MOTO GUZZI

MODEL "Galletto,,

160 cc.

INSTRUCTIONS

for use and maintenance

MOTO GUZZI

LIMITED LIABILITY COMPANY

Works and Offices: **MANDELLO DEL LARIO** (Como) - Italy

Registered Offices: Corso Aurelio Saffi, 29, **GENOA**

Main Agency: Spares and Repairs: Via Giovanni da Procida 14, **MILAN**

FIRST EDITION

MODEL "Galletto"

160 c c.

INSTRUCTIONS

for use and maintenance

TOOL KIT

Tyre pump.

Tubes for stand.

Spanner for plug and stand.

Screwdriver.

Universal pliers.

17-19 mm. ring spanner for fuel pipes, wheel nuts, forks, engine fixings, etc.

10-14 mm. box spanner for footboards, cover plates, mudguards, handlebars, front wheel cap nuts, rear brake, forks, engine, chain tensioners, etc.

Tommy bar.

11 mm. box spanner for tappets, etc.

Spare jet: (Summer 80 - Winter 85).

Key for tool box.

INDEX

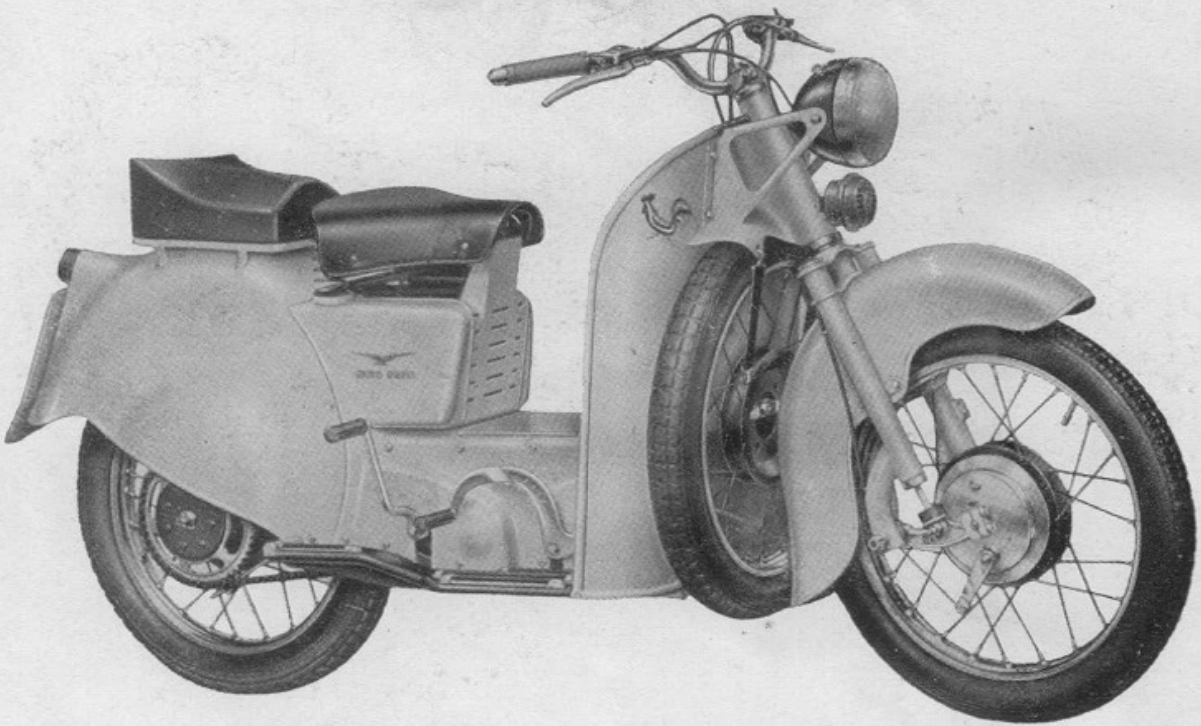

Fig. 1 « Galletto » (right side)

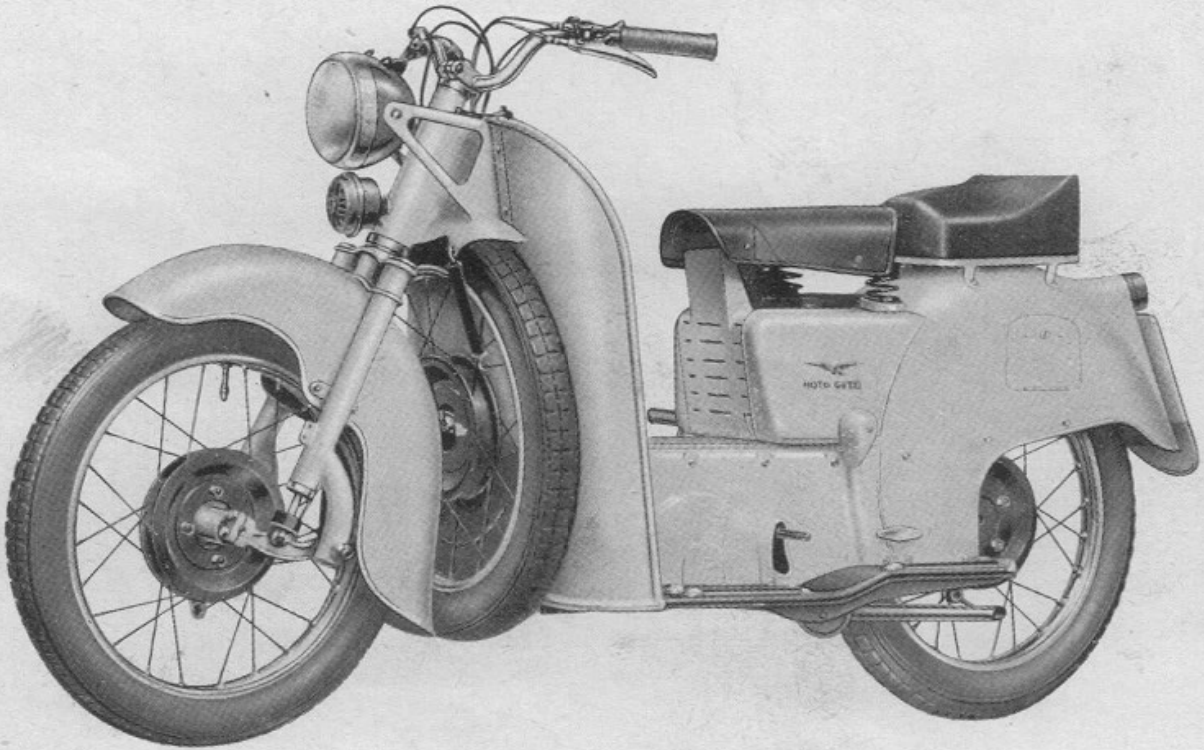

Fig. 2 - Motoleggera (lato sinistro)

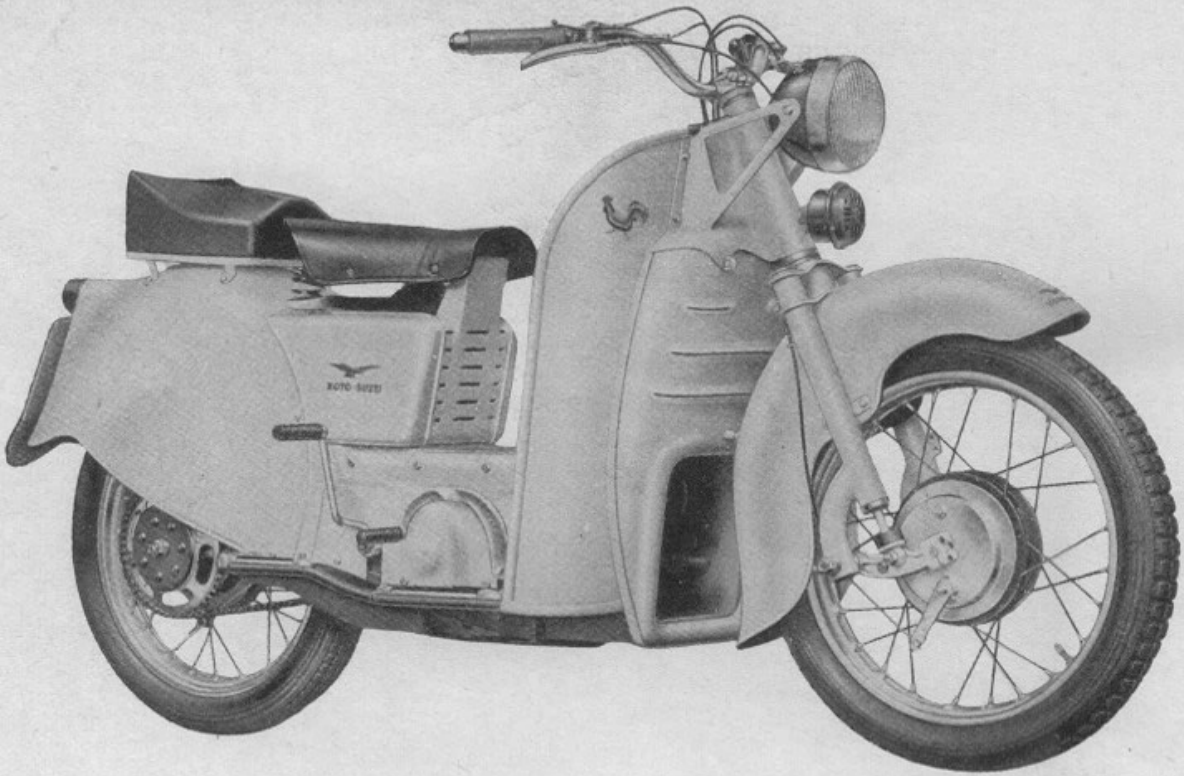

Fig. 3 - Motoleggera con mascheratura anteriore

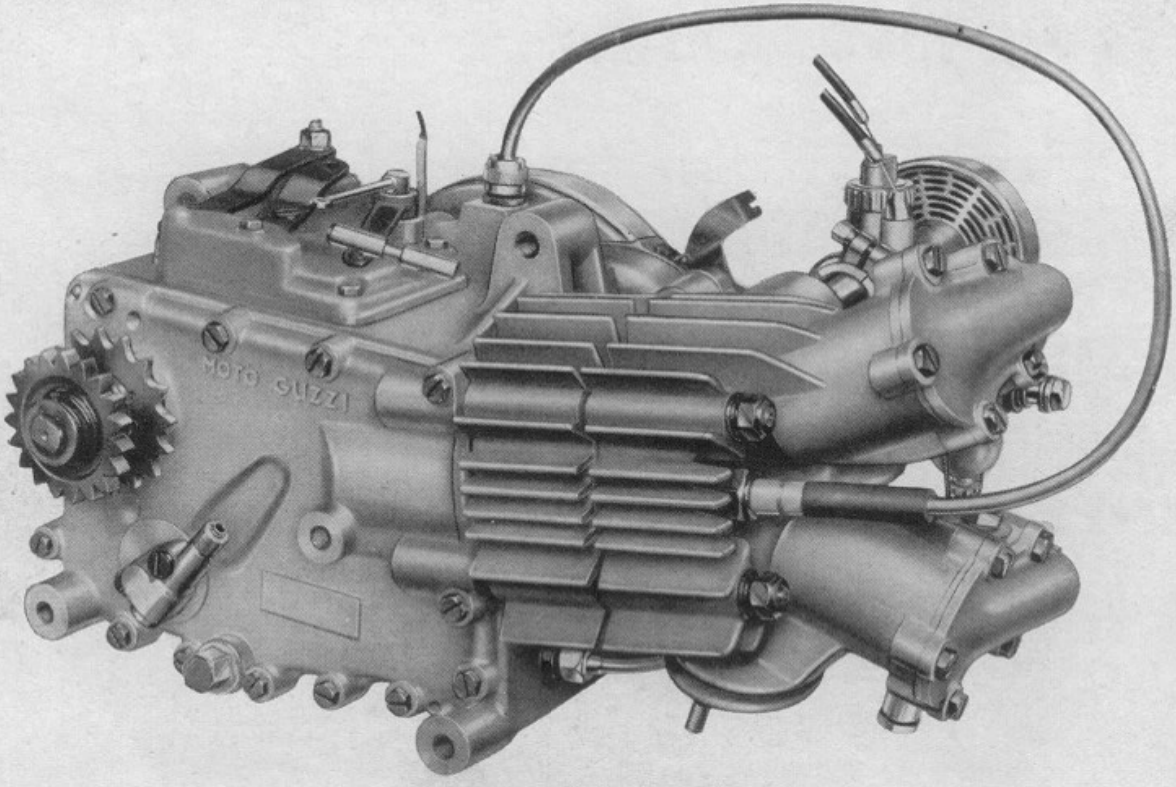

Fig. 4 - Motore (lato destro)

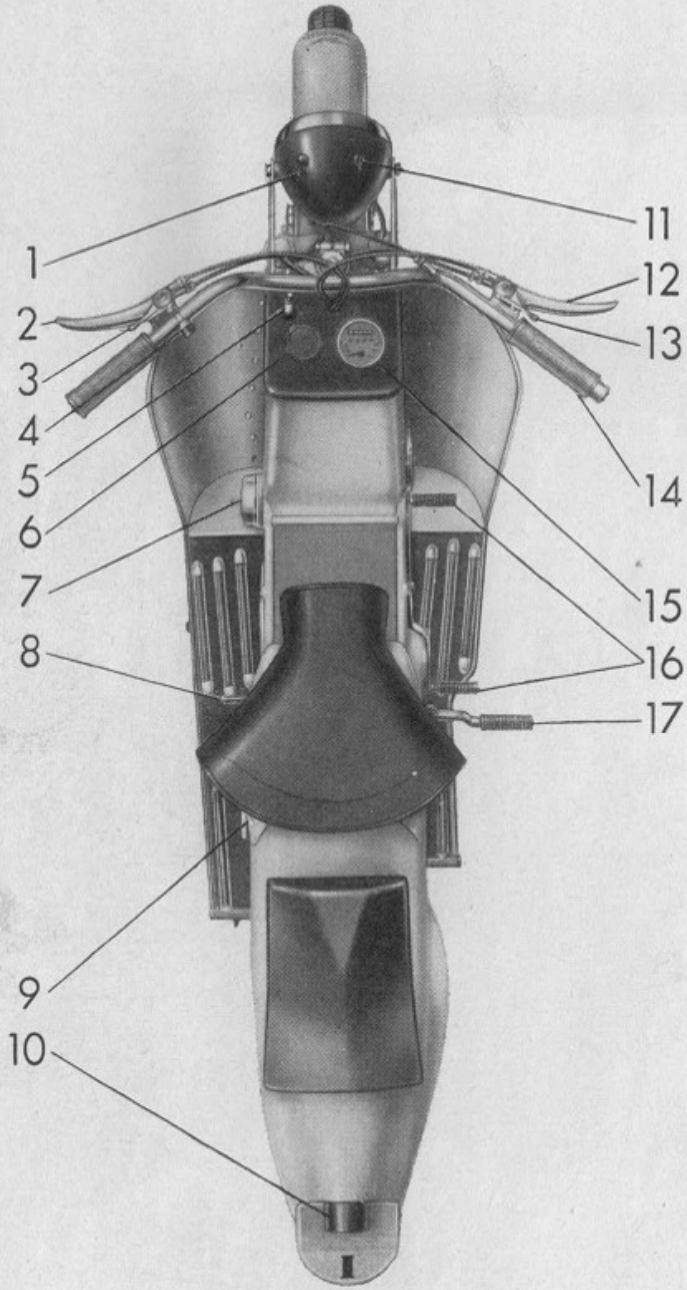

Fig. 5 - Comandi ed accessori

CONTROLS AND ACCESSORIES

(*See Fig.* 5)

1 - Light switch.

2 - Clutch lever.

3 - Ignition lever (advanced with slack wire).

4 - Dipper switch and horn button.

5 - Petrol tap.

6 - Petrol filler cap.

7 - Air filter.

8 - Rear brake pedal.

9 - Rear damping adjustment.

10 - Rear light.

11 - Ignition key.

12 - Front brake lever.

13 - Easy-starting control.

14 - Twist-grip throttle control.

15 - Speedometer.

16 - Gear lever.

17 - Kick-starter.

N.B. — *The pillion seat as well as the cover plate in place of a spare wheel are to be considered as extras.*

GENERAL CHARACTERISTICS

ENGINE

Engine: overhead valve four-stroke.

Cylinder head: Aluminium alloy with complete enclosure of valve gear.

Cylinder: The single cylinder is of aluminium alloy with special cast-iron liner.

Stroke: 53 millimetres.

Bore: 62 millimetres.

Cubic capacity: 160 c.c.

Power: 6 brake horse power at 5,200 r.p.m.

Compression ratio: 5.6 — 1.

Ignition:

Alternating flywheel magneto.

Advance controlled by handlebar lever (slack wire full advance).

Full advance: 43-45 degrees.

Plug:

Marelli CW 175 A for normal touring

Marelli CW 225 5 for fast touring.

Fuel supply:

Petrol tank capacity is 7 litres (about 1½ gallons) with a reserve of about 1 quart.

Carburetter: Dell'Orto MA 18 BS 1 with air filter F 5/1.

Easy starting control by lever on right handlebar.

Lubrication:

Dry-sump by gear pump. Capacity of oil tank about ¾ gallon.

Cooling:

By air. Cylinder head and cylinder are finned radially.

Clutch:

Multiple disc controlled by handlebar lever.

Gear Box:

Sliding gears - 3 ratios.

Bottom gear-box ratio	2.86 - 1
Second gear-box ratio	1.6 - 1
Top gear-box ratio	1 - 1

Transmission:

By helical tooth gear from engine to gear-box.

By roller chain from gear box to rear wheel pinion.

Transmission ratios:

From engine to gear box: 2.11 - 1 (18-38 teeth).

Gear-box to rear wheel: 3,19 - 1 (16-51 teeth).

Overall ratios:

Bottom gear	19.24 - 1
Second gear	10.74 - 1
Top gear	6.72 - 1

GENERAL CHARACTERISTICS

FRAME

Wheelbase 1.3 metres (about 51 inches).

Overall dimensions:

Length: 1.95 metres (about 77 inches).

Width: 0.715 metres (about 28 inches).

Height: 0.970 metres (about 38 inches).

Ground-clearance: about 6 inches.

Saddle height: about 29 inches.

Weight: with spare wheel but without petrol, oil and accessories about 111 Kilogrammes (244 pounds).

Suspension:

Minimum turning circle: 1.75 metres (about 70 inches).

Front: telescopic forks with bottom links.

Rear: by swinging arm with enclosed coil springs situated above engine unit.

Shock-absorbers: adjustable friction shock-absorbers for rear wheel.

Wheels:

Interchangeable spoked wheels are fitted 17 × 2½ inches. (The machine is supplied as standard with a spare wheel).

Tyres:

Front. 2.75 x 17 — Rear 3.00 x 17.

Tyre pressures

Solo: Front 21 lbs. — Rear 24 lbs.

With pillion passenger: Front 25 lbs. — Rear 35 lbs.

With a load of about 440 lbs. the pressure of the rear tyre should be increased to 38 lbs.

Brakes:

Internal expanding in light metal drums. Diameter 125 mm. (about 5 inches). The front brake is controlled by a lever on the right handlebar, the rear by foot pedal on the left of the machine.

Electrical Equipment:

Alternating generator. The headlamp is fitted with a pilot lamp and a two-position main bulb. The diameter of the lamp glass is 125 mm. (about 5 inches).

Red rear light is fitted.

Electric horn.

Marelli battery 6 volt capacity 8 Amp. hours.

Performance

Gradients climbable by the machine with rider only on a road in good condition:

In bottom gear	about 1 in 5
In second gear	about 1 in 10
In top gear	about 1 in 18

Fuel range in hilly country but on good roads about 270 Kilometres (170 miles).

Speeds corresponding to maximum revolutions of 5.200.

In bottom gear 19 m.p.h.

In second gear 30 m.p.h.

In top gear 50 m.p.h. (approx.).

N.B. - In the text the terms right and **left** are used in the sense to which **they** would appear to a rider sitting on the machine.

INSTRUCTIONS FOR THE USE OF THE MACHINE

The maximum safe revolutions of the engine are 5,200 r.p.m. and it is strongly advised that the speeds in the gears corresponding to these revolutions should not be exceeded (See: Performance).

Before starting on a trip make sure that there is sufficient petrol, also oil of the correct grade. To control the oil supply a dip stick is attached to the oil filler cap and is marked with two lines representing maximum and minimum levels. As soon as the engine has been started it is advisable to ensure that the oil is circulating. To do this untwist the saddle springs and tilt the saddle out of the way. The oil tank cap can then be removed and oil should be seen spurting out of the return oil pipe.

Is is advisable not to descend hills with the machine in neutral or with the clutch disengaged: rather it is advisable to utilise the braking effect of the engine when the throttle is shut. Descending steep hills a lower gear should be engaged as this will reduce wear of the brake linings and avoid overheating of the drums. On wet or icy roads great caution should be exercised and one should avoid violent acceleration or fierce use of the brakes. It will be found that there is less danger of skidding if the tyre pressures are lowered somewhat.

Ascending hills the engine should not be allowed to labour hard in too high a gear. It is preferable to engage a lower gear early and allow the machine to climb easily on light load. Under no circumstances should hills be ascended — even for a short distance — by slipping the clutch instead of changing gear. This would inevitably lead to rapid distorsion of the clutch plates.

The headlamp ignition key

N. B. - Before the engine can be started or the electrical equipment used, the key must be pushed right down into the « contact position ».

To stop the engine and cut off all current in order to avoid discharging the battery, the key must be pulled out into the « free position » The key may be turned indifferently to the left or the right, but it must be pushed down before turning it or there is danger of

breaking it. As the engine cannot be started without the key it is advisable always to remove the key when the machine is stopped as this serves as an anti-theft precaution.

Petrol tap

The remote control of the petrol tap is to be found on the left hand side of the instrument panel. The control acts as follows: The tap is closed when the arrow on the control knob is opposite the « C ». To open the tap turn one third of a turn to the left so that the arrow points to A (see fig. 6). To bring the reserve of petrol into use turn another third of a turn to the left so that the arrow points to « R ».

N. B. - Always make sure that the locating pin of the tap is in its proper slot for the desired tap position.

Starting the engine

Insert the ignition key and make contact. Open the petrol tap and set the easy starting lever on the right handlebar to the starting position (rich mixture). Make sure that the gear lever is in the neutral position. Pull the ignition lever (on the left handlebar) into the half retarded position. Open the throttle very slightly and

actuate the kick starter with a swinging kick. As soon as the engine has started the easy starting lever should be put in the normal position.

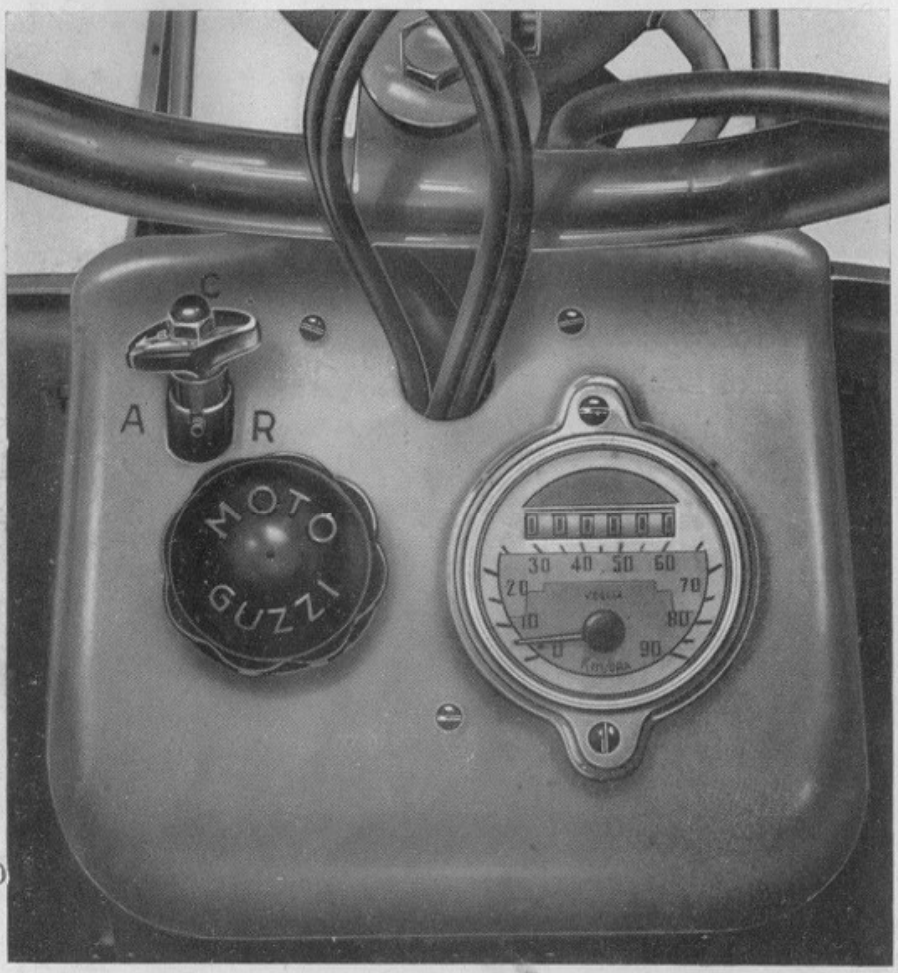

Fig. 6

N.B. - The easy starting control is not necessary for starting a warm engine. It is advisable, especially in cold

weather, to allow the engine to run very easily, and with the magneto slightly retarded, until it is warm and until the oil in the tank has had time to become quite fluid.

Racing the engine

With the machine in neutral the engine should never be allowed to run at high revolutions.

Starting the machine

After starting the engine the prop stand can be clipped up. Then, after sitting in the saddle, the clutch lever should be fully withdrawn, the bottom gear engaged, and then the clutch lever slowly released and the throttle opened as the clutch starts to « bite ».

Changing gear

To change to a higher gear the throttle should be shut and the clutch simultaneously withdrawn. The gear lever should be moved then to the next position and the clutch re-engaged and the throttle opened. To change down, the procedure is reversed, except that the throttle should not completely be closed - experience will lead to an aptitude for judging how far to shut the throttle to accomodate the speed of the engine to the lower gear.

Change up too soon rather then too late. Change down too late rather then too soon.

Use of the ignition control

It is rarely necessary to touch the control when under way - only when the engine is heavily loaded should it be retarded slightly. Its main purpose is to preclude the possibility of the engine « kicking back » whilst it is being started.

Stopping the machine

To come to a standstill the throttle should be shut and both brakes evenly applied. Just before the machine stops the clutch should be withdrawn and the gear lever put in the neutral position. It is well to get into the habit of using both brakes simultaneously. If it is necessary to make an emergency stop — whilst going in a straight line — more effect can be got from the front then the rear brake which can more easily lock the wheel, and so lead to the danger of a fall.

Stopping the engine

To stop the engine the ignition key should be withdrawn from the contact position after which the machine may be rested on the prop stand and the petrol tap closed.

Checking over

After a difficult journey, especially one over bad roads or in wet weather, the machine should be cleaned at once and checked over externally.

Storing away

If the machine is going to be put out of use for any fairly long period:

1. Clean the machine thoroughly (See General Maintenance).
2. Introduce into the cylinder, through the plug hole, a small quantity of oil and then revolve the engine a few times by the kick-starter to distribute the oil over the surfaces of the cylinder.
3. Raise the machine so that the tyres are out of contact with the ground - especially if the floor is damp or greasy.
4. Cover, with vaseline or anti-rust compound, all those metal part which are not enamelled.

Carburation faults and cures

If the engine will not start, or stop by itself the cause may be one of the following.

Lack of fuel: Check that there is petrol in the tank and that the tap is open.

Obstruction of the pipes or petrol filter: Clean or blow through to clear obstruction.

Ignition faults and their cure

If the engine will not start and the carburation is in order, suspect the ignition.

If the plug will not spark: This may be checked by removing the plug and laying it on the cylinder so that the body of the plug is touching the cylinder, but not the terminal or the connection of the high tension cable; turn the engine vigorously by the kick-starter and see if there is a spark. It is possible that a deficiency is due to leaving the machine standing in a very humid atmosphere, or sometimes to riding in heavy rain and that the plug insulation is damp. It should be wiped with a dry cloth.

Dirty plug: Clean with a wire brush and swill in petrol.

Insulation cracked: Change the plug.

Incorrect gap: Reset to .5 mm. (about .020 inches).

High tension lead: Make sure that it is not broken and that at both ends the connections are good. In the event that there is no spark, make sure that the pick-up carbon is in good condition or change it.

Verify the contact-breaker-gap; Set to .35 - .45 mm. (-.014-.019 inches) and clean.

Ignition timing faulty: Check and re-set if necessary.

Loss of compression

Check cylinder head nuts.

Plug loose or with defective washer.

Piston rings worn or broken.
Cylinder oval.
Leaking valve seats.
Incorrect tappet adjustment.

Overheating

If the engine gets too hot the cause may be:

Oil pump not working: Oil of incorrect grade or old; filter or pipes obstructed.

Ignition too retarded.

Carburation too weak.

Cooling effected by engine covered with oil and dust.

Ill use of machine

Do not ill-use the machine by violent acceleration and braking, if possible ride at fairly constant speeds. Harsh riding leads to greatly increased consumption of petrol and oil, wears out tyres and brakes and generally shortens the life of every part of the machine.

Running in

Too much emphasis cannot be placed on the advantages of careful running in. For the first 500 Kilometres (300 miles) the machine should never be allowed to go very fast, or to run under heavy load; this also allows one to become fully accustomed to the controls.

Important notice

After the running-in period all the nuts and screws should be checked for tightness and this is a precaution which it is well to follow periodically, since one loose nut may easily lead to an accident.

INSTRUCTIONS FOR MAINTENANCE

The « Galletto » needs no special care other than that which every good motor-cyclist gives to his machine.

Lubrication of engine unit

In this type of engine the oil serves not only as a lubricant but also as a coolant performing the function of water in a water-cooled engine. Under normal riding conditions about 13 gallons of oil are circulated every hour from the oil tank to the engine and back again. A geared oil pump draws oil from the tank and pumps it under pressure into the end of the crankshaft. The oil follows drillings in the shaft and emerges through the big-end bearing. From this point it is flung by considerable centrifugal force outwards, lubricating cylinder and piston, as well as the gears and, in addition, performing its cooling function. Excess oil is removed from the cylinder by the scraper ring and falls into the engine sump, where it is picked up by the return pump and forced back to the oil tank.

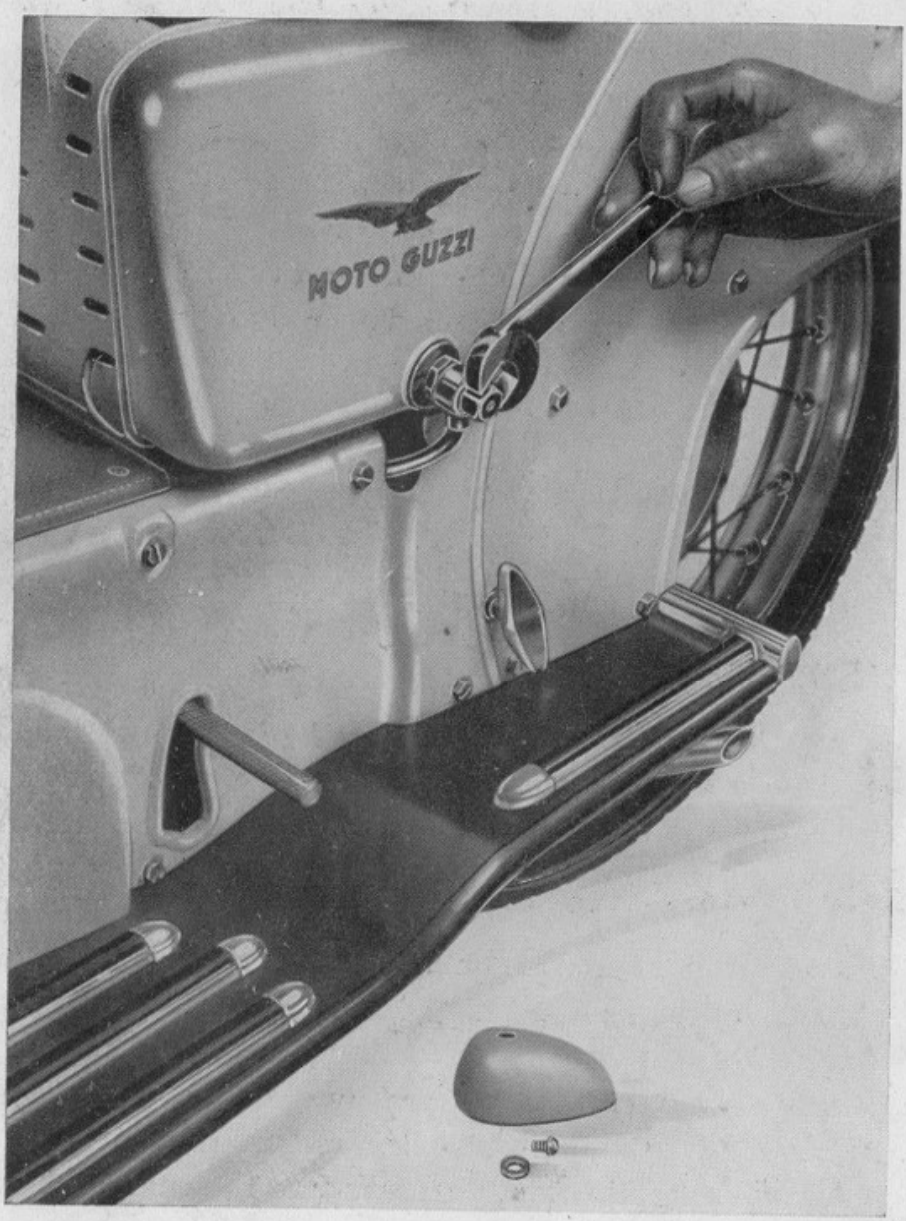

Fig. 7

It is interesting to note that the fact that the engine runs « backwards » and the cylinder lies horizontally, leads to perfect lubrication of the cylinder and piston - since centrifugal force flings the oil upwards onto the top of the cylinder and the oil then falls onto the bottom. Engine which « run forwards » suffer from the defect that only the front or bottom of the cylinder (according to whether the engine is laid flat or upright) are properly lubricated.

Important.

As engine lubricant Shell oil of the following grades should be used:

At temperatures below 10° Centigrade use Double Shell or Shell × 100 (S.A.E. 30).

At temperatures above 10° Centigrade use Triple Shell or Shell × 100 (S.A.E.) 50).

Every 1.200 miles the oil should be changed and this can best be done when the engine is hot.

To remove the oil filter, first unscrew the small cowl and the hollow bolt which secures the oil-pipe banjo union (see fig. 7). Then remove the left hand engine shield and the filter can be removed and parted by unscrewing the small filter which is housed in the

external filter. Throughly clean both in petrol (see fig. 8).

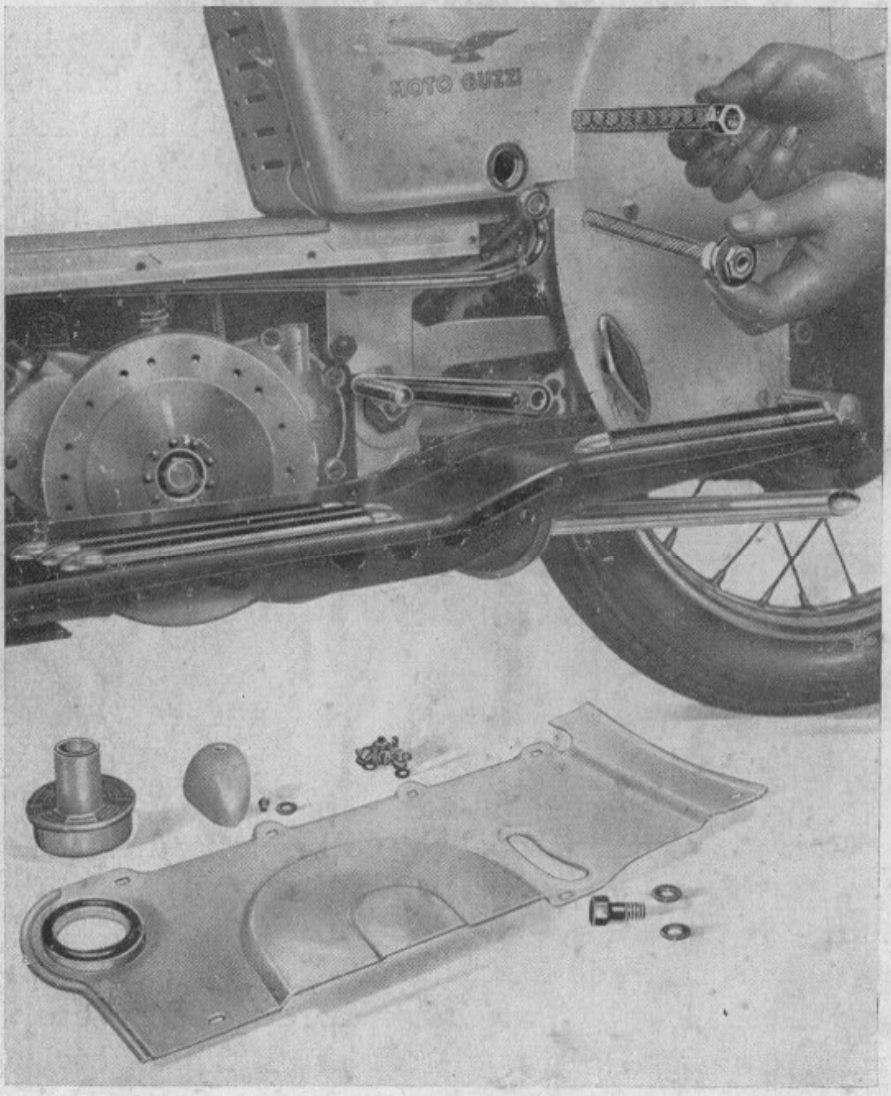

Fig. 8

Similarly clean the filter on the right hand side of the crankcase as well as all the pipes. In refitting oil filters and pipes, great care should be taken that the jointing washers are not damaged and that everything is made tight. Air leaks in the oiling system may prevent the pump working with grave danger of damage to the engine.

In the bottom of the crank-case is mounted an automatic pressure control valve. This has been regulated in the factory and it not advisable to touch it.

N.B. - To make sure that oil is circulating remove oil-tank filler cap when it should be seen spurting from the return pipe.

Lubrication of cycle parts

(see fig. 9)

Using Shell Retinax CD grease the following parts should be greased every 500 miles or so, using a grease pump to force grease through the nipples which are fitted, where necessary.

On the front forks the connecting links of the bottom links (A) as well as the pivot pins (B) should be greased. The pivot of the swinging arms (C)should also be greased. Wheel bearing need attention only at long intervals and this is dealt with later.

Chain lubrication

The chain is lubricated automatically by oil mist which emerges from the engine just behind the gear-box

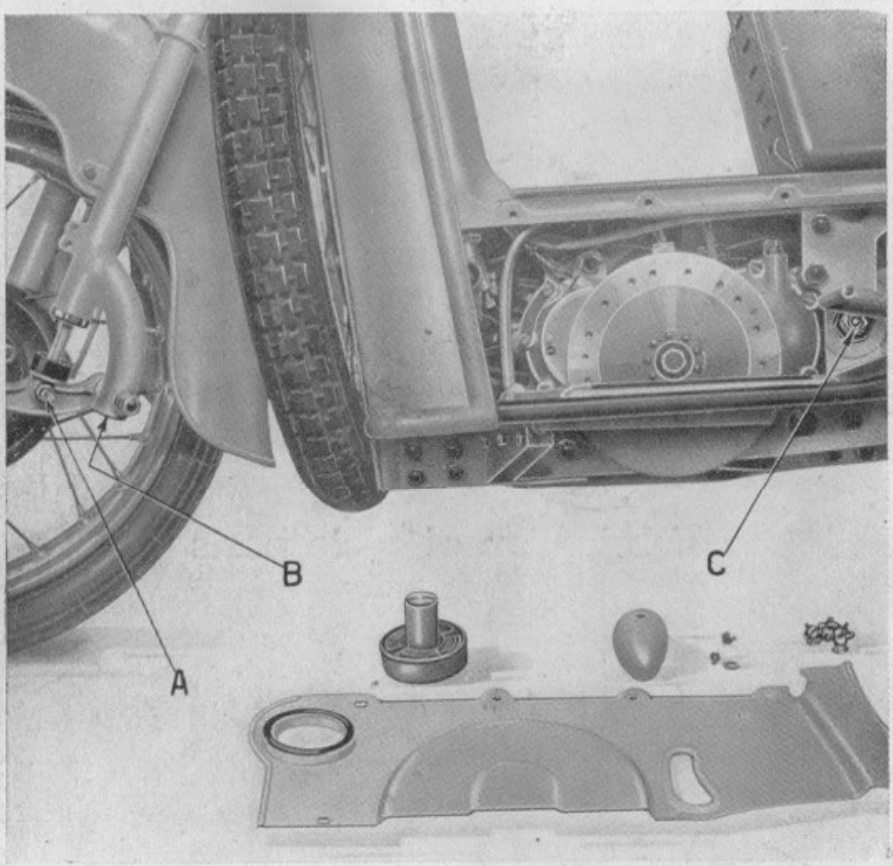

Fig. 9

sprocket; however it is a good thing to wash the chain with petrol or paraffin and soak in Shell Retinax CD every 500 miles.

Carburetter

The carburetter fitted is a Dell'Orto instrument, type MA 18 BS 1. It is fitted with a metallic-element air filter. It should be noted that the carburetter is a single control instrument designed to provide the most economical mixing of petrol and air. To facilitate starting from cold an easy starting device is fitted to the carburetter and the control for this is on the right handlebar. It should be opened only to start the engine, and then immediately closed. The engine should never be run with the control open, otherwise there is a danger of an excess of petrol washing the oil off the cylinder walls.

The float chamber incorporates a glass filter which is quite accessible.

Every 1.000 miles the filter should be cleaned: remove the spare wheel, when the knurled screw under the filter can be undone and the stirrup turned away to allow the glass bowl to be withdrawn (see fig. 10). Clean the filter with petrol (handle with care) and clean away all the sediment which has accumulated in the glass bowl.

Normal Settings.

Starting jet 80
Choke 18 mm.
Main jet Summer 80/100 - Winter 85/100.
Pilot jet 40/100.
Throttle valve 50.
Needle N. 15 2nd position (from top).

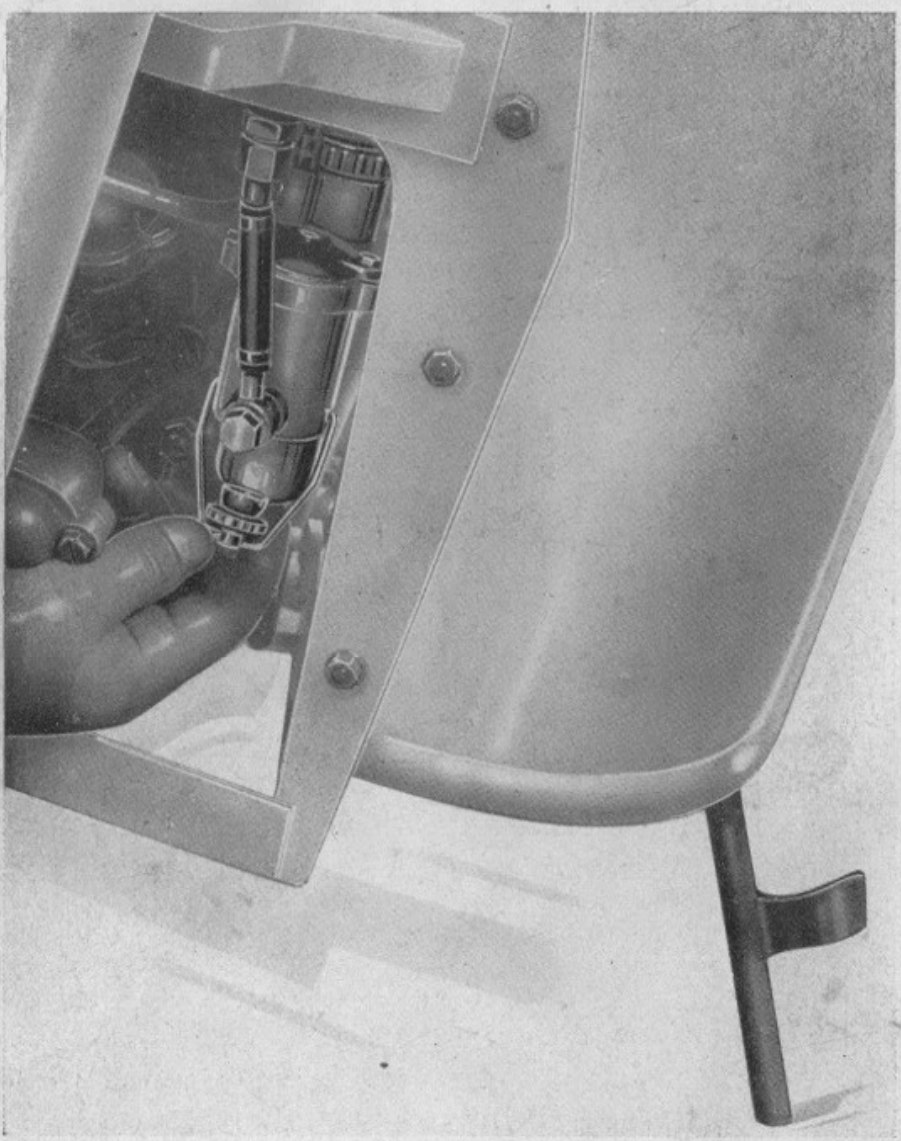

Fig. 10

Regulation of top end:

This is effected by changing the size of the main jet and or raising or lowering the needle. Raising the number of the jet is equivalent to raising the needle and vice versa.

Indications of too rich a mixture are: Blackish smoke from the exhaust pipe, irregular running with loss of power, blackened plug internally. Indications of weak mixture are: Spitting back through the carburetter air filter, whiteness of the plug internally allied with porous plug points.

It should be noted that to decrease the temperature of the engine one should richen the mixture. On the contrary weakening the mixture increases the heat. In very cold weather, the jet size should be increased; as also it should if using petrol of heavy quality.

N.B. - To change jets or needle position it is easiest to remove the carburetter.

Setting slow running:

This should be done with engine hot. Two screws control the slow running of the engine. One of them lying horizontally just behind the mixing chamber is a needle valve. Screwing it in to its seat richens the mixture and vice versa. The other screw is inclined at an angle to the mixing chamber and can be adjusted to prevent

the throttle valve entirely closing. First adjust the inclined screw to such a position that the engine will just keep running with the twist-grip in the « fully closed position ». Then adjust the pilot jet so that the engine runs smoothly and, if necessary, re-adjust the throttle valve till the desired engine speed is obtained.

N.B. - To carry out these adjustments it is necessary to remove the left hand engine cover which is held by seven hexagonal studs.

Removing the carburetter:

Unscrew the air filter, remove spare wheel, close the petrol tap and unscrew the petrol pipe from the tank. Now slacken off the clamping ring which holds the carburetter to the inlet pipe, and the carburetter may be drawn off the pipe and the top ring unscrewed to free it from the control cables.

Dismantling carburetter (*See fig.* 11)

Every 5.000 miles the carburetter should be stripped, examined and cleaned.

Remove the filter bowl with pressure spring and filter (1). Unscrew fixing screws and remove float chamber cover (2). Remove float (3) and the float needle can be withdrawn through the bottom of the float chamber (4).

Unscrew jet cap (5) and the atomiser jet carrier (6), then the starting jet and washer (7) can be taken out. Now remove the slow running control jet (8) and the petrol pipe (9).

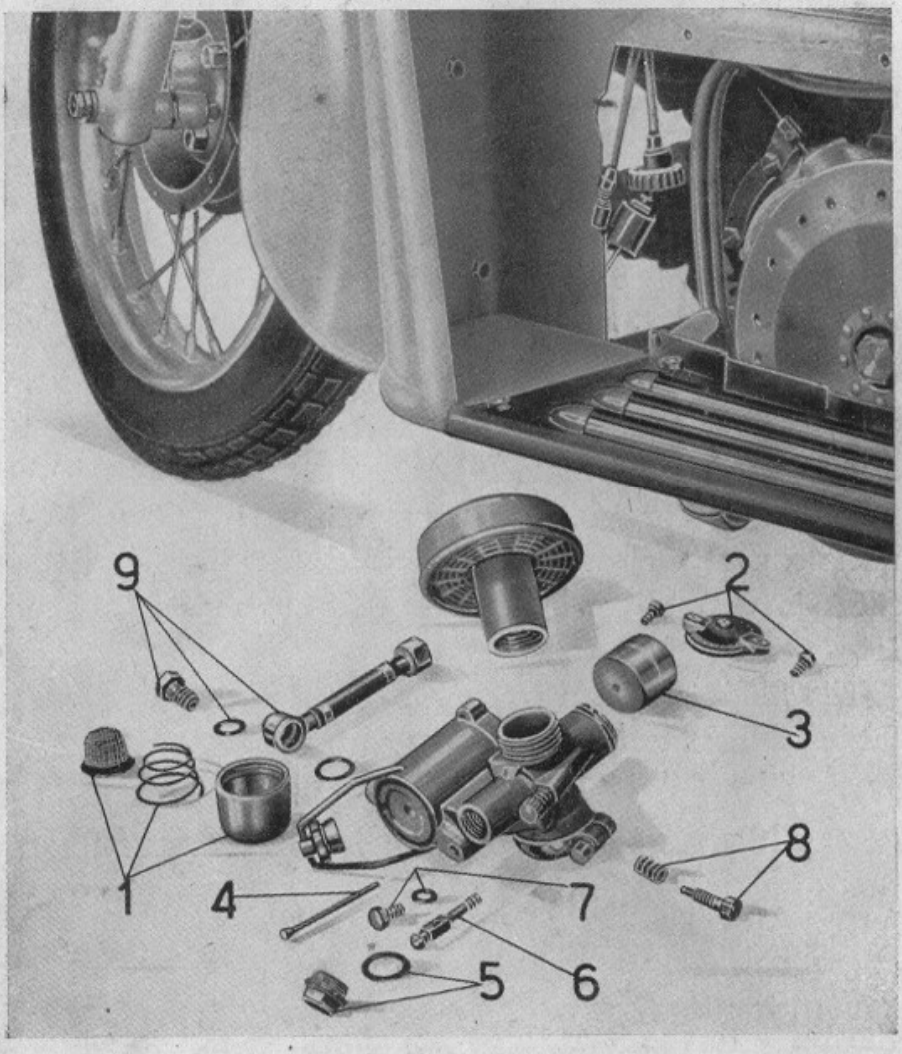

Fig. 11

N.B. To clean all the above parts it is preferable to use petrol and/or air. Beware of the use of other cleaning agents (such as wires) which may distort or alter the size of the jets and thus upset the carburation. When re-assembling take care that all the sealing washers go back in the correct place.

Air filter

Should be cleaned every 500 miles - even more frequently if the machine is used in very dry and dusty conditions. Unscrew it from the carburetter. Lever out the retaining spring ring, remove the disc and the wire wool filtering agent can be taken out and swilled in petrol. The wire wool can then be soaked in thin oil and allowed to drain off before refitting. The efficacy of the filter becomes less and less until it is useless if it is not frequently cleaned as described. Further, when the filter is very dirty it restricts the supply of air and increases the fuel consumption.

The filter is placed in such a position that is already fairly well protected from dust and water.

Cleaning exhaust pipe and silencer

Every 5.000 miles the exhaust pipe and silencer should be detached, dismantled and cleaned. To strip the silencer take off the lock nut on the right end and unscrew the body to the left. Using a metal brush clean out all the carbon, and make sure that the baffle plates are

clean, not distorted, and that the holes in them are clear. (See fig. 12). In re-fitting make sure that all joints are gas tight.

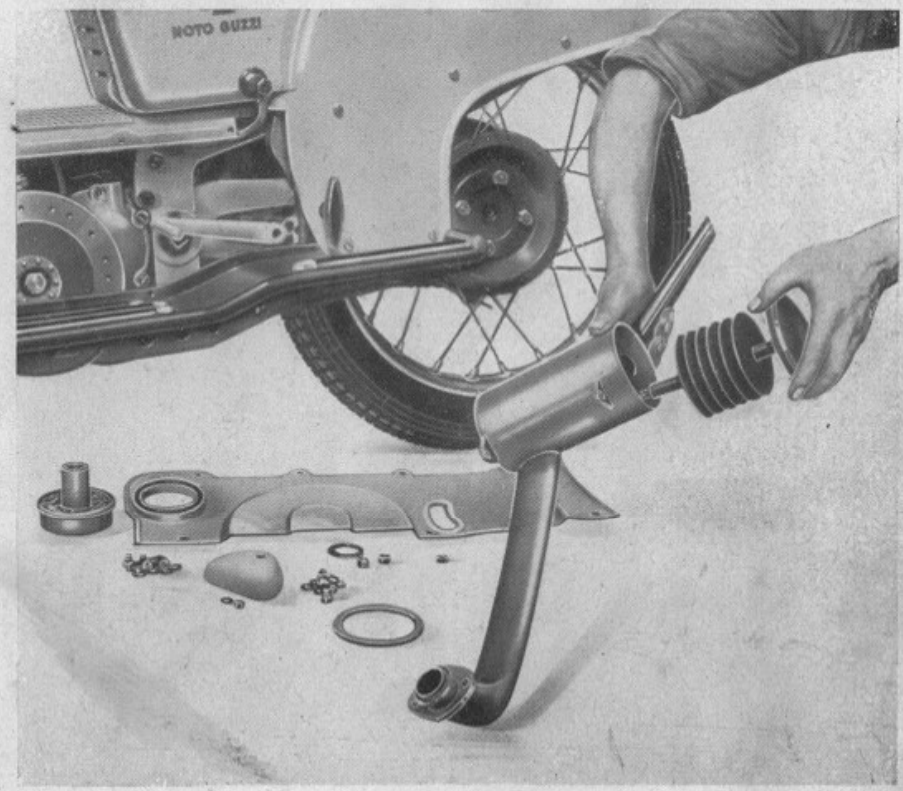

Fig. 12

Valve timing

First of all adjust both tappet so that there is .2 mm. (.080 inches) of play.

When the arrow with two O's stamped on the rim of the flywheel is about 45 mm. (a shade more than 1 3/4

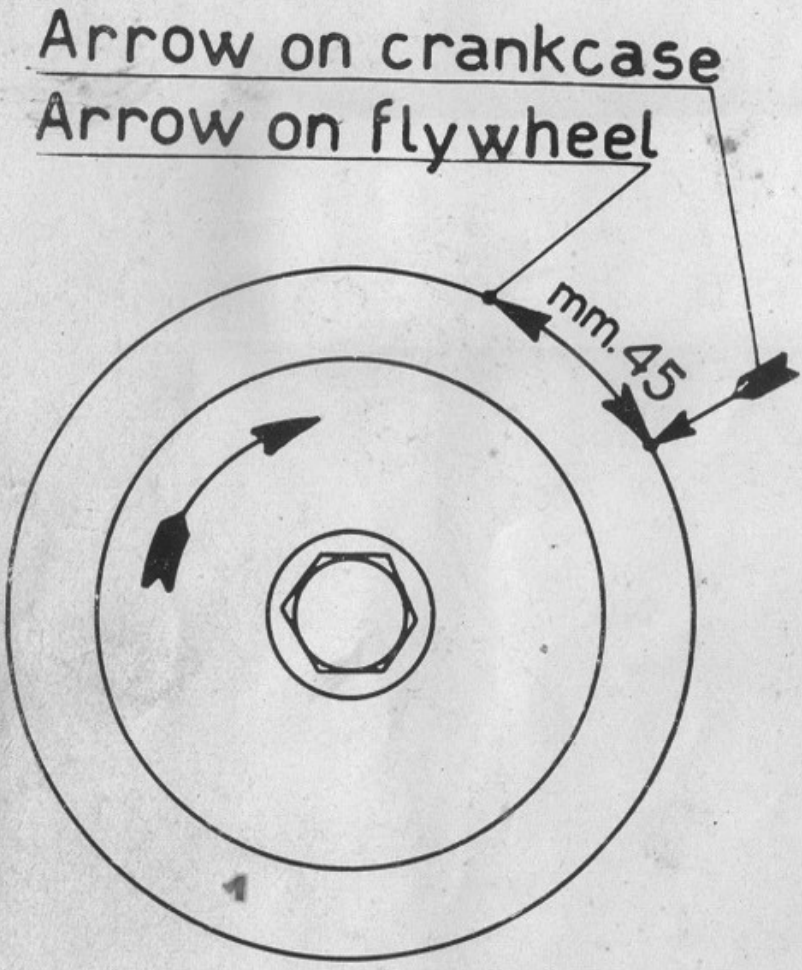

Fig. 12 bis

inches) from the arrow stamped on the crankcase (fig. 12 bis) the inlet valve should start to open.

With the setting of the inlet valve, the exhaust valve timing follows automatically. The key for the engine timing pinion should be fitted in the slot nearest to the mark on the engine pinion, and this mark should be set between the two marked teeth of the cam wheel (fig. 13).

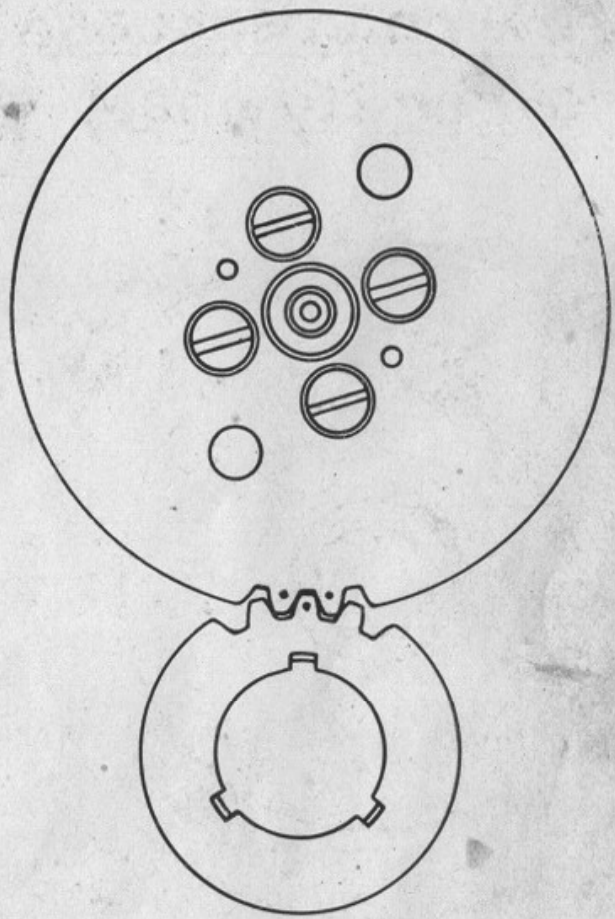

Fig. 13

Dismantling flywheel magneto

Remove the carburetter air filter, the oil-filter cover plate, the left-hand engine shield and footboard, and the central shaft nut which retains the flywheel. Then the body of the special extractor can be screwed into the flywheel boss, held firmly, whilst the extractor bolt is screwed in and forces the flywheel off its taper (fig. 14).

Fig. 14

Timing ignition

When the engine is about the end of compression stroke - with both valves closed and the piston nearly at top-dead-centre and the ignition lever in the fully-advanced (slack wire) position the contact-breaker points should commence to open when the arrow (the one *without* the two O's) on the flywheed rim is opposite the arrow on the crankcase. If it is not so the position of the contact-breaker cam must be changed to a position which will give the result. Before re-setting always make sure that the contact-breaker gap is correct when the points are *fully open.*

Ignition

For the setting and lubrication of the contact-breaker rotor, see fig. 15.

About every 3.000 miles check the gap which should be between .35 and .45 mm. (.009 - .012 inches). If the gap is not within these limits: Remove the cover D. Slacken screw A half a turn which will free the fixed-point carrier and allow it to move when the eccentric screw B is turned till the gap is correct, when the screw A can be re-locked.

N. B. Only make the above adjustment when the cam is in its fully open position. It is not necessary to remove the flywheel - it is only shown removed in the illustration for clarity.

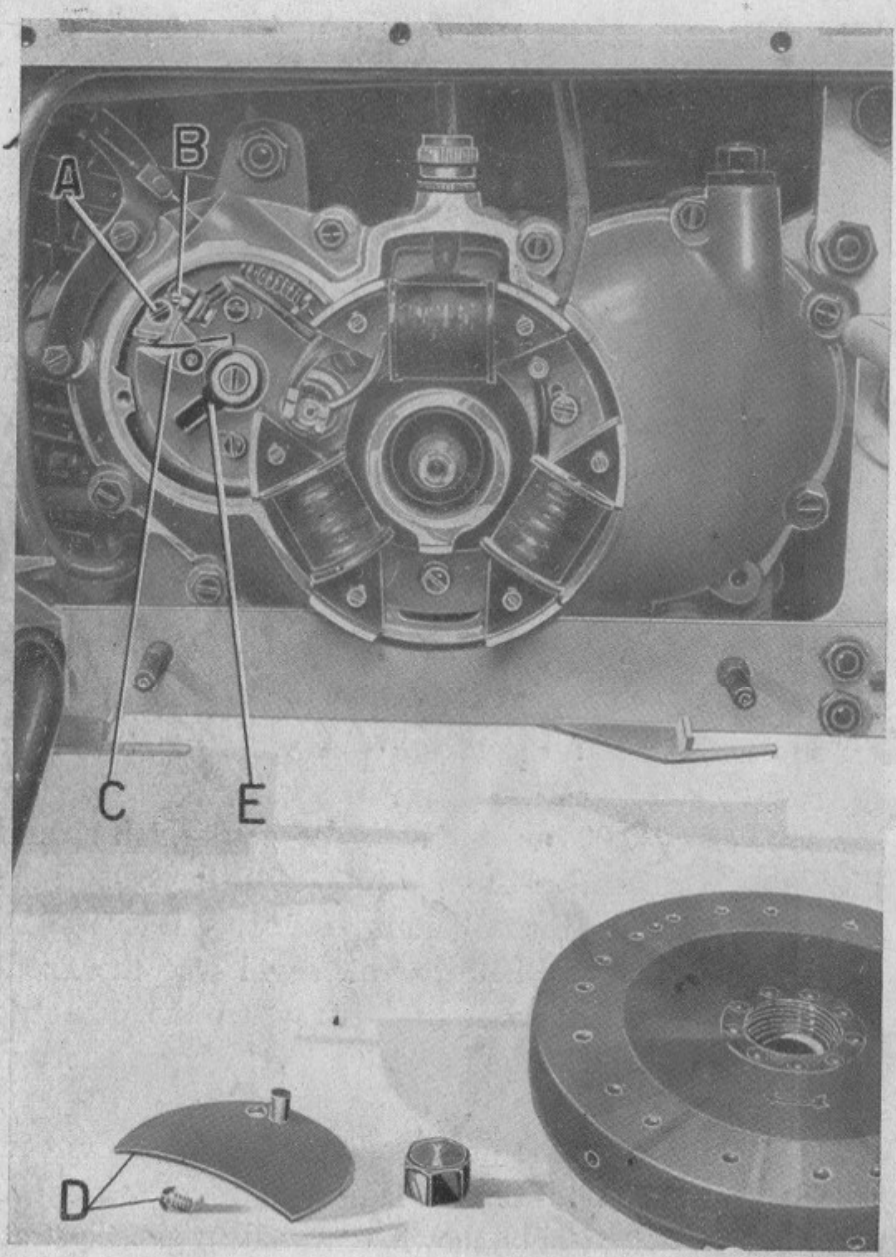

Fig. 15

Examine the contact-breaker points which should be clean and smooth and free from oxidisation. If they are not they should be dressed with a dead-smooth file.

If it is necessary to remove the cam-follower C take care not to deform its spring which is carefully set to the correct tension.

When carrying out the above work take the opportunity to re-oil the cam felt pad, also wipe a smear of grease on the spindle of the cam-follower (C). A few drops of Double Extra Shell will suffice for the felt-pad - not too much or the oil may get onto the contacts.

Plug

Examine the insulation, and if cracked change the plug. The gap of the points should be .5-6mm. (.020-.025 inches). To clean the plug use petrol and a wire brush. In fitting a plug into the cylinder head, always start it by hand for a few turns to make sure that it is not « cross threaded ». Do the plug up firmly with the plug spanner - not so tightly as to strain the thread.

Examine the condition of the high-tension cable from magneto pick-up to plug.

Head and valves

Every 3.000 miles the combustion chamber of the cylinder should be cleaned of carbon and possibly also the valves re-ground if this appears to be necessary.

To remove the cylinder head: Detach the exhaust pipe, then the oil pipe from the cylinder head and the carburetter. Using a box spanner undo the cylinder head nuts (see figure 16) and wriggle the head off. Holding the head on a bench pour about an egg-cup full of petrol into each port in turn to see whether it seeps through into the combustion chamber indicating a leaky valve seat.

If the seats are defective it will be necessary to grind in the valves, so first it is necessary to dismantle the head completely. After removing the rocker cover-plates unscrew the rocker spindles and remove them, when the rockers can be withdrawn complete with side-plates and afterwards the valves and springs. To clean the head and ports use a wire brush, a scraper and finish off with emery cloth. Take care not to damage the valve seats. Clean the valves similarly and grind them in using, if possible, only fine paste. Make sure that every trace of this grinding paste is cleaned off before re-assembly. Clean the head of the piston as the head, and if the cylinder is withdrawn take care not to disturb the relative positions of the piston rings.

Tappet adjustment

This adjustment should be made with the engine cold. Take off the spare wheel and remove the two rocker cover-plates. Make sure that the piston is at about top-dead-centre with both valves shut. Use the special span-

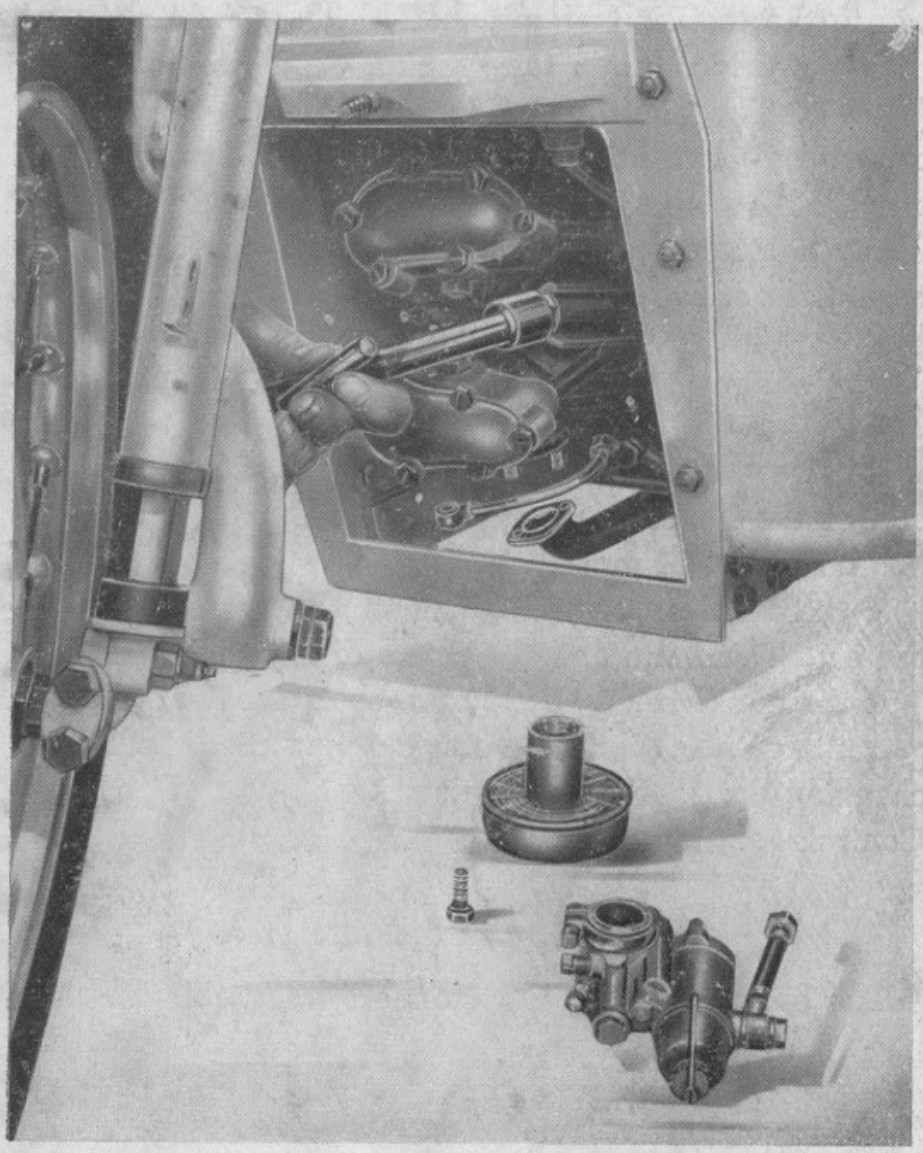

Fig. 16

ner in the tool-kit to slacken off the locknut and insert the screwdriver inside the spanner to adjust the tappet (fig. 17). The adjustment is correct when there is no clearance - but take care that although there is no appreciable play that the adjustmente is not tight. After finally tightening the lock-nut make sure that the adjustment has not been varied.

Cluth adjustment

It is necessary to adjust the clutch if the play at the end of the handlebar lever (free movement) is more or less than about 4 mm. (5/32").

If there is less than this amount there is danger that the clutch will slip and the plates distort and wear.

If the play is more, there may be incomplete disengagement of the clutch with consequent difficulty in changing gear. For the adjustment see « Handlebar Controls ».

Front fork adjustment

The bottom links of the forks are adjustable for side-play. Slacken off the lock-nut, remove all play by tightening spindle nut, re-tighten lock-nut (Fig. 18).

Steering head adjustment

If the steering head is too loose there will be movements which are harmful to the balls and races. To

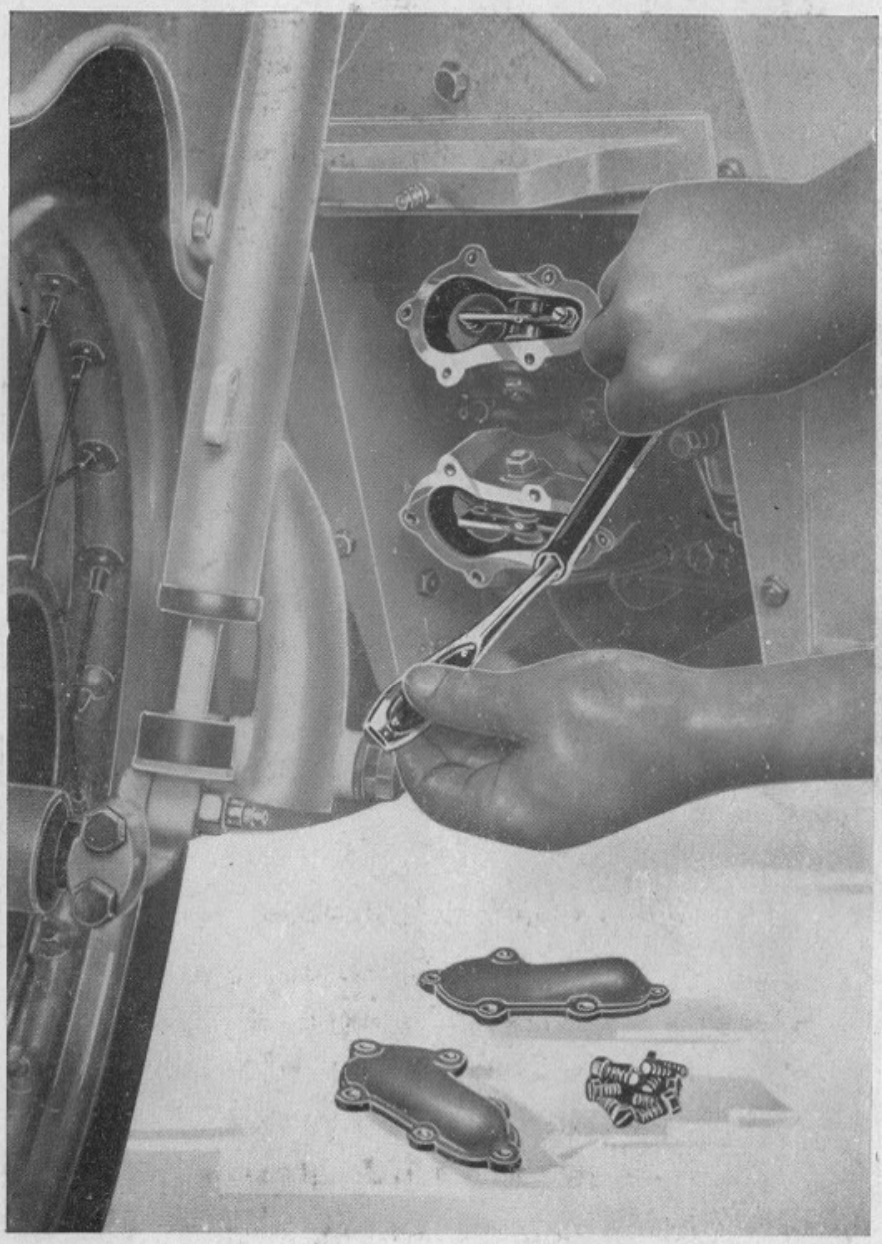

Fig. 17

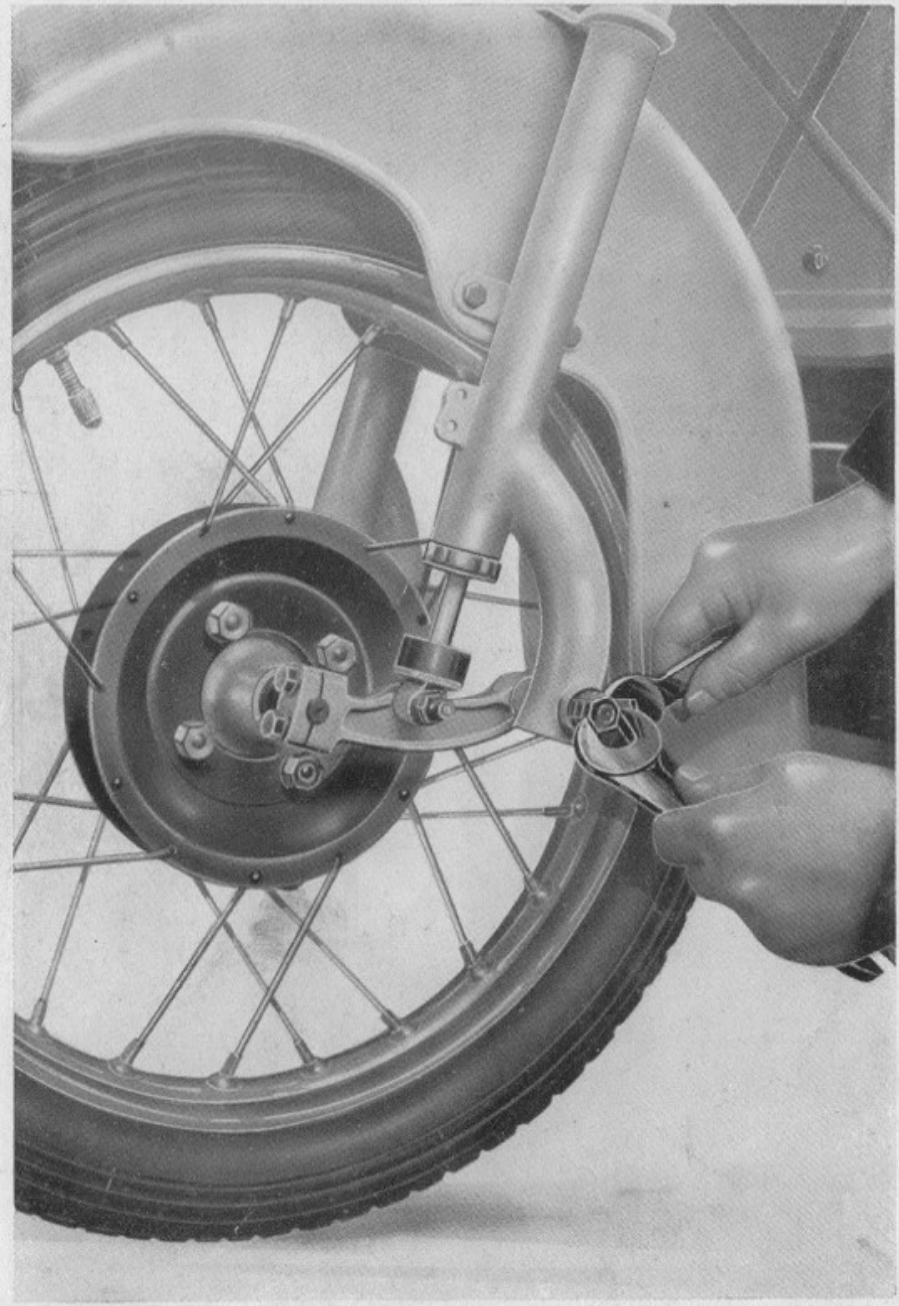

Fig. 18

adjust: Slacken off the top bolt, which secures the handlebars, also the lateral pinch bolt. Remove all but a minimum of play by screwing down the knurled ring (Figure 19), and re-tighten handlebar bolt and pinch bolt.

Chain adjustment

To adjust: slacken off the nuts of the rear wheel clamps and move adjusting lever till the desired chain tension is obtained; then re-tighten nuts (Fig. 20).

With the machine on the stand, there should be a little slackness, up and down movement, (about 25 mm. or one inch); this is necessary to ensure that the chain is not too tight when the rear frame is in the middle position of its travel. After adjustment, before tightening the two clamping bolts, make sure that the hub carrier and adjusting lever abut against the carrier arm.

After adjusting the chain always check also the rear brake adjustment.

Rear frame adjustment

Lateral play can be removed from the swinging rear arm by means of the adjustable bush at the left end of the spindle.

Slacken off the locking bolt on the engine plate, adjust bush-plate and re-lock (Fig. 21).

The spring for the rear frame is accurately set to length in the factory and it should not be needlessly altered.

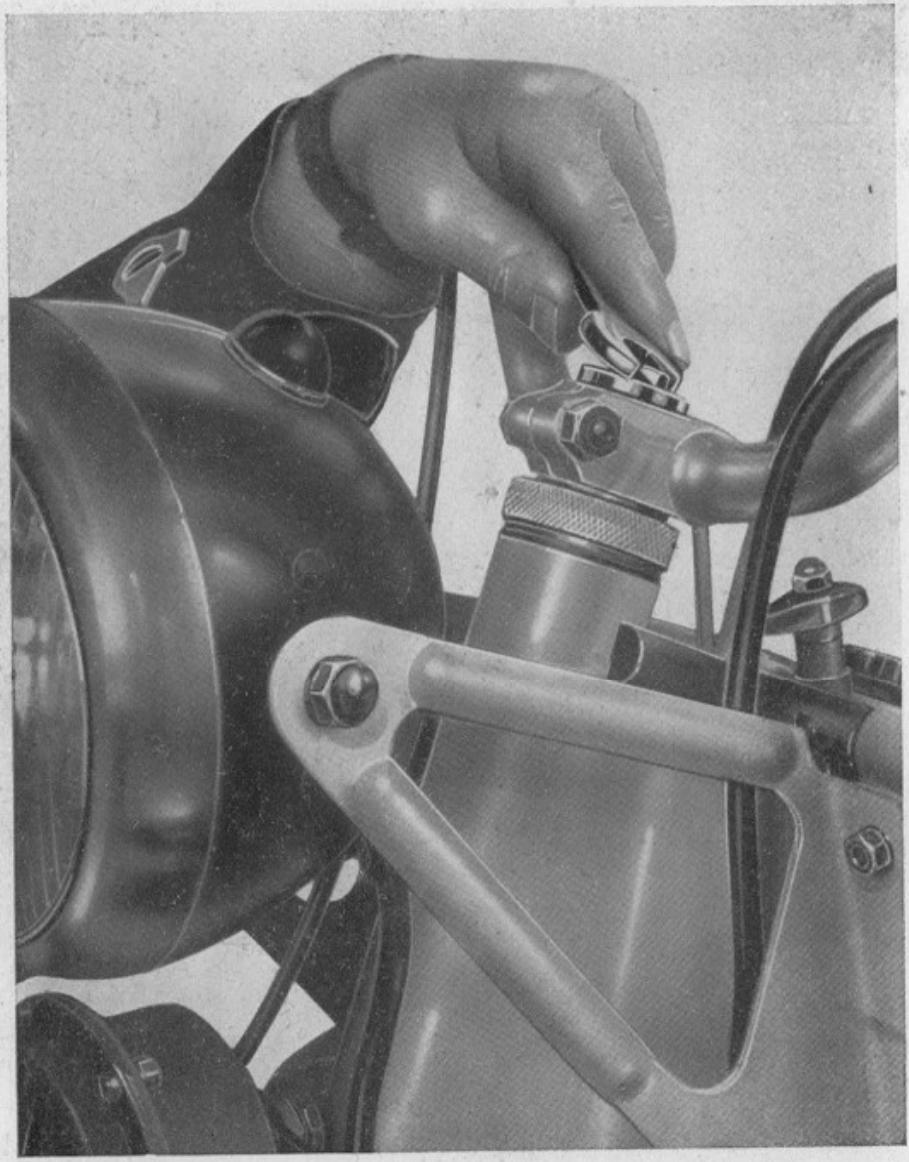

Fig. 19

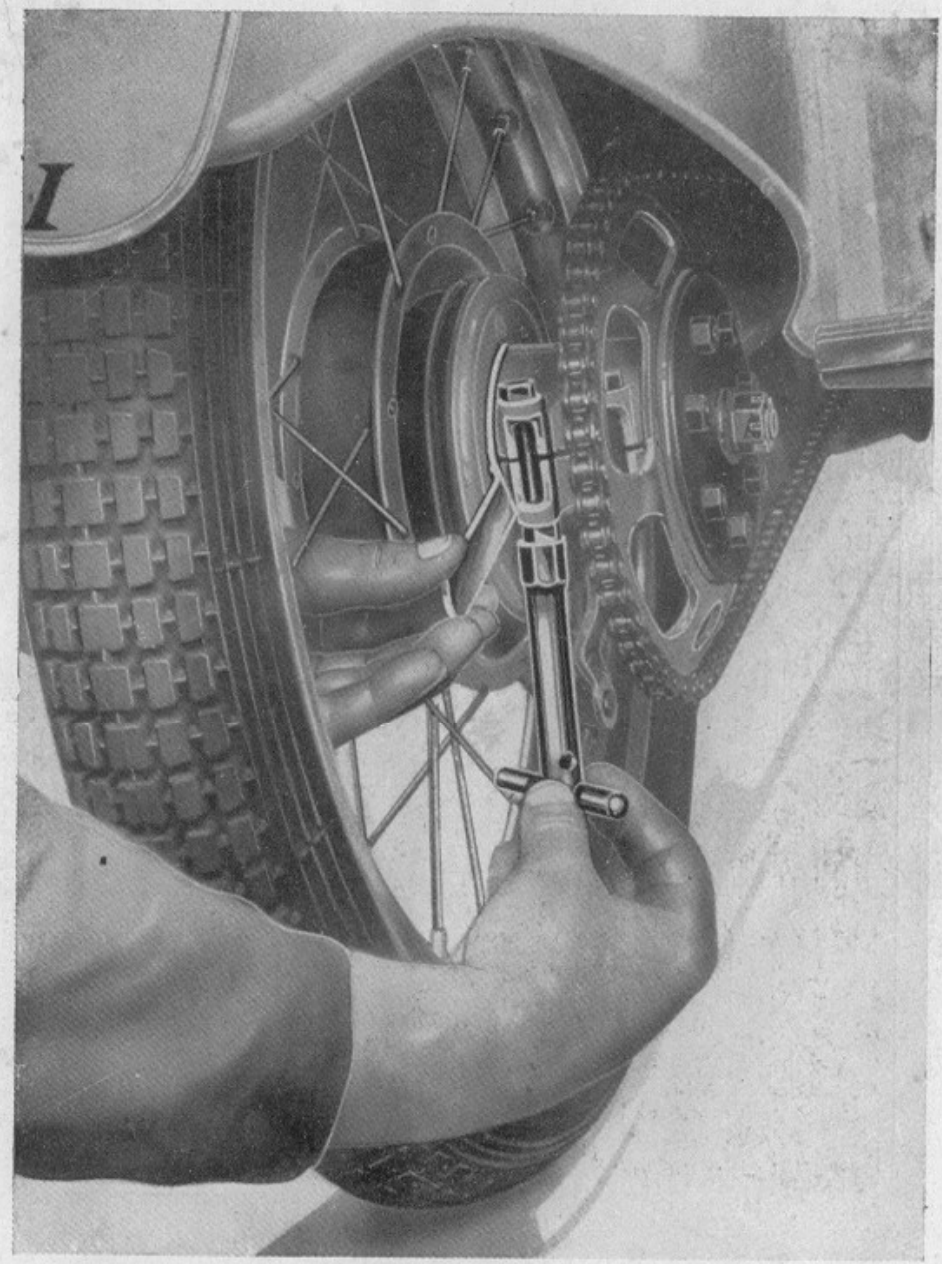

Fig. 20

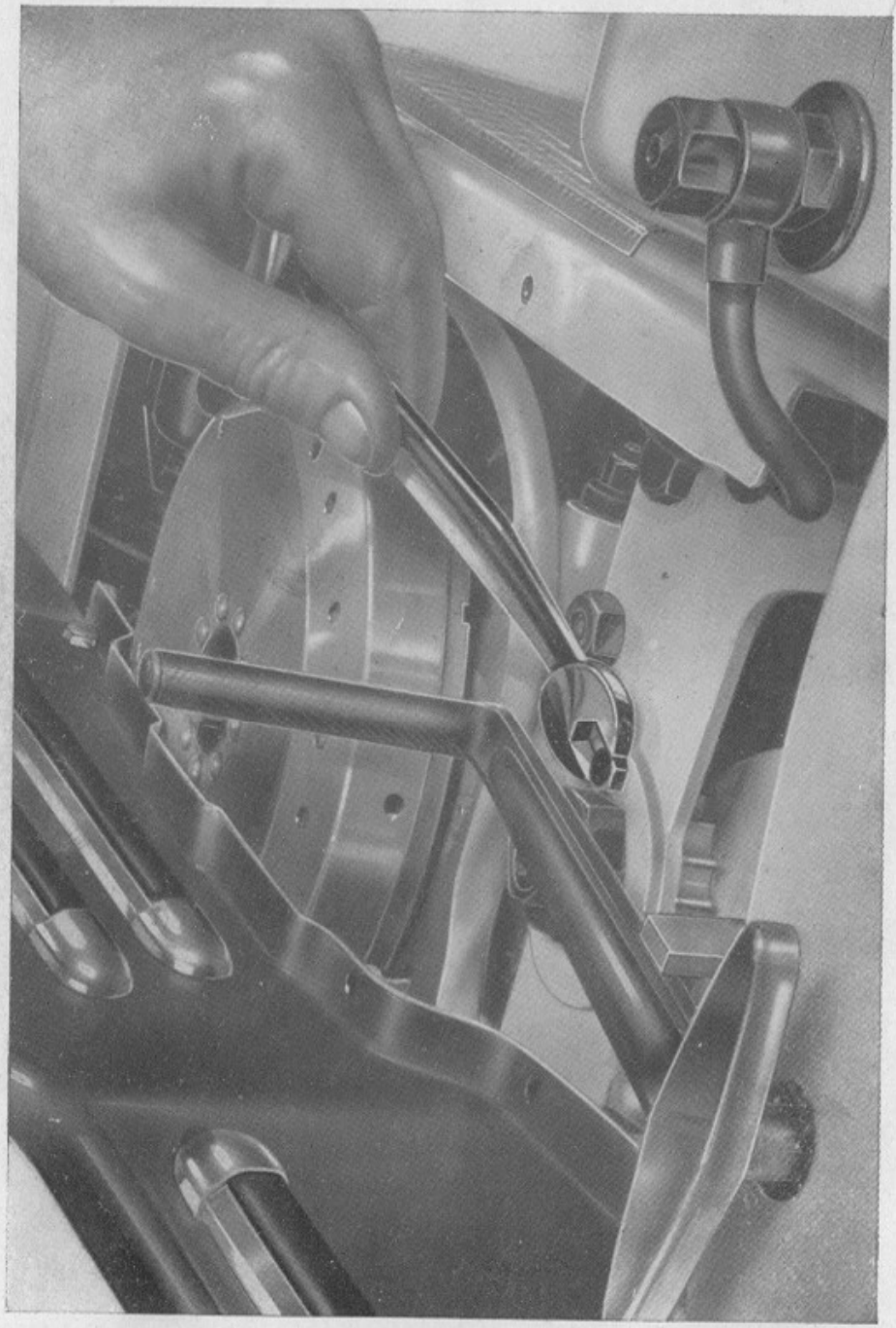

Fig. 21

If is necessary to remove the springs when re-assembling, be sure of screwing on the central rod, so that it projects by about 13 mm. (about .5 inches) from the spring housing.

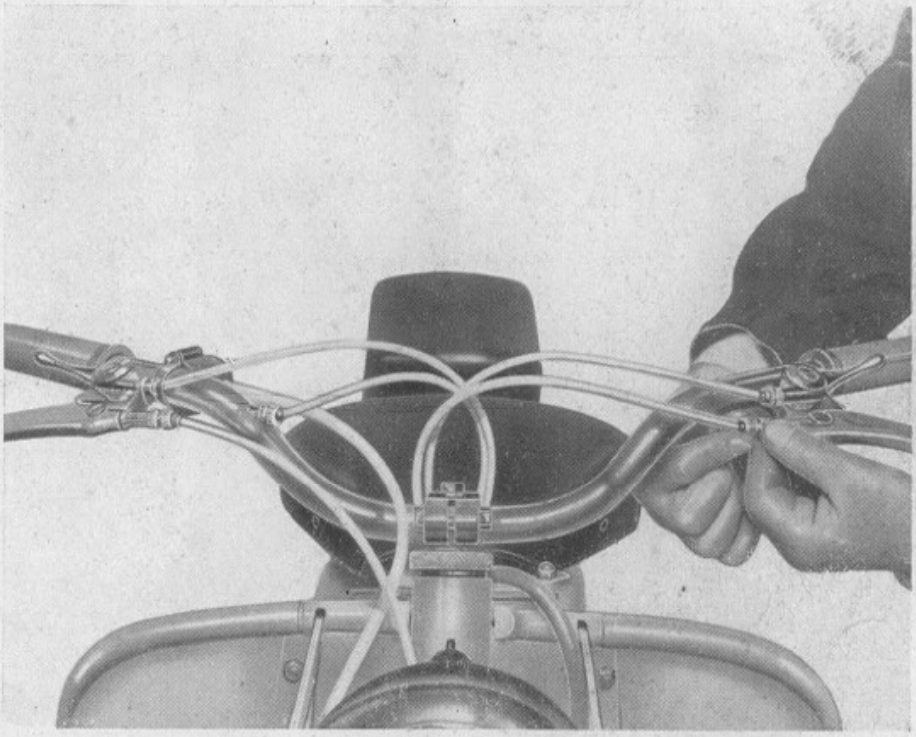

Fig. 22

Adjustment of handlebar controls

For the handlebar controls: Throttle, easy starter, front brake lever, clutch, lever, ignition control, knurled adjusting and adjuster locking tumbrils are provided, which makes adjustment of all these controls an easy matter (Fig. 22).

Brake adjustment

Both brakes should be adjusted so that there is 10-15 mm. (1/2 inch) of play at the extremity of the lever and pedal respectively, before the linings come into contact with the drums.

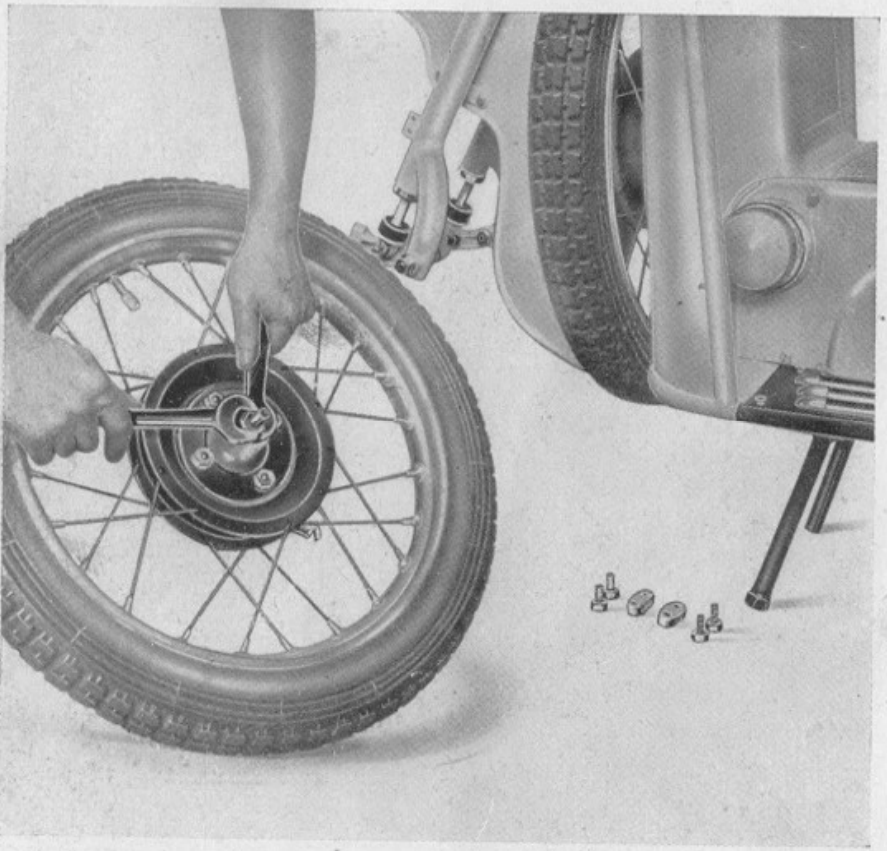

Fig. 23

Front hub adjustment

The front wheel is fitted with taper roller bearings. To remove lateral play, slacken off the lock-nut, screw up

adjusting nut and re-lock. Check after adjustment that there is the faintest discernible trace of side play. (Fig. 23). Be careful that there is this side play, since the wheel may still easily be turned with a heavy load on the bearings, otherwise this will soon wear them out.

Removal and exchange of front wheel

To exchange the front wheel for the spare wheel: Remove brake cable. Slacken off the four wheel nuts. Screw

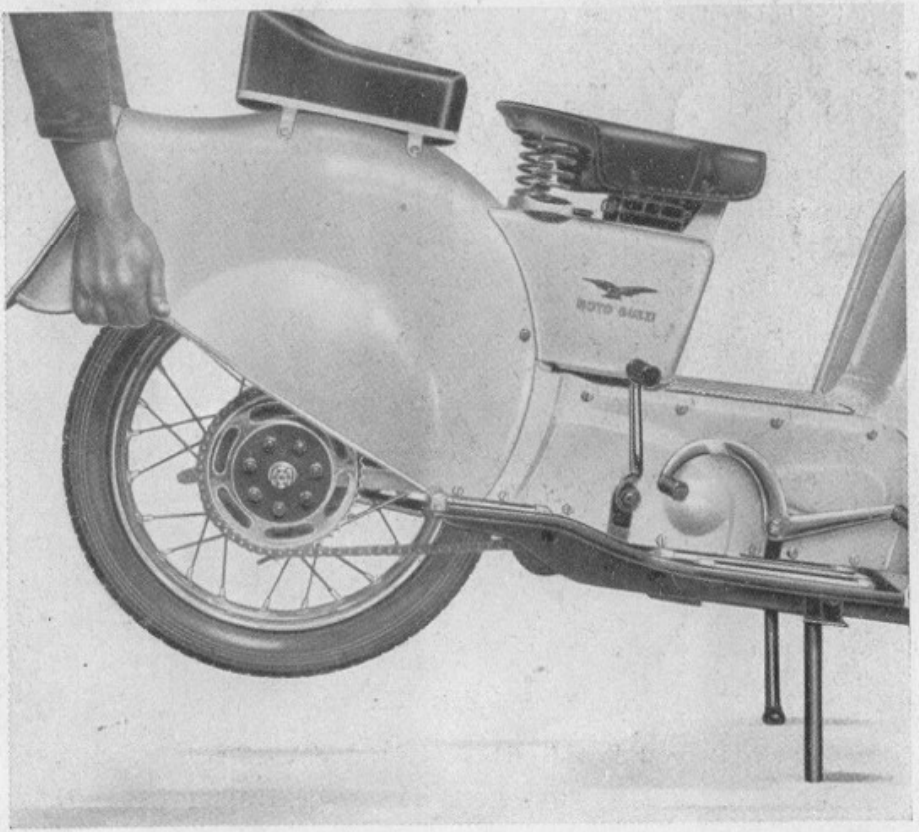

Fig. 24

onto the two appropriate studs under the front of the footboards on each side of the machine, the appropriate spanner and tube provided in the tool kit, so that they serve as a stand (Fig. 24). Unscrew the four spindle cap

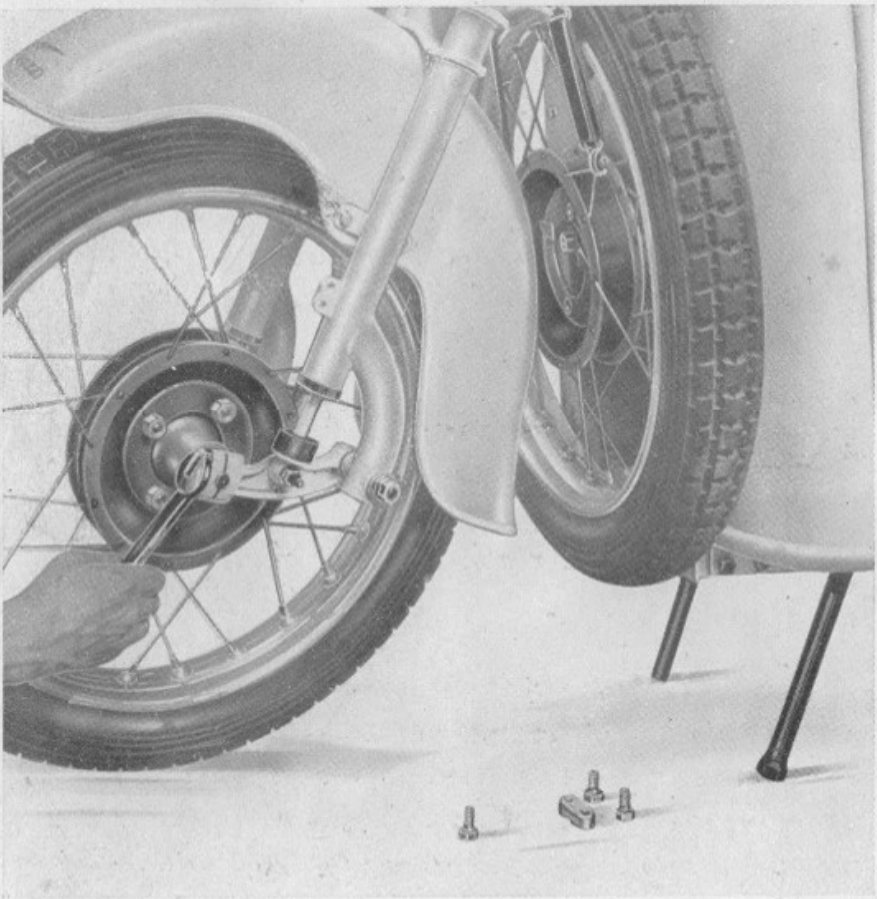

Fig. 25

nuts (fig. 25), remove the caps and the wheel may then be withdrawn. Now the four wheel nuts can be taken off and the wheel removed from the hub.

Slacken slightly the nuts in the centre of the spare wheel, twist and pull off the hub. The assembly of both wheels is simply a reversal of the above operations.

N.B. - Do not forget, in re-fitting the wheel, to see that the brake anchorage is in position on the square bolt on the forks.

If the wheel is taken off for repairs only, all that need to be done is to raise the machine and unscrew the four bolts on the two caps. There is no need to undo the four hub nuts.

Removal and exchange of rear wheel

To exchange the rear wheel for the spare wheel: - Slacken the four wheel hub nuts. Fit to the studs in the rearward positions of the left and right footboards the appropriate tube and spanner supplied in the tool kit. Raise the machine onto this stand (fig. 26). Now unscrew completely the wheel nuts and draw off the wheel. Remove the spare wheel and to fit, reverse the operations.

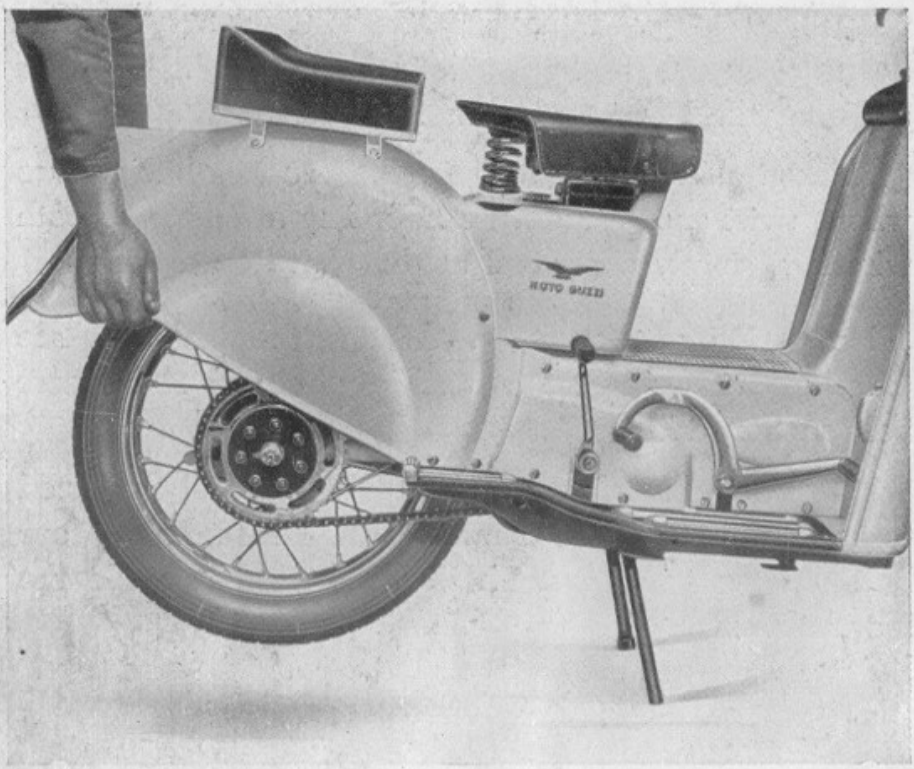

Fig. 26

Removal of right hand shield

Remove the ten bolts and slacken off about eight complete turns the bolt which retains the gear lever. This will enable the gear lever to be pulled away sufficiently for the shield to be slid out.

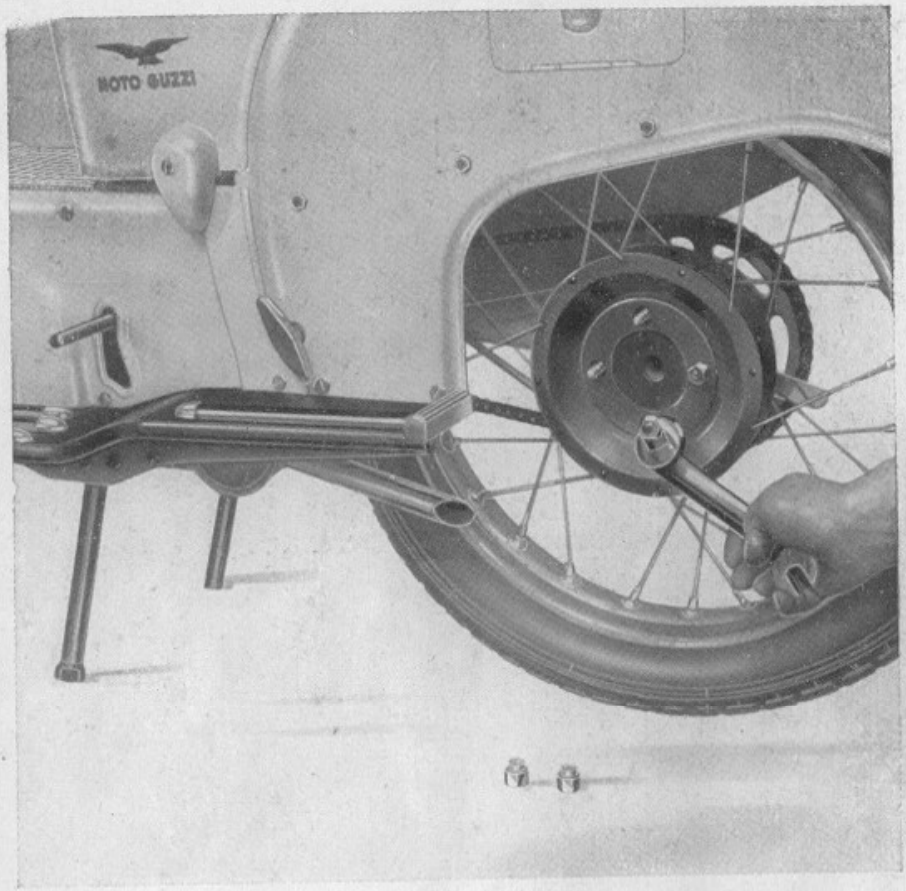

Fig. 27

Removal of gear lever

Take off right shield and completely unscrew set screw. Remove bolt and pin and the lever can be freed from the joint coupling. If it is necessary to remove the quadrant operating lever, this should be marked so that it can be re-assembled in the same relative position.

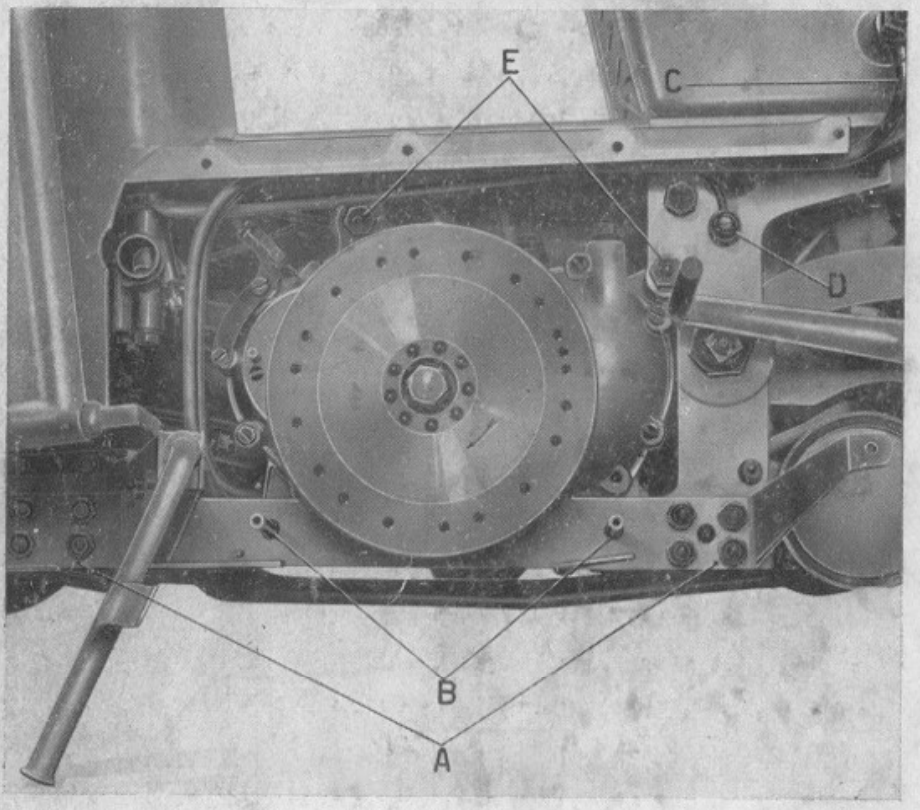

Fig. 28

Removal of engine unit

(*See Fig.* 28).

In the case that a major overhaul is required, we recommend that the work should be entrusted to a competent mechanic. However, to remove the engine unit complete:

Unscrew the carburetter air filter, take off the oil-filter cover, also the left and right hand shields.

Remove the left footboard and the left hand bottom engine plate by unscrewing the eight bolts. A. Using a soft metal drift, tap out the two engine carriers B towards the right hand side.

Disconnect the carburetter and pull it off its stub. Remove exhaust pipe and disconnect the oil union C. Disconnect from engine and tank the oil return pipe and push backwards towards the rear mudguard to allow the engine to pass. Disconnect ignition and clutch control wires.

Take off the cover of the box D and disconnect the three wires which lead to the flywheel magneto. Pay attention to their relative positions in re-assembly - facilitated by different colours and different dimensions of the wires. Remove the rear chain.

Finally, making sure that all loose parts are clear, undo the two bolts E and the entire engine can be drawn out on the left side.

Removal of crankshaft bearings

To remove the two ball and roller crankcase bearings: unscrew the three nuts on the pressure plate and remove it. When removing the opposite plate make sure to unscrew the three countersunk head screws which are threaded into the crankcase.

Electrical installation

The entire electrical system is supplied with current from the alternating generator either directly or via the battery which is kept charged correctly by a voltage controller (See electrical plan).

The generator provides directly power for the headlamp (two pole 25 Watt 6 Volt lamp) and when this is lit the rear light also is lit (5 Watt. 6 Volt lamp).

The pilot lamp (5 Watts) is powered by the battery and when the pilot light is burning the rear light also takes power from the battery instead of directly. The battery also operates the electric horn.

Headlamp:

The headlamp is perfectly watertight and therefore internal inspection is unnecessary. Note that the surface of the reflector should be treated with great care, not polished or it will easily loose its lustre. The focus of the lamps is fixed, controlled by position of the filaments, so only lamps of the dimensions and power originally fitted should be used.

Changing lamps and fuses:

Headlamp bulbs are changed from behind the reflector which can be removed complete with the glass. Lamps with the following characteristics should be used:

Main bulb: Double filament 25 - 25 Watt × 6 Volt.
Pilot bulb: 5 Watt 6 Volt.
Rear bulb: 5 Watt 6 Volt. (FESTOON BULB)

The use of a lamp of 3 Watt in the rear light endangers the life of the other bulbs.

If a fuse is blown, first of all the cause should be found and cured, then a new fuse fitted: using 2 Amp wire in the case of the « Carello » equipment, 6 Amp wire of the CEV.

Battery:

The battery fitted as standard has a capacity of 8 Ampere Hours. It is charged through a Voltage Control Unit, and in case charge stops the fuse in the headlamp should be examined.

Access to the battery is obtained as follows:

Disengage the saddle springs and tilt forward. Undo the battery strap and remove the lid.

To maintain the battery in good condition:

Examine the level of electrolite periodically, adding distilled water until the battery plates are submerged about a quarter of an inch. This check should be carried out every month during the summer, every two months during the winter.

The terminals should be kept free of oxidisation and this can be assisted by keeping them well smeared with Vaseline.

When the battery gives less than 5.4 Volts without

load, it should be re-charged at a rate of about 1 Ampere Hour.

Horn and dipper switch:

These require no adjustment, but if by chance it is found that the rear light frequently fails, examine the dipper switch to see that is is making good contact.

Electric horn:

After long use the electric horn may fail altogether or lose its « tone », in which case it will need adjustment; but first of all make sure that the battery is not discharged. If it is charged, the electric horn will have to be regulated. This is done by tightening with a screwdriver the adjusting screw located under the small rubber cap behind the instrument until the vibrator reaches the correct intensity. To increase the « tone », remove the front cover on the horn and regulate the self locking knurled screw.

Cables:

Occasionally check over all the electric wires. Pay special attention to places where they may rub on other parts and if there is danger of « shorts », either insulate or renew them.

General maintenance

To keep the machine in good condition pay attention to the following points:

Cleaning:

The engine is best cleaned either with petrol or paraffin (better still benzole) applying a brush and afterwards finally cleaning off with a rag.

Enamelled parts should never be cleaned dry, or the enamel will be scratched. Thoroughly wet with a sponge or wash off with a hose and sponge. Make sure that all traces of dust or dirt are removed before drying off with chamois leather.

To keep the enamel in good condition it should be lightly polished with a soft cotton cloth and a good car polish.

Do not use petrol or paraffin on the enamel. It will render it opaque and ultimately destroy it.

Retouching Paintwork:

The « Galletto » is nitro-cellulosed.

In the case of small parts it is best to re-enamel the part completely. After completely cleaning the exterior it should first be given a coat of anti-rust and baked at 90-100° Centigrade for about three hours.

The part should then be filled and rubbed down and

afterwards allowed to dry in the air for about two hours.

The part can now be sprayed with nitro-cellulose being allowed to dry for about two hours between each coat. Preferably at least three coats of cellulose should be given and the parts afterwards polished with a soft cloth, using one of the special preparations for this purpose.

Transfers:

The transfer of the « Galletto » (Cock) is affixed to the top of the right-hand leg-shield in front.

The transfers of the Eagle with the words « Moto Guzzi » are fixed to each side of the tank, also to the mudguards.

The transfers are fixed with varnish. About an hour after fixing the paper back should be thoroughly soaked with a sponge and peeled off. The remaining transfer shoudl then be washed of wiht turpentine and then with cold water.

Periodical maintenance

Every 500 miles: Lubricate with the grease gun the grease nipples on the front forks, the fork links and the swinging rear arm. Lubricate the chain. Clean the carburetter air filter. ↔ 1000 K.M.

Every 1000 miles: Change the oil and clean the oil filter. Clean the carburetter petrol filter. ↔ 2000 K.M.

Every 1500 miles: Check the level of acid in the battery. ↔ 2500 K.M.

Every 3000 miles: Clean the cylinder head and valves. Check the contact- breaker gap, oil the felt pad and the contact- breaker bearing pin.

Every 5000 miles: Dismantle and clean carburetter.

Every 6000 miles: Clean exhaust pipe and silencer, check over all nuts and bolts.

LIST OF AGENTS

ITALIAN AND FOREIGN

LIST OF NATIONAL AGENTS

ABBIATEGRASSO (Miano) - *Cassani Attilio* - v. Novara, 6 - tel. 134.
ACQUI (Alessandria) - *Corzino Pietro* - v. Alessandria, 6 - tel. 257.
ADRIA (Rovigo) - *Marotto Giovanni* - v. Burbera, 2 - tel. 286.
AGRIGENTO - *Cascino Angelo* - Piazza Municipio, 302 - tel. 1160.
ALBA (Cuneo) - *Baragiotta Giuseppe* - v. Cuneo, 9 - tel. 1481.
ALBENGA (Savona) - *Rossi Armando* - v. Pontelungo, 76 - tel. 2321.
ALESSANDRIA - *Ricagni Giovanni* - v. Vochieri, 23 - tel. 1596.
ALESSANDRIA - *Taverna Franco* - p.za Garibaldi, 1 - tel. 30-30.
ANCONA - *Baldoni Albino* - v. Palestro, 5 - tel. 2181.
AOSTA - *Brunod Giuseppe* - p.za E. Chanoux - tel. 3250.
AREZZO - *Mori Dante* - c.so Italia, 245 - tel. 2722.
ARIANO IRPINO (Avell.) - *Savino Emilio* - v. Nazionale, 130 - tel. 68.
ASCOLI PICENO - *Norcini Pala Giuseppe* - v. Palestro, 14-18.
ASTI - *Perosino Giuseppe* - c.so Dante, 6 - tel. 1934.
AULLA (Massa Carrara) - *Silicani e Passani* - v.le della Stazione.
BARI - *Feroni Costantino* - v. Manzoni, 141 - tel. 12349.
BARLETTA - *Feroni Costantino* - v. Baccarini, 13 - tel. 1257.
BELLUNO - *Zoppè Giuseppe* - v. Simon da Cusighe, 4-5 - tel. 380.
BENEVENTO - *Messina Giulio* - c.so Garibaldi, 48.
BERGAMO - *Bonaldi Lorenzo* - v. Giorgio Paglia, 33 - tel. 5337.
BERGAMO - *Raccagni Ugo* - v. G. B. Morone, 44 - tel. 4235.
BIELLA (Vercelli) - *Coda P. Armando* - v. Gramsci, 11 - tel. 2015.
BIELLA (Vercelli) - *Mello Giuseppe* - v. E. Bona, 16 - tel. 4084.
BOARIO TERME (Brescia) - *O.N.G.A.* - v. Nazionale - tel. 60.
BOLOGNA - *Cesari Leopoldo* - v. Altabella, 7 - tel. 28733.
BOLZANO - *Casa del Pneumatico* - v. Renon, 21 - tel. 2142.
BORGO S DALMAZZO (Cuneo) - *Varrone F.lli* - v. Umberto, 9 - tel. 52.
BRA (Cuneo) - *Baragiotta Giuseppe* - v. V. Emanuele, 83 - tel. 203.
BRESCIA - *Ditta F.lli Lombardi e Dotti Luigi* - v. Dante, 7 - tel. 6420.
BRESCIA - *Mandolini Adelmo* - corso Cavour, 31 - tel. 5708.
BRINDISI - *Antelmi Andrea* - c.so Umberto I, 142 - tel. 1362.
BUSTO ARSIZIO (Varese) - *Binda & Castellanza* - v. Gen. Fanti, 12 - tel. 31624.
CAGLIARI - *Cossu Celestino* - v. P. Paoli, 36 - tel. 3683.
CALTANISETTA - *Lo Monaco F.lli* - c.so Umberto I, 17/21 - tel. 1528.
CAMPOBASSO - *Vitale F.lli* - v. P. di Piemonte, 13 - tel. 5141.
CARATE BRIANZA (Mil.) - *Manzoni Vito* - v. Rezzonico,2 - tel.99868.
CASALE MONF. (Aless.) - *Borzone Carlo* - p.za 25 Aprile, 16 - tel.. 728.
CASERTA - *Baino Roberto* - c.so Trieste, 72 - tel. 1428.
CASTELLUCCHIO (Mantova) - *Leoni Guido* - v. Roma, 56.

CATANIA - *Branciforti Giuseppe* - v. Conte di Torino, 3 - tel. 13983.
CATANZARO - *Proto Andrea* - c.so Mazzini, 85 - tel. 1813.
CATTOLICA (Forlì) - *Molari Silvio* - v. Garibaldi, 115 - tel. 11.
CECINA (Livorno) - *Galoppini Armando* - v. Aurelia, 68.
CENTO (Ferrara) - *Casanova Bonando* - v. Donati, 3 - tel. 97.
CERNUSCO S/N. (Milano) - *Cazzaniga Pietro* - Strada Padana Superiore, ? -telefono 222.
CESENA (Forlì) - *Battistini Cesare* - c.so Cavour, 25 - tel. 147.
CHIAVARI (Genova) - *Sola Agostino* - p.za Cavour, 2.
CHIAVENNA (Sondrio) - *Mezzera Ugo* - v. G. Pedretti, 27 - tel. 119.
CHIETI - *Girolami Francesco* - p.za Trento Trieste, 6-7 - tel. 4201.
CITTA' DI CASTELLO (Per.) - *Marinelli Umberto* - c. V. Em. 17 - t. 240
CODOGNO (Milano) -*Perondi Silvio* - v. Alberici, 20-22 - tel. 408.
COGGIOLA (Vercelli) - *Mello Albino* - v. Garibaldi, 50.
COMO - *A. Capelletti e Pedraglio* - v. Milano, 44 - tel. 8723.
CONEGLIANO V. (Trev.) - *Zoppè Giuseppe* - v. Spelanzon, 36 - tel. 159.
COSENZA - *Altomare Mario* - v. Pasubio, 9-11 - tel. 1843.
CREMONA - *Magni e Galelli* - v. Trento e Trieste, 27 - tel.2654.
CREMONA - *Casa della Moto di Parolini e Pigoli* - *v. Ghisleri, 3-a* - telefono 1833.
CUNEO - *Varrone F.lli* - c.so Gesso, 10 - tel. 764.
DESIO (Milano) - *Galli Itala* - v. Garibaldi, 14 - tel. 66303.
DOGLIANI (Cuneo) - *Manera F.lli* - v. S. Quirico, 22.
DOMODOSSOLA (Novara) - *Casarotti Stefano* - v. Sempione, 4.
ENNA - *Grillo & Virlinzi* - v. S. Agata, 8-10 - tel. 92.
ERBA (Como) - *Beretta Vittorio* - v. Lecco, 4 - tel. 84.
FABRIANO (Ancona) - *Neri Elio* - v. A. Zonchi, 15 - tel. 550.
FAENZA (Ravenna) - *Casadei Edel* - v. Mazzini, 35 - tel. 527.
FERRARA - *Sambri Romeo* - v. Borgoleoni, 24-26 - tel. 5493.
FICULLE SCALO (Terni) - *Prudenzi Riccardo* - tel. 1.
FIRENZE - *Norchi Luigi* - v. Pietrapiana, 8 - tel. 26815.
FOGGIA - *Testa Francesco* - c.so Roma, 1 - tel. 1187.
FORLI' - *Casadei Telemaco* - v. Bruni, 9 - tel. 6712.
FROSINONE - *Celletti Sisto* - c.so della Repubblica, 51 - tel. 3106.
GENOVA - *Dell'Orso Renato* - v. Brig. Liguria, 16 R - tel. 51973.
GENOVA - *Risso & Poli* - v. Bobbio, 16 EF - tel. 81941.
GENOVA PONTEDECIMO - *Marconi Arnolfo* - v. Gallino, 3 t.499167.
GENOVA SAMP. - *Morelli & Boggia* - v. S. Dondero, 8-10 r - t.43393.
GORIZIA - *Cusulin Antonio* - v. XXIV Maggio, 4 - tel. 233.
GROSSETO - *Mancini Andrea* - v. Mazzini, 109 - tel. 2592.
JESI (Ancona) - *Giuliani Silvio* - v. Mura Occidentali -tel. 538.
IMOLA (Bologna) - *Suzzi Dante* - p.za Codronchi, 2 - tel. 239.
IMPERIA - *Ditta Ferrari Ferruccio* - v. Statuto, 3 - tel. 8150.
IVREA - *Orsino Ermanno* - c.so Nigra, 105 - tel. 1163.

L'AQUILA - *Rossi Armanno* - c.so Federico, 58-60 - tel. 3252.
LA SPEZIA - *Manzzoncini Gino* - v.le S. Bartolomeo, 9-11 r. t.21802.
LATINA - *Celletti Sisto* - v. C. Battisti, 34 tel. 3304.
LECCE - *Tommasi Giovanni* - v. di Leuca, 42 - tel. 1237.
LECCO (Como) - *Meregalli Aless.* - Lungo Lario Isonzo, 10 - tel. 2359.
LECCO (Como) - *Pirovano Giuseppe* - v. Leonardo da V.,10 - tel.2519.
LEGNAGO (Verona) - *Scaravelli Renato* - c. della Vittoria, 15 - t. 595.
LENDINARA (Rovigo) - *Sala Tenna Giuseppe* - v. Cavour, 9 - t. 147.
LIVORNO - *Susini Ugo* - v. Maggi, 30 - tel. 30438.
LODI (Milano) - *Cremascoli G. B.* - c. Adda, 41 - tel. 2100.
LUCCA - *Frediani &Lencioni* - v. Carlo del Prete - tel. 6103.
MACERATA - *Moretti Primo* - c.so Cavour, 15 - tel. 398.
MAGENTA (Milano) - *Viola Giuseppe* - v. Mazzini, 9 - tel. 226.
MANTOVA - *Bollini Alessandro* - v. Scarsellini, 9 - tel. 1858.
MASSA - *Serafini Enrico* - v. E. Chiesa, 29 - tel. 7296.
MATERA - *Ponte Tommaso* - v. Lucania, 93 - tel. 1211.
MERATE (Como) - *Casati Benvenuto* - v. Statale, 30 - tel. 364.
MESSINA - *Arno Paolina* - Piazza Centonze, 6/7 - tel. 11384.
MESSINA - *Arnò Pietro* - v. Salandra, 48/52 - tel. 11348.
MILANO - *Co.R.E.M.* - c.so Concordia, 12 - tel. 25540.
MILANO - *Fiorini Primo* - v. Lepontina, 12 - tel. 690385.
MILANO - *Lorenzetti Enrico* - v. Vincenzo Monti, 55 - tel. 44658.
MILANO - *Micheli Pino* - v.le Col di Lana - tel. 380075.
MILANO - *Negrini Giovanni* - v. Parmigianino, 11 - tel. 40873.
MILANO - *Tronconi &Zanoni* - viale Monza, 16 - tel. 265508..
MODENA - *Canepari Armando* - c.so Adriano, 6 - tel. 3854.
MONDOVI' BREO (Cuneo) - *Manera F.lli* - c.so Statuto, 49.
MONTECATINI T. (Pistoia) - *Arrigoni & Lorenzi* - v. Roma, 52 - t. 2543.
MONZA (Milano) - *Fumagalli Angelo* - v. Cortelonga, 1 - tel. 3282.
MORBEGNO (Sondrio) - *Stella Giulio* - v. Garibaldi, 8 - tel. 31.
NAPOLI - *De Luca Vittorio* - Riviera di Chiaia, 266 - tel. 62933.
NAPOLI - *Faraglia Fausto* - v. Arcoleo, 27 - tel. 62457.
NOCERA INF. (Salerno) - *Tortora Erminio* - p. Municipio, 3 - tel. 1314
NOVARA - *Mototecnica Porino* - Bal. Q. Sella, 34 - tel. 2745.
NOVI L. (Aless.) - *Zacco Rosalbo* - c.so R. Marengo, 9 - tel. 1146.
PADOVA - *Girardi & Marcato* - v. Mugnai, 15 - tel. 25569.
PADOVA - *Giuriatti Antonio* - v. S. Fermo, 13 - tel. 25365.
PALERMO - *Turano Angelo* - v. Rosolino Pilo, 10.
PALLANZA (Novara) - *Cicognani Ferdinando* - v. Manzoni,5 - tel. 8261.
PARMA - *Sacchetti F.lli* - Borgo della Posta, 9 - tel. 3433.
PAVIA - *Fumagalli Carlo* - c.so Garibaldi, 29 - tel. 2369.
PAVIA - *Silvani Samuele* - v. Porta Marica, 4 - tel. 3595.
PAVULLO NEL FRIGN. (Modena) - *Canepari Armando* - v. Giardini.
PERUGIA - *Nencini Torquato* - v. Baldo, 3 - tel. 4178.

PESARO - *Brusi Riccardo* - p.le Matteotti, 1 - tel. 403.
PESCARA - *Motogarage Marabelli* - v. Conte di Ruvo, 100 - tel. 222.
PIACENZA - *Cavanni Gino* - v. Borghetto, 7.
PIACENZA - *Sormani Livio* - v.le Risorgimento, 5 - tel. 3596.
PINEROLO (Torino) - *Iguera Giovanni* - v. Saluzzo, 6 - tel. 212.
PIOMBINO (Livorno) *Bilenchi Carlo* - v. Fucini, 11 - tel. 2048.
PISA - *Palla Torello* - p.za Toniolo, 2 - tel. 3419.
PISTOIA - *Arrigoni & Lorenzi* - c.so Gramsci, 14 - tel. 2697.
PORDENONE (Udine) - *Nadali Mario* - c.so Garibaldi, 59 - tel. 252.
POTENZA - *Pisati Luigi* - c.so Umberto I, 27-29 - tel. 1052.
RAGUSA - *F.lli Boncoraglio* - v. D. Alighieri, 94.
RAVENNA - *Bandini Terzo* - v. Maggiore, 1 - tel. 2685.
REGGIO C. - *Marzanò Carmelo* - c.so Garibaldi, 471 - tel. 1392.
REGGIO E. - *Valli Umberto* - v. Emilia S. Pietro, 63 - tel. 3243.
RHO (Milano) - *Alberti Raffaele* - v. Sempione, 36 - tel. 105.
RIETI - *Blasi Lionello* - v. Garibaldi, 298 - tel. 2274.
RIMINI - *Molari Silvio* - p.za Arco d'Augusto.
ROMA - *Faraglia Umberto* - v. Velletri, 16-22 - tel. 863184.
ROMA - *Perego Elvezia in Faraglia* - v. Bissolati, 3-9 - tel. 474400.
ROVERETO (Trento) - *Garage Royal* - c.so Bettini, 33 - tel. 1192.
ROVIGO - *Braiato Guido* - v. Umberto I, 52 - tel. 79.
SALA CONSILINA (Salerno) - *Alfisi Antonio & Rocco* - v. Nazionale
SALERNO - *Tortora Augusto* - c.so Garibaldi, 80.
SALUZZO (Cuneo) - *Parola Bruno* - v. Spielberg, 106 - tel. 388.
S. GIOV. VALDARNO (Arezzo) - *Ermini Lisandro* - c. Italia, 225 - t. 65.
SAN REMO (Imperia) - *Giordano Stefano* - c. Garibaldi, 11 - tel. 6891.
SAN REMO (Imperia) - *Randone Ernesto* - p.le C. Battisti, 8 - tel. 6892.
S. SEVERO (Foggia) - *Maggio Francesco* - v.le Stazione, 98.
SARONNO (Varese) - *Amodeo Giovanni* - v. Diaz, 2 - tel. 2411.
SASSARI - *Sechi Nino* - p.za Italia - tel. 2636.
SAVONA - *Sabatini Pietro* - v. Verzellino, 87 - tel. 21757.
SENIGALLIA (Ancona) - *Pupazzoni Orfeo* - p.za Simoncelli, 2 - t. 654.
SESTO S. GIOV. (Milano) - *Besana Giuseppe* - v.le Gramsci, 81.
SESTRI LEV. (Genova) - *Sola Agostino* - Pila, 103 - tel. 4274.
IENA - *Bernini Angelo* - v. di Città, 3 - tel. 20514.
RACUSA - *Scalora Orazio* - c.so Umberto, 120 - tel. 1357.
OMMA LOMB. (Varese) - *Magnoli Franc.* - v. Mazzini, 71 - tel. 3437.
NDRIO - *Sciaresa Silvio* - via C. Battisti, 1 - tel. 285.
ANTO - *Superbi Armando* - v. Cavour, 39 - tel. 2384.
AMO - *Ciarelli Mario* - v.le Bovio, 21 - tel. 2139.
MINI IMERESE (Palermo) - *Pastorello Calogero* - v. Stesicoro, 44.
TERNI - *Fontana F.lli* - v. Faustini - tel. 29128.
THIENE (Vicenza) - *Berton Rino* - v. Trieste, 33 - tel. 65.
TIRANO (Sondrio) - *Bombardieri Carlo* - p. Marinoni, 15.

TORINO - *Botto & Incisa* - v. Cernaia, 31 - tel. 40983.
TORINO - *Cravanzola Pietro* - Corso Francia, 87 - tel. 76479.
TORINO - *Gamba & Dolza* - v. Palestrina, 2 - tel. 22750.
TORINO - *Saletta Paolo* - c.so Vittorio Emanuele, 24 - tel. 80122.
TORTONA (Alessandria) - *Fossati Andrea* - c. Alessandria, 10 - t. 309.
TRAPANI - *Torrente Pietro* - v. B. Fardella, 83 - tel. 1695.
TRENTO - *Nocchi Biagio* - v. Brennero, 205 - tel. 3102.
TRENTO - *Petrich Emilio* - p.za Venezia, 1 - tel. 1759.
TREVISO - *O. Tenni di Bruna e Giuseppe Tenni* - p.za Filodrammatici, 2 - tel. 2667.
TREZZO D'A. (Milano) - *Brivio Giulio* - v. Indipendenza, 7.
TRIESTE - *Mototecnica Cremascoli* - v. F. Severo, 18 - tel. 8903.
UDINE - *Nadali Mario* - p.za I Maggio, 4 - tel. 2471.
VARESE - *Cortelezzi Paolo* - v. Magatti, 1 - tel. 1161.
VERCELLI - *Mototecnica Porino di Varese* Antonio - v. F. Borgogna, 1 - telefono 2515.
VERONA - *Scaravelli Renato* - vicolo S. Silvestro, 7 - tel. 2683.
VICENZA - *Berton Rino* - c.so S. Felice, 149 - tel. 2825.
VIGEVANO (Pavia) - *Novati Achille* - c.so Cavour, 29 - tel. 5231.
VITERBO - *V.A.G.O. Garage* - p.le della Rocca, 6.
VOGHERA (Pavia) - *Montagna Luigi* - v. A. Gramsci, 16 - tel. 545.

LIST OF FOREIGN AGENTS

ARGENTINA - *Randone & Hernandez* - Av. Callao 569-75-77 - Buenos Aires - tel. 35-7937/35-9761 - telegr. Cymot Baires.

ARGENTINA - *Sociedad Americana de Intercambio* - Cordoba, 969 - Buenos Aires - tel. 31-4359/31-6793 - telegr. S.A.I.-Baires.

AUSTRALIA (Stato del Sud) - *Sven Kallin Motors* - Gawler Place, 140 1 Adelaide.

AUSTRALIA (Stato del Queensland) - *Bob Todd* - The Local Cycle Works - 1 Victoria Place - Brisbane.

AUSTRIA - *Georg Gartner* - Lerchenfeldergürtel, 29 - Wien XVI - tel. B 31-607.

BRASILE - *Luiz Latorre* - Rua Gen. Ozorio, 680 - Sao Paulo - t.. 4-5

FRANCIA - *Anciens Etablissements Paul Maury* - 48 Rue [illegible] Bienfaisance - Paris (8-a) - Tel. Laborde 65-20 - telegr. C[illegible] Maury Paris.

INDIA - *The Shree Ram Trading Co.* - Kalbadevi Road, 195 - Bombay - telegr. Aryadesh-Bombay.

INGHILTERRA - *Bob Foster* - Ashley Road, 472 - Parkstone Dorset - tel. Parkstone 68.

OLANDA - *G. Joh Bruinsma* - Stadhouderskade 82-83 - Amsterdam - tel. 20020 (K 2900).

SPAGNA - *Motor Hispania* - Av. Gen.mo Franco, 437 - Barcelona - tel. 71338 - telegr. Mothispania/Barcelona.

SVEZIA - *Aktiebolag Fallai* - Birger Jarlsgatan, 38 - Stockholm - tel. 23-25 60 - telegr. Fallai Stocholm.

SVIZZERA - *Fapa di Bruno Santini* - Rue Etraz, 11 - Lausanne - tel. 21-0-78 - telegr. Fapa/Lausanne.

UNGHERIA - *Paul Banki* - Pozsonyi ut. 54 - Budapest - tel. 422-192.

VENEZUELA - *Angel Murzi & Cia.* - Cruz Verde a Velasquez, 75 - Caracas.

Chapter: *Removal and exchange of front wheel on page* 59 *is replaced by:*

Removal and exchange of front wheel

To exchange the front wheel for the spare wheel: unscrew the four spindle caps and draw off the wheel. Then unscrew the 4 wheel nuts to remove the wheel from the hub. Remove spare wheel and to fit, reverse the operations.

Chapter: *Removal and exchange of rear wheel on page* 61 *is replaced by:*

Removal and exchange of rear wheel

To exchange the rear wheel for the spare wheel: unscrew the 4 wheel nuts and pull off the wheel from the hub. Remove spare wheel and to fit, reverse the operations.