filter Fig. 2, the gauze of which can be removed for cleaning or replace-ment without loss of oil. An overflow cock indicating the correct oil level (also for use in the event of over filling) is provided on the offside of the engine. *For lubrication instructions see page* 37.

Description of fig. 2.

1 Crankcase.
2 Oil Base.
3 Crankcase Oil Filler.
4 Fan Driving Belt.
5 Cooling Fan.
6 Fan Belt Adjustment.
7 Thermostat.
8 Exhaust Manifold.
9 Cylinders.
10 Detachable Cylinder Head.
11 Valve Cover.
12 Oil Pressure Pipe.
13 Oil Return Pipe.
14 Clutch Pedal.
15 Inspection Cover.
16 Gear Change Lever.
17 Gear Change Gate.
18 Gear Change Selector Box.
19 Gear Box.
20 Starter Commutator and Brush Cover.
21 Engine Starter.
22 Gear Box Oil Drain Plug.
23 Dynamo.
24 Magneto.
25 Timing Link.
26 Oil Filter.

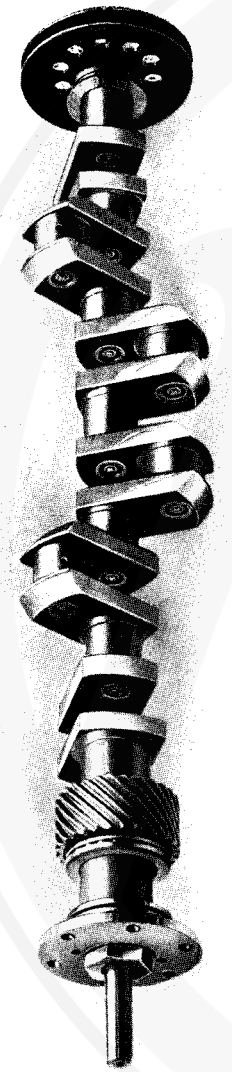


Fig. 3. 21-h.p. Crankshaft.

The Crankshaft Fig. 3 is of exceptionally robust design, its six throws being supported by a bearing between each pair. There are eight bearings in all, the main bearing nearest the flywheel being divided to accommodate the cam transmission worm which runs in an oil bath. The crank is of hollow formation, the shaft and crank pins being bored to effect a saving in weight ; suitable oil conduits are drilled for the distribution of oil which is pressure fed. The main bearings are of special anti-friction metal.

The Pistons Fig. 4 are aluminium alloy die cast, this material having been adopted by us in 1919, after tests extending over five years. Three piston rings are employed, the lowest one acting as a scraper ring preventing over lubrication and resultant carbon deposit in combustion space. Immediately below the scraper ring is an oil groove drilled with holes through which the surplus oil drains away. The gudgeon pin is floating, i.e., neither fixed to the piston nor to the connecting rod ; it is tubular in form to save weight ; the ends are provided with aluminium plugs having a

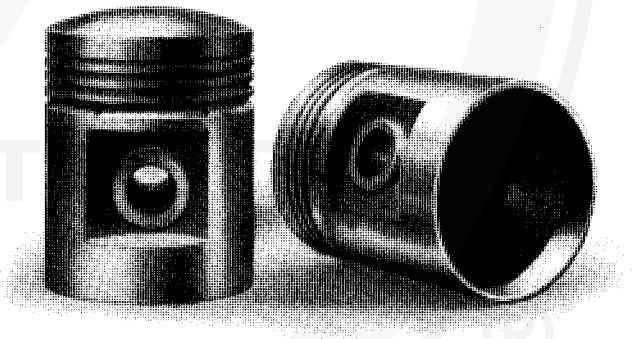


Fig. 4. Pistons.

slight curvature on the face conforming to the radius of the cylinder walls.

The Connecting Rods Fig. 5 are stampings in high tensile steel machined all over to a uniform weight. The big end is lined with a white metal bearing cast under pressure, a process which ensures effective adhesion of the white metal to the surface of the rod and a density of structure in the bearing metal giving great durability. The small end is bushed with a hard alloy phosphor bronze. Oil is conducted from the crank pin bearing to the small end bearing by means of a steel tube which is secured in the rod before the insertion of its bearings.

The Valves and Camshaft are located overhead. The valves are of special steel, selected for its corrosion resisting properties, and will run upwards of 15,000 miles without it being necessary to re-grind the seats. They are slightly inclined from the vertical and are operated from the centrally placed camshaft by rocker arms Fig. 6. The rocker arm for each valve has its fulcrum on the side of the cylinder head opposite to the valve. The fulcrum pin is carried on eccentrics, the purpose of which is to raise or lower the fulcrum, thereby adjusting the clearance between the tappet and

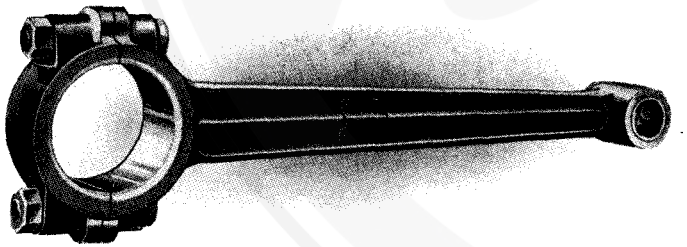


Fig. 5. Connecting Rod.

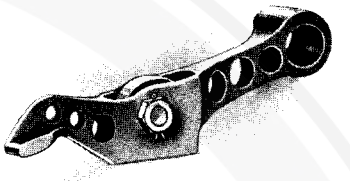


Fig. 6. Valve Rocker.

valve. Approximately central in the rocker arm is carried a roller on which the cam bears; the roller is sunk in a pocket, which forms an oil bath and ensures continuous lubricatian of both the roller and its pin.

The camshaft, as previously mentioned, is situated centrally, i.e., longitudinally between the feed and exhaust valves. It is supported by four white metal bearings and is worm driven, through a vertical shaft located at the rear end of the cylinders, from a worm gear on the crankshaft. Towards the rear end of the camshaft is a six-faced cam against which a spring loaded plunger abuts. The function of this cam is to counterbalance the torque re-action of the valve cams.

Ignition is by Watford movable pole piece magneto located in an accessible position on the near-side of the engine. The magneto is chain driven from a sprocket on the cross shaft, which is driven by worm gear on the crankshaft. The order of firing is 1, 5, 3, 6, 2, 4, counting from the front of the engine. The high tension cables are connected to the sparking plugs by quick detachable insulated terminals, thus enabling the spark to be tested while the engine is running, by the naked hand without the use of tools.

The Carburettor. Fig. 7. The selection of carburettor in the 21 h.p. Lanchester Car is the outcome of exhaustive Trials on the Test bench and on the road. All the leading types have been tried and the one selected as being most suitable is the Smith 4-jet Carburettor. It is a well-known type and requires no introduction.

It is a fully automatic carburettor of the simplest kind and comprises a water jacketed spray chamber at the base of which are 4 choke tubes combined in a cylindrical pedestal which intrudes concentrically into the spray chamber. The choke tubes opening radially communicate with the spray chamber through four rectangular ports, each port being arranged at a different height. The ports are covered by a cylindrical sleeve, which forms the automatic valve for controlling the jets. This sleeve, has an enclosed top and functions as a piston operated by the suction in the induction pipe ; the cavity within it forms a dashpot which prevents irregular motion. The four ports overlap each other ; the piston uncovers each in succession, so that before one is fully opened the next commences to open ; this ensures regularity of mixture throughout the entire range. The starting and slow running is provided for by arranging the piston valve so that it chokes the first port but does not entirely close it. It is notable that there is only one moving part—the automatic piston valve—the entire surface of which is continually washed by petrol spray, which keeps the surfaces free from dust and ensures free working of the valve under all conditions. The four jets, within the four choke tubes referred to above, are carried on a platform which is a part of the float chamber, and the jets and float chamber are readily detachable from the carburettor by removal of one nut

and disconnecting the petrol pipe. The float chamber is of the orthodox type, containing a needle valve which is operated on by the float through the medium of two counter-balance levers. In order to facilitate starting and to effect economy in running, additional air ports are provided immediately above the jets. These are enclosed by a rotable sleeve, controlled from the Manette dial on Steering Column.

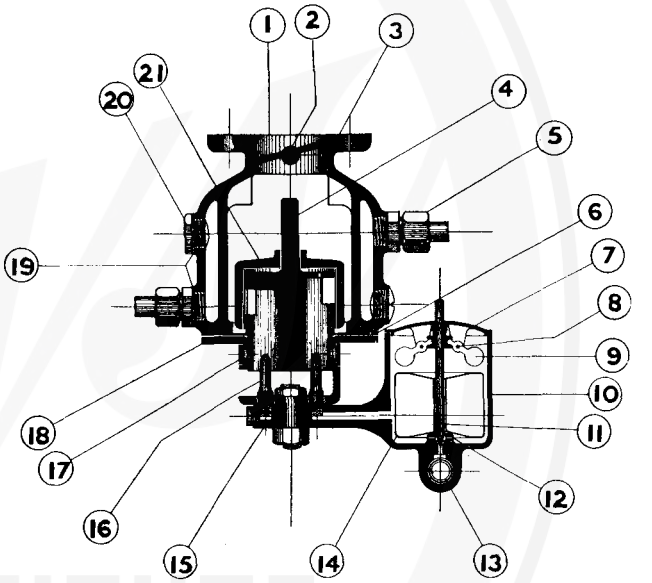


Fig. 7. Description of Carburettor.

1 Throttle Valve.
2 Throttle Valve Spindle.
3 Carburettor Body.
4 Centre Piece. (Choke Tubes.)
5 Water Inlet Union.
6 Paper Joint.
7 Float Chamber Cover.
8 Hinge Pins.
9 Weights.
10 Float Chamber.
11 Needle Valve.
12 Needle Valve Seat.
13 Filter.
14 Float.
15 Jet Holder.
16 Jets.
17 Air Slide.
18 Body Flange.
19 Fibre Jacket.
20 Jacket Plugs.
21 Automatic Valve.

Petrol is supplied to the Float Chamber Fig. 7 by gravity from a vessel on the Dashboard within which is contained the Autovac Fig. 8 by means of which the fuel is raised from the tank to the gravity vessel. The Autovac consists of a chamber having an outlet valve, an air valve, and a vacuum valve, the two latter being actuated by a float within the vacuum chamber, and the outlet valve is automatic. The vacuum valve is connected by a small bore pipe. The

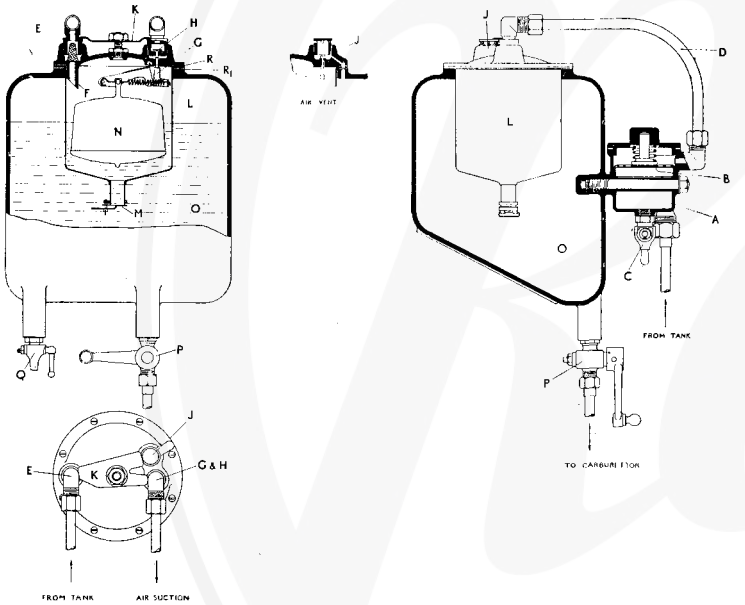


Fig. 8. Description of Autovac.

A. Petrol Filter Body.
B. Petrol Filter Gauze.
C. Petrol Filter Drain Cock.
D. Autovac Supply Pipe.
E. Autovac Petrol Strainer.
F. Autovac Petrol Inlet.
G. Vacuum Valve.
H. Outlet Valve.
J. Air Vent and Valve.
K. Clamp Plate.
L. Vacuum Chamber.
M. Vacuum Chamber Outlet Valve.
N. Float.
O. Petrol Container.
P. Petrol Feed Cock.
Q. Petrol Drain Cock.
R. & RI. Cork Joint Gaskets.

function of the float is to close the air valve and open the vacuum valve when it falls and to close the vacuum valve and open the air valve when the chamber is full.

A filter is carried on the exterior of the gravity vessel through which the fuel supply passes before entering the Autovac. The filter is provided with a drain cock, and the filter gauze is accessible and easily removed for cleaning and replacement.

The gravity vessel is provided with a cut-off which is operated from the dashboard shutting off the supply to the carburettor when desired, it is also provided with a drain cock by which in event of water or other foreign matter passing the filter it may be drained away.

Water Pump and Circulation. The centrifugal water pump Fig. 9 is driven off one end of the cross shaft. The suction on the rotor is balanced by dividing the suction pipe and leading half of the feed water in on each side ; by this arrangement the necessity for a packing gland is eliminated. In order to prevent leakage when standing the rotor is maintained in position against its seat by means of a spring loaded plunger. The pump spindle bearing is lubricated by oil thrown from the crankshaft, the oil supply being regulated by means of a small screw regulator. Delivery from the pump passes direct into the cylinder jacket and thence through the cylinder head to the radiator. Interposed between the cylinder head and radiator is a thermostat which automatically controls a valve, by means of which the water temperature is regulated and the engine attains an efficient temperature a few minutes after starting.

The Radiator is of honeycomb type, and, following established Lanchester practice, is provided with a glass level gauge. Drainage of the water service

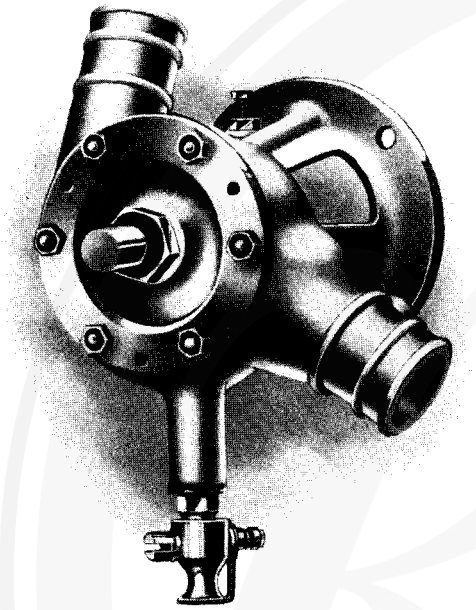


Fig. 9. Water Pump.

is effected by a cock in the underside of the water pump, which entirely empties the water jacket and radiator and also empties the pump rotor chamber. The drain cock handle is readily accessible through a lid in the chassis valance. The total water capacity of the circulation system is 4 gallons.

The Cooling Fan is driven from a grooved pulley on the front end of the crankshaft by a strong reinforced india-rubber belt. The fan is carried on a quadrant and provided with simple means for adjusting the belt tension.

Lubrication is by gear pump driven from a downward extension of the vertical shaft. Oil is forced

under pressure to the main bearings, connecting rod heads and small ends, pistons, camshaft worm drive and bearings. In the base of the oil sump, on the suction side of the pump, is a copper gauze strainer, and on the pressure side of the pump is the oil filter Fig. 2, which is removable without loss of oil or the necessity of emptying the oil sump. In order to maintain a constant oil pressure a spring loaded relief valve is fitted, which allows excess oil to drain back into the sump. The lubrication of the engine is entirely automatic and requires no attention other than the usual periodic re-filling, and removal of stale oil after 5,000 to 10,000 miles running, for which a drain cock is provided in the base of the oil sump, controlled by the same lever that operates the oil overflow level cock. The oil filler Fig. 2 at the front end of the crankcase is provided with a detachable copper gauze strainer. The filler also serves as a crankcase vent.

The Dynamo and Starting Motor. Owing to these being made subject of a separate booklet the reference to them herein is brief and relates only to mechanical features.

The Dynamo Fig. 2, situated at the rear end of the crankcase on the nearside, is driven from the cross shaft through the medium of a Rhinocerous hide coupling of the Oldham type.

The Electric Starter Fig. 2 is mounted on the flywheel casing and lies horizontally parallel to the gear box. The commutator cover is divided so as to make it readily detachable, giving access to the brushes and commutator for cleaning or adjustment. The starter pinion is of the bendix type and automatically engages with a gear ring mounted on the fly-wheel when the armature is set in motion by operating the push-in switch on the instrument board.

The Clutch is of the single disc type, simple in construction and capable of running many thousands of miles without adjustment. The clutch disc is carried on the first motion shaft of the gear box and is in sliding splined connection with same. It is housed within the fly-wheel and when in engagement is gripped between two ferodo discs. The clutch thrust bearing, which is under load only when the clutch is disengaged, is a substantial ball thrust bearing operated by the foot pedal. Mounted on the clutch coupling is a small brake drum ; the clutch pedal operates a ferodo faced lever, which when fully depressed makes contact with the clutch brake drum and checks or arrests same. The clutch stop is made adjustable by rotating a wing nut, which is self locking and requires no tools to adjust.

Gear Box. The change speed gear differs from that of our 40 h.p. Car, in that we have adopted a four-speed sliding gear in place of the three-speed epicyclic. The gear wheels are made in nickel chrome case-hardening steel and the teeth are accurately ground to form, after hardening. The change speed gear is simple and easy to operate. The gear ratios are :-

1st speed - -	4 to 1.
2nd speed - -	2.4 to 1.
3rd speed - -	1.6 to 1.
Top (Direct Drive)	1 to 1.
Reverse - -	3.4 to 1.

and it is worthy of remark that when using all forward speeds the reverse pinions are entirely disengaged and are not running. The gear box is provided with an oil filler of approximately 2" diameter aperture, and an oil level cock is provided situated on the offside of the gear box. Access to filler and oil level cock is obtained by removing the driver's floorboard.

The Rear Axle is substantially a replica of the 40 h.p. on a reduced scale, consisting of three principal components, the centre gear box containing the worm gear (which is of the well-known Lanchester silent high efficiency type) and differential, and the two sides consisting of axle casings carrying the spring brackets and brake brackets, etc. The standard ratio of Worm Gear is 7-34, i.e., 4.86 : 1.

The worm gear box is divided horizontally, the top being easily removable for inspection without disturbing the worm gear or differential bearings.

The axles are of the three-quarter floating type and are connected to the wheel hubs by combined splines and cones, the conical portions being drawn up tight into the hubs by means of a nut.

The hubs are mounted on the ends of the axle casing on robust ball bearings, approximately in line with the wheel track.

The rear axle casing is connected to the chassis by a torque tube which is permanenty bolted to the worm gear box at the rear end and articulated to the rear end of the power unit with a large spherical joint.

The Transmission is by cardan shaft enclosed within the torque tube. It is connected at the front end to the driven shaft of the gear box by means of a universal joint and connected at the rear end to the worm shaft by a splined joint. A ball bearing supports the propeller shaft in the centre, a housing being provided for same in the torque tube. The "hooks joint" or universal, at the forward end, is automatically lubricated by leakage from the gear box, which also provides lubrication for the torque tube ball and for the propeller shaft centre bearing.

The Front Axle is of tubular construction to resist the torsional loads imposed by the action of front wheel brakes. The axle carries the under-slung semi-elliptic springs and the brake operating shaft. The stub axles are drop forged, and incorporated with them are the upper and lower journal bearings of the swivel head. The ends of the steering lever and steering coupling levers are of taper formation, the tapers fitting into sockets of similar formation in the swivel heads into which they are also keyed and secured by castle nuts.

The Steering Gear is similar to that of our 40 h.p. Car. The column is secured to the chassis frame at the lower end by means of a pivot bolt. Passing through the foot board it is supported at the dashboard by a bracket. In order to vary the rake of

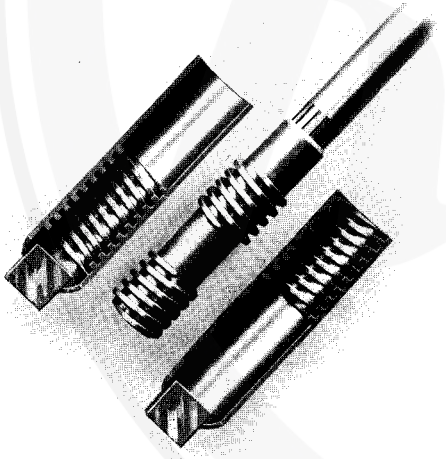


Fig. 10. Steering Shaft.

the steering column to suit different types of bodies and different drivers' requirements, three marks of dash-board brackets are manufactured, normal, high, and low.

The steering shaft consists of a steel tube, on the lower end of which are cut right and left-hand threads, engaging with two half sleeves Fig. 10, one of which has internally a portion of thread right-hand and the other left-hand, corresponding with the threads on the shaft. The lower ends of the sleeves terminate in hard steel blocks which bear on two hard steel rollers mounted in sockets provided in the rocking shaft. The trunnions of the rocking shaft are carried on

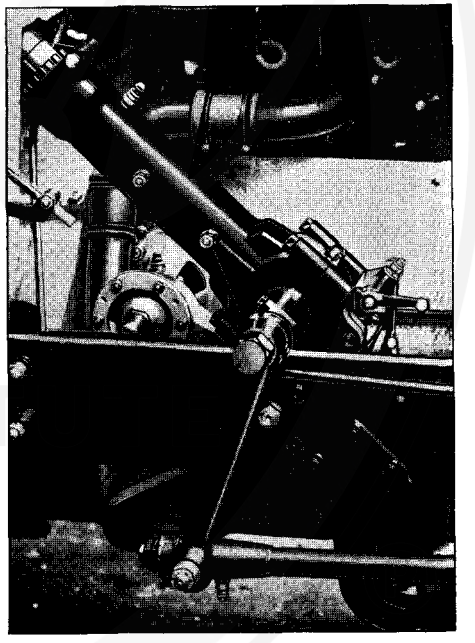


Fig. 11. Steering Box.

bearings formed in the base of the steering box ; one end of the shaft protrudes from the steering box and carries the steering lever, which is connected by means of combined spline and cone joint. At the head of the steering box Fig. 11 a ball thrust bearing is provided, which is adjustable externally. The tubular steering shaft is enclosed within the steering column and is supported at the top close up to the steering wheel by means of an oil-less bearing. The steering wheel Fig. 12 is of large diameter and carries the control levers for ignition, carburettor and air, mounted in the centre. The manette tubes pass through the steering column ; the outside one being clamped to the steering base carries the manette dial ; to the inner tubes, at their upper end, are attached the controls for throttle, ignition and carburettor ; and at the lower end is the

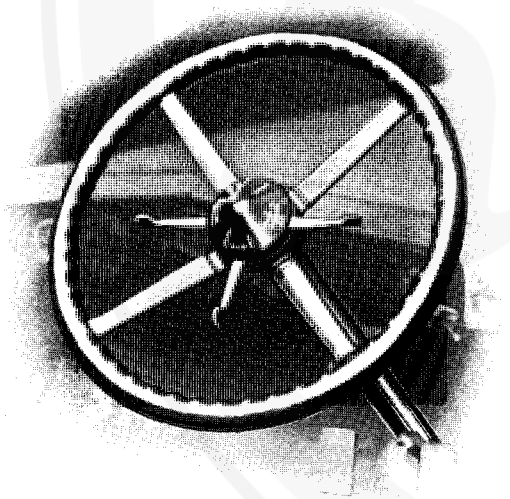


Fig. 12. Steering Wheel.

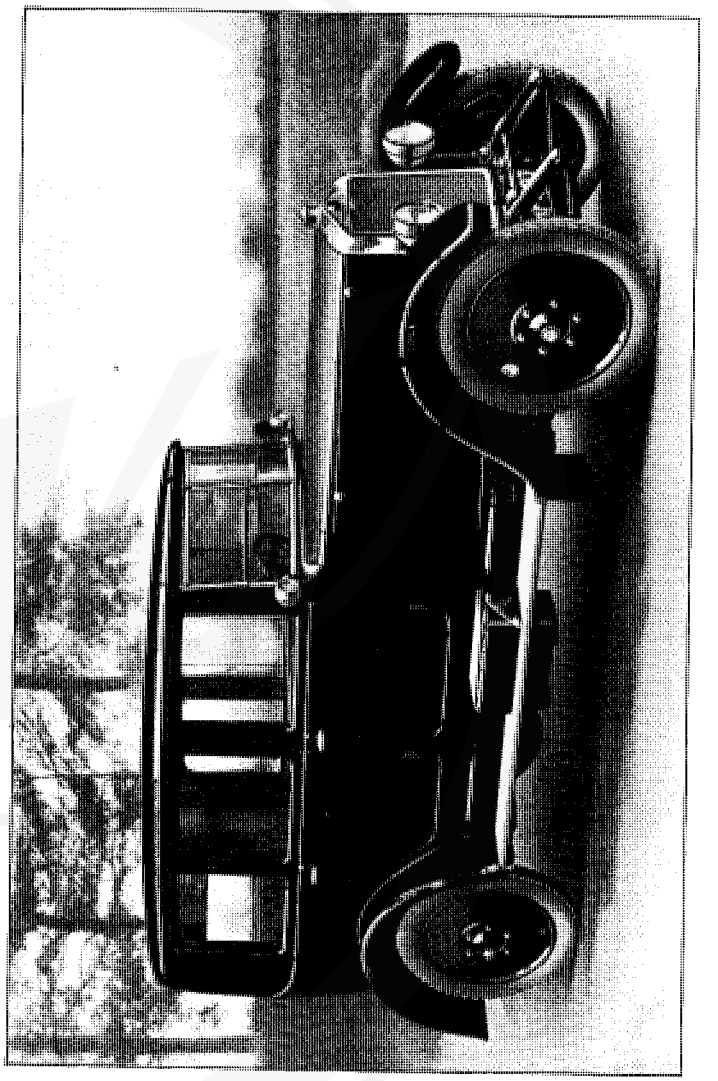
throttle lever, ignition lever and carburettor control mechanism. The levers and the links connecting them have quick detachment joints of special ball and socket design Fig. 13.

The Brakes are of internal expanding type acting on all four wheels. The brake drums are aluminium of large diameter with cast iron liners. The brake shoes are faced with ferodo and are retained in position by two sets of springs. The brake pedal simultaneously applies the front and rear wheel brakes ; the hand brake lever operates the rear wheel brakes only, by independent linkwork. Below the pedal shaft is a compensating bell-crank from which brake actuating links are carried forward to a lever on the front brake shaft and rearward to the rear wheel brake shaft. The

Fig. 13. Manette Levers Ball Ends.

front brake shaft is mounted forward of the axle in order to harmonise the brake link motion with that of the front axle. The operating link terminates at the front end with a simple and accessible adjustment. At the ends of the cross-shaft are levers which are linked to the brake cam-shafts, supported in bearings beneath the axle. The brake camshaft terminates with an eye, in which is mounted a rotable cam, so that whilst rotation of the shaft forces the brake shoes apart in the usual manner, the action of the cams is undisturbed by steering movements.

The main operating rod of the rear wheel brakes is carried backward from the compensator bell-crank to a lever mounted at the end of a cross-shaft, carried in brackets secured to one of the torsional members of the chassis frame. This cross-shaft carries two levers connected by links to the brake actuation shafts, which are situated on the rear axle casing and actuate the brake shoe cams. Separate actuation is provided for the hand brake which operates independently on the rear wheel brakes only.



21-h.p. 6-Cylinder Lanchester 6-Seat Enclosed Drive Limousine.

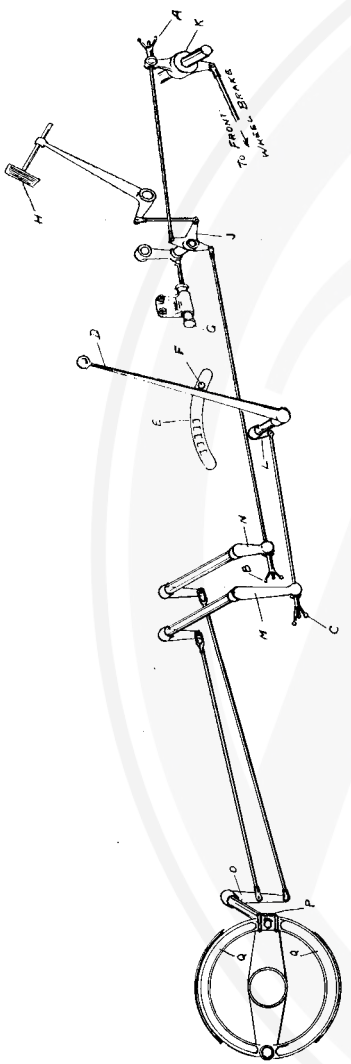


Fig. 14. Description of Brake.

A. Front Brake Adjustment Nut.
B. Rear Brake Adjustment Nut.
C. Hand Brake Adjustment Nut.
D. Hand Brake Lever.
E. Hand Brake Quadrant.
F. Hand Brake Lever Stop.
G. Compensator Spring Plunger.
H. Brake Pedal.
J. Foot Brake Compensator.
K. Front Brake Compensator.
L. Hand Brake Operating Lever.
M. Hand Brake Motion Shaft and Levers.
N. Foot Brake Motion Shaft and Levers.
O. Rear Brake Actuating Lever.
P. Rear Brake Cam.
Q. Rear Brake Shoes.

Brakes Adjustment.

Slack off front and rear brake adjustment nuts "A & B;" adjust up hand brake nut "C" until the brake hand lever "D" can just be engaged with the first tooth of quadrant "E;" release the hand lever and let it back to the stop "F;" set up the rear brake adjustment nut "B" until a small amount of back lash can be felt on the hand brake lever; adjust up front brake until there is no perceptible movement of the spring plunger "G" when pressure is applied to the brake pedal "H."

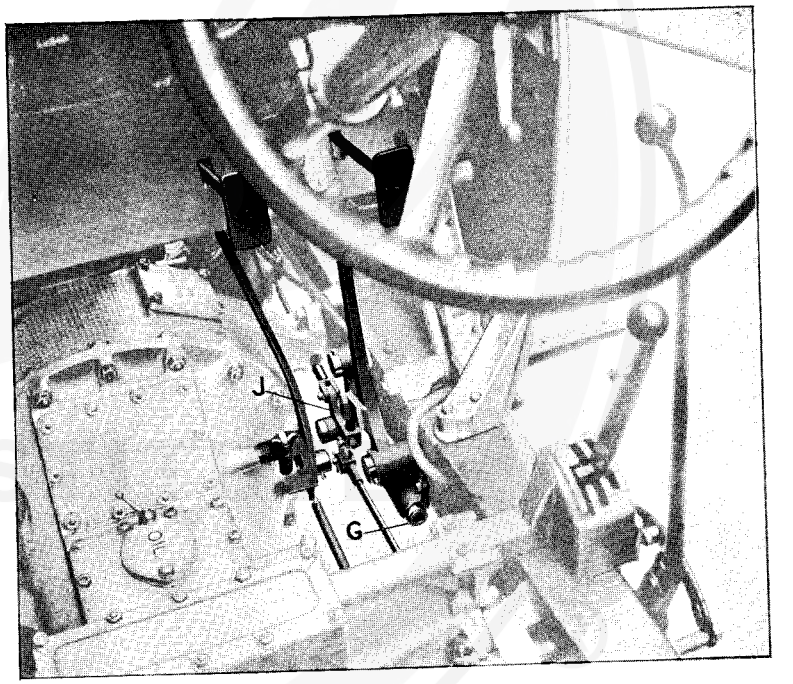


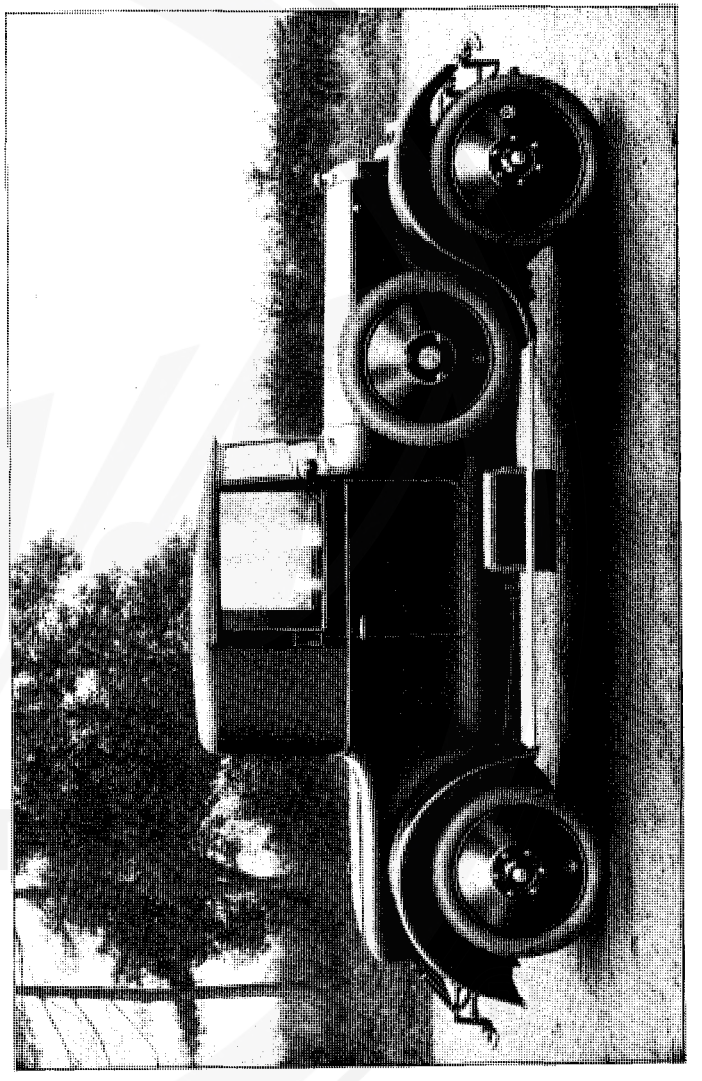
Fig. 15.

Having removed the front floorboard, this operation can be observed when occupying the driver's seat.

If, when pressure is applied to the brake pedal the spring plunger moves backward, the front brake adjustment requires setting up. Alternatively, a forward movement of the plunger indicates that the front brake adjustment requires slacking off.

Fig. 14 shows diagrammatically the brake actuation system.

Fig. 15 illustrates the actual brake compensation mechanism.



21-h.p. 6-Cylinder Lanchester Coupe.

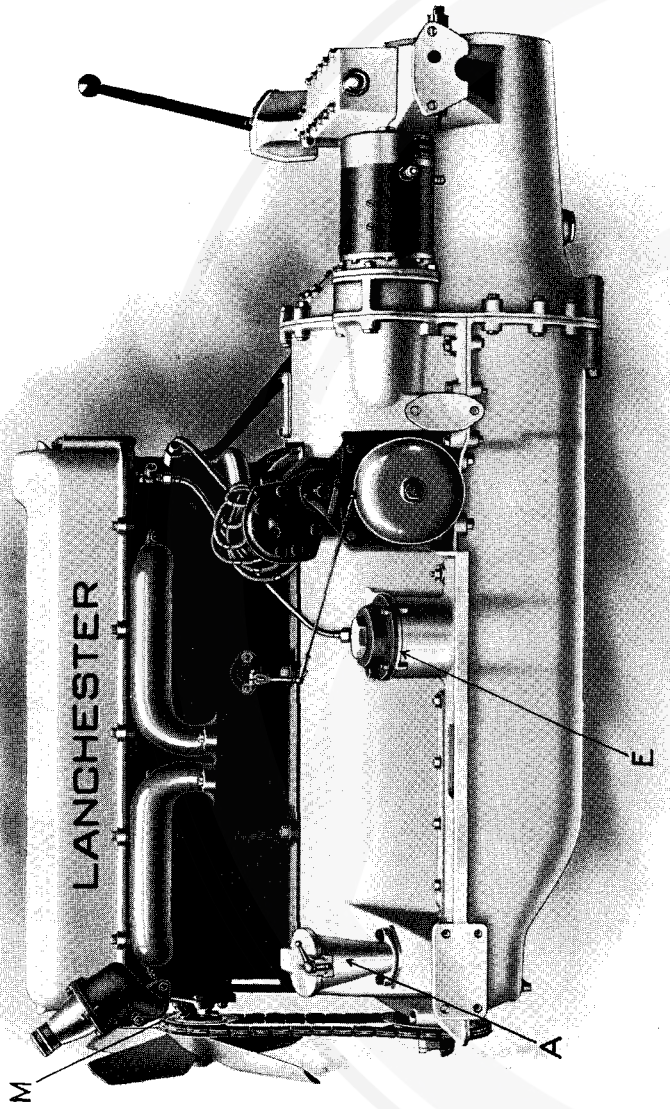


Fig. 16.

Lubrication.

THE Lubrication of the Lanchester 21 h.p. 6-Cylinder Car is a point to which great attention has been paid. The position of Oil Fillers and Filters, Oil Drains and Lubricators has been closely studied with a view to their accessibility and to reduce to a minimum the number of lubrication points.

The Engine Oil Sump holds 1¾ gallons of oil, sufficient to run about 750 miles. The Oil Filler "A" Figs. 16 & 18 is located in an accessible position on the nearside front engine bracket. An Oil Level Cock "B" Fig. 17, is provided on the offside of crankcase, which, when the handle "C" is in its central position is shut off, moved forward it gives the oil overflow level, and backward opens the sump oil drain "D." The engine oil sump should be filled to the level of the overflow cock. In the base of the oil sump is a fine mesh copper gauze strainer, which is on the suction side of the pump, and on the pressure side of the pump is an oil filter "E" Figs. 16 & 18 which is so designed as to be removable without loss of oil or the necessity of emptying the oil sump. In event of over-filling, allow the oil level cock to remain open until the oil ceases to flow. In order to keep the driver informed as to the automatic lubrication of the engine, an Oil Pressure Gauge is provided on the instrument board. As long as the oil gauge operates there is no need to re-fill with oil; the first indication that the engine requires re-filling will be that the pressure gauge ceases to act when travelling downhill and recovers when travelling on the level or uphill.

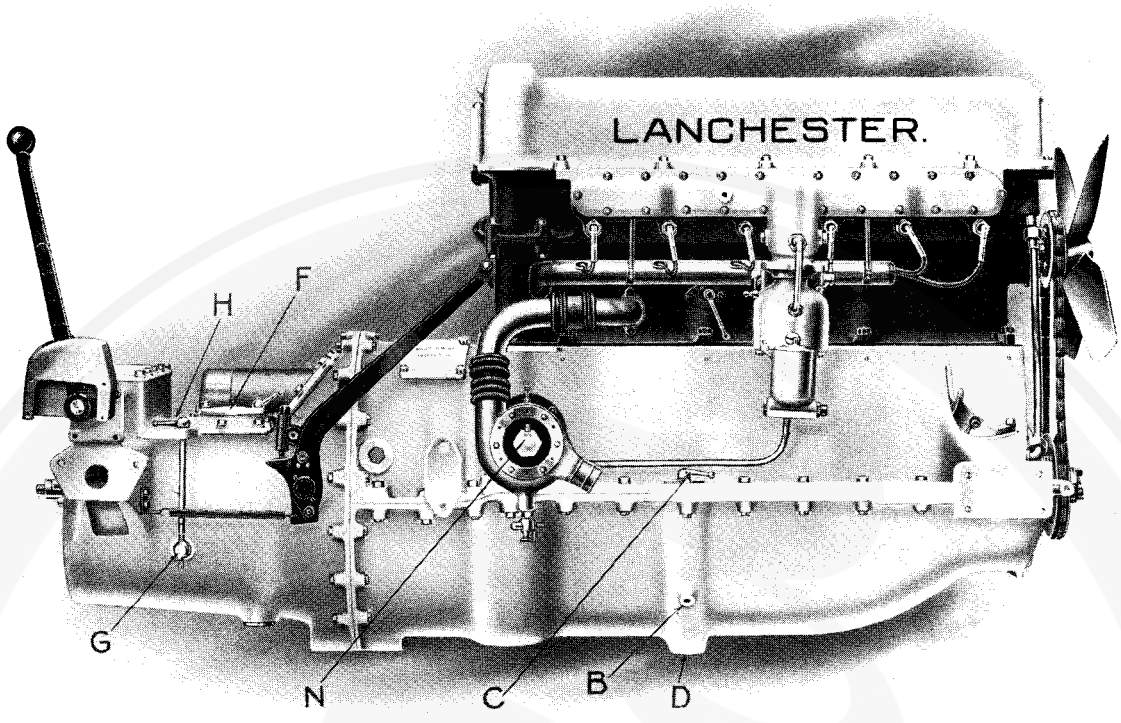


Fig. 17.