

ALL PRICES ARE OBSOLETE.

TELEGRAMS: "HOPIT, WOLVERHAMPTON."  
TELEPHONE: 894 (TWO LINES).

1914.

APPLICABLE ALSO  
TO  
1915-16 MODELS

# A.J.S. Motor Cycles

**IMPORTANT  
NOTICE!**



6 H.P. 3 SPEED A.J.S.  
MODEL D.

**SEE PAGE 29**  
HOW TO MANAGE THEM

(INCLUDING SPARE PARTS LIST).

Price 4d.

A. J. STEVENS & CO. (1914) Ltd.,  
Retreat Street, WOLVERHAMPTON,

ENGLAND.

ALL PREVIOUS LISTS CANCELLED.

## Gear Table.

### 6 h.p. MODEL D THREE SPEED

Number of Engine revolutions to one revolution of Back Wheel.

EXHAUST SPOCKET.	High Gear.	Second Gear.	Low Gear.
21 Teeth. For Solo Riding	12	7:50	13:58
19 " High Side-Car Gear	10:05	8:30	15:1
18 " Standard Gear	4:09	8:55	15:31

(This is the gear we earnestly recommend for all-round work.)

### 2 1/2 h.p. MODEL B THREE SPEED

High Gear.	Second Gear.	Low Gear.	
19 Teeth	4:36	6:01	12
18 " Standard Gear	5:23	7:47	12:61
17 " "	5:31	7:80	13:29

### 2 1/2 h.p. MODEL B TWO SPEED

High Gear.	Low Gear.	
19 Teeth	4:06	9:375
18 " Standard Gear	5:25	10:375
17 " "	5:5	11:16

## Perpetual Time-to-Light-Up Table.

### GREENWICH TIME

Day	Jan	Feb	Mar	April	May	June
5th	11:51	5:55	0:45	7:38	8:27	9:9
10th	11:54	6:4	0:45	7:46	8:35	9:13
15th	11:58	6:13	7:3	7:54	8:43	9:16
20th	12:0	6:42	7:11	8:1	8:50	9:18
25th	12:03	6:31	7:19	8:11	8:50	9:19
30th	12:06	6:23	7:28	8:19	8:51	9:19
5th	12:09	8:40	7:36	6:27	5:24	4:30
10th	12:12	8:31	7:25	6:16	5:10	4:19
15th	12:15	8:21	7:13	6:5	5:0	4:19
20th	12:18	8:11	7:2	5:53	5:2	4:30
25th	12:21	8:0	6:50	5:45	4:57	4:23
30th	12:24	7:49	6:39	5:35	4:53	4:37
5th	12:27	8:40	7:36	6:27	5:24	4:30
10th	12:30	8:31	7:25	6:16	5:10	4:19
15th	12:33	8:21	7:13	6:5	5:0	4:19
20th	12:36	8:11	7:2	5:53	5:2	4:30
25th	12:39	8:0	6:50	5:45	4:57	4:23
30th	12:42	7:49	6:39	5:35	4:53	4:37

AND.

## PRICES OF SPARE PARTS.

### IMPORTANT NOTE.

Owing to an extraordinary increase in the cost of raw materials and labour, we are compelled to advance the prices of Spare Parts by 10%.

When remitting for Spares or replacements, please add 10% to the prices given in our current Spare Parts List.

Should there be no increase in the cost of specialities of other manufactures such as Magnets, Saddles, Carburettors, Chains, Forks, Tyres, etc., the matter will be adjusted at this end, and any surplus money sent will be returned to our customer.

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1914.

# A. J. & S.

# Motor Cycles



# Driving Instructions, &C.

## For 6 h.p. Three-speed Model D A.J.S. Motor Cycle

**A**FTER receiving the machine, thoroughly examine it and get conversant with its details. Before taking it on the road, place the machine on the stand and fill up with petrol and oil.

The oil we recommend is either Vacuum Mobiloil B, or Price's A. Do not use unknown brands of oil.

Turn on the petrol tap by turning the tap lever downwards in line with the petrol pipe, and "flood" the carburettor by pressing the knob on top of float chamber. Turn on the oil tap by turning the oil tap lever at right angles to the oil pipe (this tap can be left in the "on" position while riding, and need only be turned off when the machine is left standing for a long period). This refers only to 1913 models. For particulars of 1911 lubrication see "Engine Lubrication" on Page 5.

Inject a small quantity of petrol into the cylinders through the compression taps by means of the injector pipes under the tank. It will greatly facilitate the entry of the petrol into the cylinders if the exhaust valve lifter is raised. See that the compression taps are closed again.

*Unless the engine is difficult to turn when cold with the kick-starter, it is seldom necessary to inject petrol into cylinders.*

Now mount the machine and carry out the following operations:—

1. See that the gear lever is in the "Neutral" position.
2. Nearly close the air lever (the shorter one) of carburettor control and open throttle lever (the longer one) about one-third. The levers open to the left and close to the right. "A.M.A.C." carburettor.
3. Lift the exhaust valve by means of the lever on right hand side of handle bar.
4. Engage the kick-starter with the right foot (using the instep of the boot) and press smartly backwards and downwards, at almost the same time release the valve lifter and the engine should then start. Take the foot off the kick-starter immediately the engine fires. Do not allow the kick-starter pedal to spring back with a "bang" when starting the engine. Bring the foot back with the pedal, and so prevent a heavy blow being given to the stop. After once mastering these details the engine can be started with the back wheel on the ground.

Now dismount, fix up stand, wheel machine into the road and start up engine as before. Then take out the clutch by means of the clutch lever on the left hand side of bar, place the gear lever in low position, speed up the engine by opening the throttle a little and gently release the clutch. The machine will then move forward on the low gear. When there is sufficient "way" on the machine, again release the clutch and move the gear lever into the second gear position, immediately re-engaging the clutch.

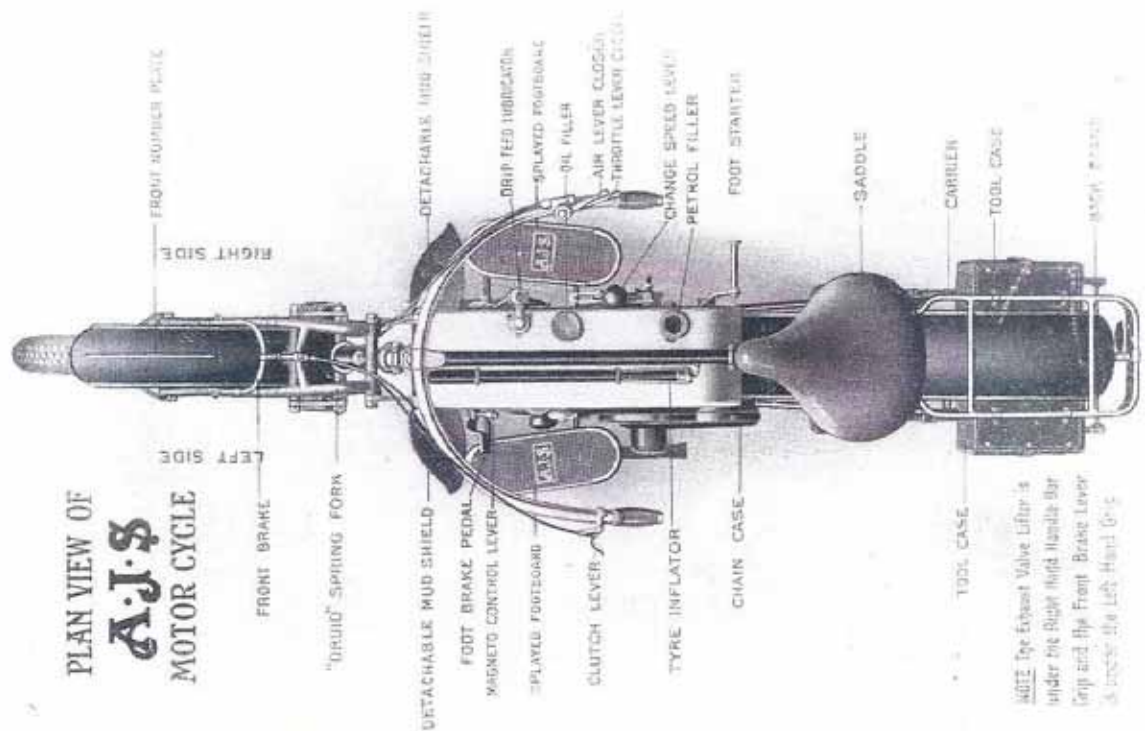
Repeat this operation to engage the high gear. When running on high gear the machine must be controlled by means of the throttle lever and brakes. To stop close the throttle, and when the machine is almost at a standstill, take out the clutch, and apply the footbrake.

The change speed lever is operated as follows:—To engage the low gear from neutral, press the lever lightly to the right and pull backwards (see "important warning" below). To move to second gear, again press lightly to the right and move the lever into second gear position. To engage high gear from second, press the lever to the left and move it forward into high position. How to operate the gear lever will be obvious if a careful examination is made of its construction. The gear lever has a positive stop for each gear; whether changing up or down, and is automatically locked in each position when released by the hand.

**Important Warning**—If the change speed lever does not move quite easily into position, do not attempt to force it. Move the machine slightly backward or forward, or turn the back wheel, while keeping a little pressure on the lever. This will bring the "dog clutches" in the gear box into proper position for engagement, and the gears will engage without using unnecessary force. Under no circumstances must this lever be forced into position, or damage will be done.

This warning only applies when the machine is stationary, not when being ridden.

## PLAN VIEW OF A.J.S. MOTOR CYCLE



Always drive with the air lever open as far as possible consistent with the engine firing properly. It is not necessary to stop the engine when the machine is brought to a standstill, but can be left quietly running until one starts away again. This, of course, only applies to short stops, as when obstructed by traffic.

When starting again always engage the low gear.

Although it is not absolutely necessary to do so, it will be found a much nicer method of changing gear if the throttle is closed somewhat before doing so. After the gear changing, and immediately the clutch is engaged, gently open the throttle, and so take up the higher gear sweetly and comfortably without any signs of jerk. Always disengage the clutch when changing gear. This makes gear changing easier for the reason it takes off driving strain, and allows the gears to pass in and out of the engagement much more easily.

Always change gear quickly and firmly, but without using unnecessary force. When climbing a steep hill which necessitates changing down to a lower gear, always change while the machine has reasonable "way" on it. Do not let the machine come almost to a standstill before changing.

If the machine won't climb a hill on top gear, don't force it to do so by slipping the Clutch but change to a lower gear. If the clutch is allowed to slip for a lengthy period under such a heavy driving load it will—owing to the intense heat generated by friction—burn out the cork insets, in fact would destroy, by heat, any material of which a clutch may be composed. There is really no excuse for the rider who destroys his clutch by this practice. It is not only bad driving, but is trying to make the Clutch do the work of the gear box which is utterly impossible.

Do not run the machine unnecessarily on low gear. This gear is only provided for ease of starting, and climbing exceptionally steep hills, or when negotiating thick traffic. Using the low gear unnecessarily, simply means extra wear and tear, high petrol consumption, and shortens the life of the engine, and transmission.

When climbing an exceptionally steep hill it is sometimes an advantage to slightly retard the spark, but under normal conditions the spark lever should be kept in the advanced position. If the engine has any tendency to kick back when starting it with the foot starter, slightly retard the ignition. The lever is moved forward to retard and backward to advance.

When running at very low speeds on top gear a slight harshness in the drive may be felt, common with all petrol driven vehicles, however well balanced an engine may be, but the drive can be made just as sweet and as comfortable as one may wish, by easing the clutch a little, by means of the clutch lever on the handle bar. A slight pressure of the hand on this lever allows the clutch to slip slightly under the impulses of the engine, and so the clutch is instantly converted into a perfect shock absorber at the will of the rider. The foregoing hints also refer to "kicking up" again after slowing down again for a corner, or any other occasion when the machine is to be accelerated suddenly from a slow to a higher speed. It must be quite understood however, that the clutch is not disengaged so much that it slips to the extent that the engine can "race." Only just so much pressure on the lever to allow the clutch to absorb the impulses of the engine. We earnestly commend this paragraph to those riders who are anxious to get the best results and long life from the engine, gears, and chains, to say nothing of the added comfort and satisfaction.

Do not control the speed of the machine with the free engine clutch, excepting in very congested traffic. Always drive "on the throttle." The object of the Clutch is not to control the speed, the throttle and brakes should be used for this purpose.

After a short run it will be found that the control of the machine is quite simple, and the disposition of the levers, operating the footbrake, and the clutch, give the rider absolute mastery over his mount. On low gear the machine can be driven at a perfect crawl, and on high gear it is capable of attaining a speed considerably over double that allowed by the Law.

When the machine is used gently as a solo mount, the gear ratio can be heightened by fitting a larger sprocket on the sleeve of engine shaft (see spare parts list at end of this booklet).

## Care of the Machine. Engine.



A.J.S. 6 h.p. Engine.  
ILLUSTRATION B.

**Lubrication.**—The most important point in connection with the engine is lubrication. Little and often is the golden rule. Give about half a pumpful every 7 miles, and a little more if fast riding is indulged in.

The above only applies to the 1913 models fitted with the ordinary hand pump. In the case of the 1914 model fitted with the semi-automatic drop feed lubricator carry out the following instructions. Regulate the needle valve to give from 20 to 25 drops per minute for ordinary work, a little more when in a very hilly district or fast driving. Remember that thick oil will drip slower than thin oil so test the drops when fresh oil is used. The plunger is spring operated, so it is only necessary to press down the plunger, the spring inside the barrel of the pump will return it automatically and so feed oil to the engine according to the regulation of the needle valve. Remember that oil ceases to flow after the plunger has reached the top of its stroke. When not using the lubricator can be put out of action by pressing down the plunger and holding it in this position by means of the small catch provided. If the machine is to be left for long periods it is well to screw down the needle valve, first making a note of its original correct setting for the proper drip. If oil should accumulate in the glass barrel it is because there is an air leak, most probably via the packing gland but of the needle valve. Screw down this nut to obviate this. Always keep this nut screwed down sufficiently to grip the needle valve fairly tight or vibration may slowly unscrew the valve till it falls out. This would be serious if it happened in the dark and unnoticed. All oil would then be pumped "into the world" instead of into the engine. Any accumulation of oil in the glass barrel can be removed by taking out the needle valve entirely and waiting until the oil flows into the engine by gravity.

The chief feature of this type of lubricator is that it will automatically feed the engine with a pre-determined quantity of oil in a certain time, but it requires a little more attention than the ordinary type of hand pump. In case of doubt therefore the novice is advised to first use the lubricator as an ordinary pump by pressing down the plunger and setting the needle valve to allow the pump to empty itself about every five miles.

Riders and riding conditions vary, so it is absolutely necessary to leave the question of lubrication to each individual's judgment to a certain extent.

The engine working harshly, and a falling off of power, are the usual symptoms of under lubrication. Over lubrication is shown by oil unduly working out of the valve tappets, and smoke issuing from the silencer. Over oiling will sometimes cause the exhaust valves to stick or move sluggishly in their guides. The symptoms are mostly apparent when the engine is cold. Misfiring occurs, also explosions in silencer and difficulty of starting. The remedy is to take out the valves and clean the stems and guides with petrol.

**Adjustments and Cleaning**—See that the valve tappets are always properly adjusted. The thickness of a visiting card is about the correct clearance between the tappet and valve stem when the valve is on its seat. Use two spanners to unlock the adjusting nuts. The inlet valve tappet of front cylinder is free to revolve. This can be held stationary by inserting a small conical bar in the hole drilled in the tappet stem, after the lock nut has been slackened off.

### Engine—continued.

Grind in the valves about every 1,500 miles, with flow enemy, taking care that all emery is cleared out of valve chamber after the operation. Empty the oil out of crank chamber every 500 miles, and do not forget to pump in a fresh supply before again starting engine. Clean the cylinders and piston tops free of carbon deposit about every 1,500 miles.

Before replacing the cylinders after cleaning, carefully oil the pistons, and see that the joints of piston rings are on opposite sides of the piston.

When the cylinders are in position, fit the inlet pipe before bolting them down firmly. This will enable the cylinders to twist into proper position to make perfect joints at each end of inlet pipe. This is a very important point.

The exhaust pipes can be fitted after the cylinders are bolted down permanently. If one cylinder only is to be taken off it is only necessary to disconnect its exhaust pipe and one side only of inlet pipe. Examine periodically the bolts which hold the engine in frame, and tighten up any nuts that may have come loose. Keep the engine clean. This can be done quickly and easily by means of a painter's brush and a pan of paraffin or staid petrol.

Examine the driving chain of magneto periodically, and, if slack, tighten it by moving the magneto forward. Slacken off the two nuts on contact breaker side of magneto platform allows this. See that the nuts are screwed up again after the chain is adjusted. Examine also the nuts securing the magneto sprockets. These must be kept tight. After examination, oil the chain.

With the exception of carrying out the above instructions, do not tinker with the engine, nor fancy you can do better than the makers by tampering with the valve-timing gear.

## Gear Box.

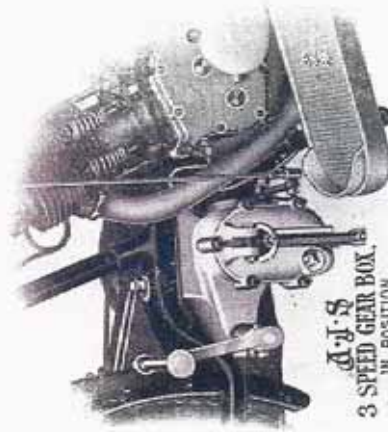


ILLUSTRATION D.

washer deft hand thread) on the end of main shaft (right hand side of box). Take out all the bolts round the cover of the box and pull the cover off. The layshaft,

### Gear Box—continued.

1. Lever for disengaging Clutch.
2. Oil Filler.
3. Lay Shaft or Secondary Shaft.
4. Fixed Clutch Plate.
5. Main, or Primary Shaft.
6. Sprocket for transmitting power to Road Wheel.
7. High Gear Dog Wheel.
8. Sliding Sleeve.
9. Low Gear Dog Wheel.
10. Pin for taking up slack in Clutch Cable.

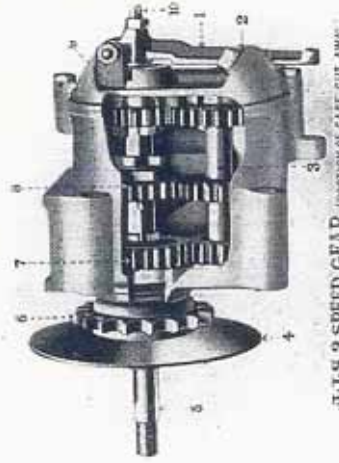


ILLUSTRATION E.

low gear dog wheel, and the sliding sleeve, can then be drawn out. The main shaft also can be drawn out from the opposite side of the box, complete with the clutch. To reassemble simply reverse these operations. It is only a few minutes work to carry out these instructions.

*Do not forget to put fresh oil in the box after dismantling.*

## Clutch.

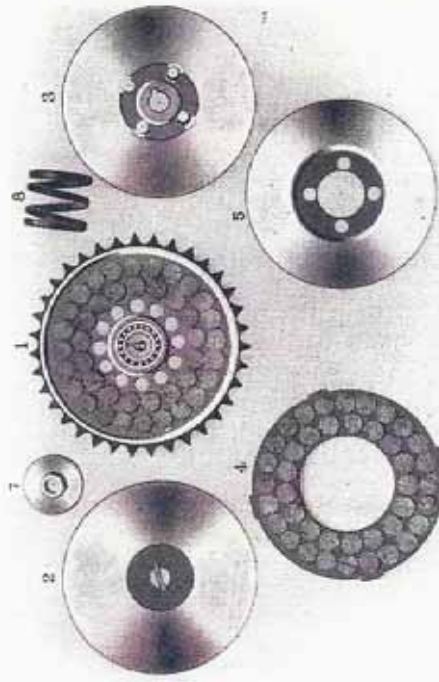


ILLUSTRATION G.

1. Clutch Sprocket fitted with Cork Inserts.
2. Sliding Plate (note key in centre which passes through main Gear Box Shaft).
3. Fixed Plate.
4. Plate fitted with cork inserts (driven by No. 1).
5. Dishd Plate (driven by No. 2).
6. Ball Bearing on which No. 1 revolves when clutch is disengaged.
7. Adjusting nut.
8. Clutch Spring.

The Clutch parts are assembled in the following order—No. 3, 4, 5, 1, 2, 8 and 7.

**Lubrication**—The gear box needs no attention whatever with the exception of replenishing with oil every 500 to 800 miles. Oil as used for the engine is suitable, but a very thick oil is the most suitable. It will facilitate the entry of oil into the box if the back wheel is slowly revolved (with gear in neutral position) while slowly pouring in the oil.

If you are determined "to see the works" the following procedure must be carried out to dismantle the box:—

First disconnect the Bowden wire from the clutch lever (No. 1, Illustration E) which hangs down the front of box and take out the small pin in the link which connects to Bowden cable. Swing the lever upwards, remove the dust-cap (if fitted) and then, by means of the pinch provided in the tool kit (using the large spanner as a hammer) unscrew the thrust

Clutch—continued.

**Adjustment.**—This filament also requires very little attention.

If the clutch should slip when climbing steep hills, tighten up the spring a little by means of the nut provided on end of clutch shaft. Do not tighten up the spring more than necessary to obtain a perfect grip, or unnecessary strain will be put upon the Bowden control, &c., when the clutch is disengaged.

*Do not put Oil into the Clutch under any circumstances.*

To dismantle the clutch, take off the front of chain case by slackening off the pins round the edge of same (the cover can then be drawn off) see Illustration II.

Insert the spring adjusting nut No. 7 (Illustration G) and remove the spring No. 8. Take out the cotter pin of kick-starter crank and draw out the quadrant until it can pass the stop on chain stay. The quadrant can then be swung clear of the clutch and allow the plates to be drawn off the clutch shaft. Before replacing, wipe the clutch plates clean, and smear a thin film of oil on the portion of shaft on which the front clutch plate slides. Also before replacing, examine the nut which holds the fixed plate in position. If loose see that it is carefully tightened up again.

It is, of course, necessary to take the chain off the clutch sprocket before this can be removed (see Illustration L for particulars of chain joint). A flat key passes through the slot of shaft, and fits in the boss of front clutch plate. Great care must be taken to see that this key is in its proper position or the clutch cannot be disengaged. This key is clearly shown on Figure 4 (Illustration G). To fit this key when re-assembling the clutch, turn the shaft till the slot is perfectly horizontal. Then put key in slot with each end projecting equally on each side of shaft. The sliding plate should then be slipped on shaft with its keyway in a corresponding horizontal position.

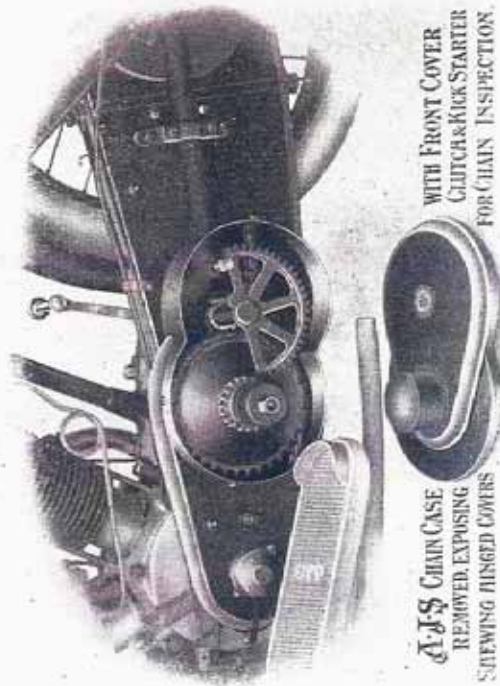


ILLUSTRATION II.

To take up backlash in Bowden lever on handle bar adjust by means of the pin and lock-nut No. 10 (Illustration E). A further adjustment is provided at bottom of box. *Always allow a little backlash in the lever, or the clutch spring cannot exert all its pressure on the plates.* If the clutch slips without any external reason, take it apart and ascertain if any portion of its mechanism is fouling

Clutch—continued.

another, and so keeping the plates apart. If the key in boss of clutch plate No. 2 (Illustration G) should foul the end of slot in shaft it would prevent the clutch engaging.

If to disengage the clutch, becomes difficult smear a little oil on that portion of shaft on which the front plate slides. After long usage the clutch may become difficult to disengage owing to the inner cable of Bowden wire getting dry. This can be remedied by taking off the special link which connects the Bowden wire to the gear-box clutch lever. The inner cable can then be drawn out completely, cleaned, oiled, and replaced.

If the clutch should "drag," even when fully disengaged, it will make gear changing very difficult, especially when changing down, for the reason that the drive is never properly taken off the gears, thus making it difficult to move the gear lever. This difficulty can be temporarily overcome by suddenly closing the throttle before changing down, immediately opening the throttle again after the change is made. The closing of the throttle takes the drive off the gears, and so allows easy disengagement. The cause of "drag" is usually that plate No. 5 (Illustration G) has too much lateral movement, and "follows up" the plates in front of it, when the clutch is disengaged. If the clutch plates Nos. 1 and 2 are removed, it will be found that plate No. 5 is driven by four pegs on the fixed plate No. 3. On two of the pegs, between the two plates, are small springs, whose function is to separate the plates when the clutch is disengaged. The driving pegs are fitted with screws which act as stops, and determine the lateral movement of plate No. 5. If these screws should be loose the plate would have too much lateral movement and cause "drag," but if found tight, the only remedy is to remove them and file away slightly the top of the driving pegs until the plates separate only just enough to free the cork inset plate No. 4. This may appear to be somewhat complicated, but it will be found quite simple on examining the parts mentioned. It is, however, a very rare thing for the clutch to "drag," and can only happen by excessive clutch wear. If it should happen on a new machine it is the fault of the maker, and comes under the guarantee.

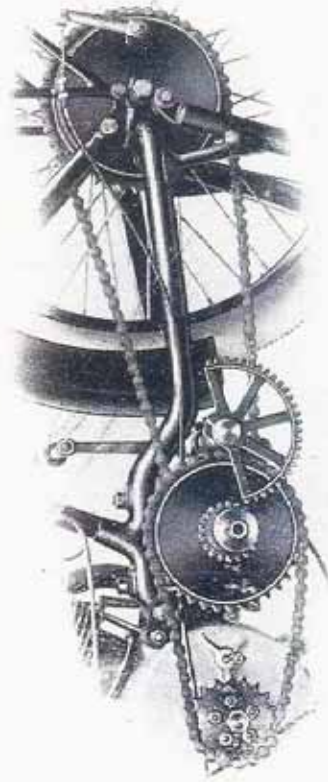
To those riders who prefer a light adjustment of the clutch, the following hint will be useful. A clutch that is lightly adjusted will sometimes slip for a time after changing gear, but the slip will cease if the throttle is momentarily closed when the slip takes place. This is explained by the fact that for a moment the drive is taken off the clutch and allows the plates to settle down to their work.

## Transmission.

**Adjustment of Chains.**—To adjust the chain from engine to gear box it is only necessary to slack off the two nuts on top of bracket and slide the box bodily backward by pressing on the back driving chain.

*It is important that the nuts are screwed tightly again after adjustment.*

**Back Chain.**—Slack off the nuts on each side of back hub spindle, and move the wheel backward by means of the adjusting screws in fork-ends. Care must be taken to adjust each side equally or the wheel will be out of alignment.



A. J. S. TRANSMISSION.

ILLUSTRATION 3.



**Slow Running**—Either a too rich or too poor mixture will cause misfiring at slow speeds. If the mixture is too rich, black smoke will issue from the carburettor. If too poor "popping back" will take place in the carburettor.

The following will prevent slow running:

Too large a jet or carburettor flooding. Unequal wear of inlet valve guides. Bad petrol supply. Dirt or water in petrol. Low level of petrol in float chamber caused by the machine leaning in the case of an incorrectly fitted side car. Weak exhaust valve springs. Faulty plugs, or points of high too far apart. Slight leakage of high tension current to frame via high tension cable. Weak magnets. Dirty and badly worn contact breaker points, or too great a gap between the points when broken. If the engine refuses to run slowly, always first check the petrol in float chamber. Try lowering the level by lowering the sleeve of needle valve, under which the spill outlet fits. The needle valve must be removed to do this. If this makes matters worse, raise the petrol level by reversing the process.

**Setting and Driving**—The jet should not be so large that the engine will take full air with the throttle full open. The air slide acts as a variable choke tube, and the air passage (when both slides are full open) is greater than the inlet pipe.

The air lever should open from 23 in. to 31 in. when going full on. If more the jet is too large, if less the jet is too small.

For racing or hill-climbing competitions, the jet should be large enough to take full air when the throttle is full open, but of course the petrol consumption will be high.

It will be found that for all ordinary variations in speed it is not necessary to alter the position of the air lever, owing to the throttle also acting as a variable choke tube to a certain extent. On a steep hill the air lever should be closed somewhat, and also for very slow running, although it will be found that the machine will run with the throttle nearly closed and the air full open owing to the supplementary action of the slides. This is not an indication that the jet is too large or that not enough air can be given, but is a natural consequence of its semi-automatic action. When the carburettor is properly set the air lever should have three positions:—

For high speeds and hard driving—**H.A.I.F. CLOSED.**

Slow Speeds in traffic—**N.E.A.R.L.Y. CLOSED.**

Ordinary Speeds—**FULL OPEN.**

**Easy Starting**—To start the engine easily do not open the throttle more than half way. The following can prevent easy starting:—

Badly worn inlet valve guides. Petrol pipe stopped up with dirt, &c. Air back in petrol pipe or tank. Mixture too poor owing to too small a jet. Throttle too far open. Carburettor not vertical. Faulty ignition (see "Slow Running").

If the engine is very difficult to turn round when cold, inject petrol through compression taps.

**Adjustment of Slides**—Put the control levers in closed position, then screw the adjusters in or out until all slack is just taken up. When doing this, hold the cable to prevent it twisting with the adjuster. All sharp bends must be avoided or the inner cable will work stiffly.

*It is extremely important that the inlet pipe joints be absolutely air-tight to get satisfactory slow running.*

**Magneto.**

The magneto requires no lubrication. The special ball bearings are so constructed that they retain the lubricant, inserted by the makers, for at least 1,000 miles. After that mileage the magneto armature should be taken out by a competent man; thoroughly re-lubed, and vaseline put in the bearings.

**Adjustment**—The platinum contacts should be examined after about 1,000 miles, and if the break should be more than the thickness of a visiting card they should be adjusted as follows:

Take off the contact breaker by unscrewing the central pin, and pull the contact breaker off. A notched ring will be found at the back of the contact breaker. Turning this ring round clockwise looking at back of contact breaker increases the gap between the points, and decreases the gap if turned anti-clockwise.

These instructions apply only to the open type magnetos fitted to the earlier 1913 models.

On the enclosed type magnetos the contacts are adjusted by means of the central pin. Slightly screwing up this pin increases the break, and unscrewing it decreases the break. By taking the screw out altogether, the contact breaker can be removed bodily from the magneto. If the contact breaker is removed, great care should be taken to screw up the central pin until the correct break is obtained.

**Note**—The platinum points are only broken when the fibre hammer has passed on to the metal segments or cams, and close again only when the fibre hammer is between the segments. The contact breaker cover is removed by simply pulling off and replaced by pushing on.

**Timing**—If the magneto should be removed from the machine it will be necessary to see that it is timed correctly after it is refitted. An arrow will be found on the sprocket on half line shaft of engine, also on the magneto sprocket. Turn the engine round until the arrow on engine sprocket is pointing to the magneto (mounted with the magneto chain cover). Fit the chain on **both** sprockets before the magneto sprocket is fitted to the sleeve; taking care that the arrow on sleeve is pointing directly to the engine sprocket. Then turn the magneto spindle round until the sprocket will fit correctly on to the dowel pin in sleeve of spindle. The magneto sprocket should now be firmly bolted up by means of the sleeve nut.

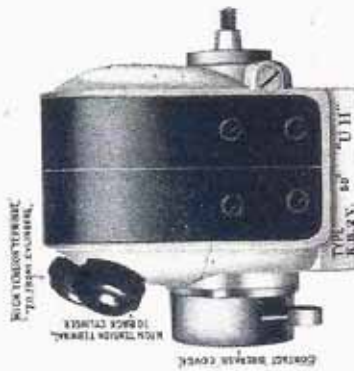
It will prevent misfiring, and make starting easier, if the slip ring is cleaned occasionally. This is done by taking out a high tension terminal and while the magneto is being revolved by turning the engine round, insert a lead pencil the end of which is covered with clean rag moistened with petrol. The pencil should be pressed on the revolving slip ring. This applies only to the open type.

On the enclosed type the slip ring is exposed by removing the front cover on which the high tension terminals are fitted.

Beyond the little attention mentioned above, do not tamper with the magneto. It is one of the most reliable parts of a motor cycle, but unnecessary damage can be easily done by an inexperienced person.

Both the open and enclosed type magnetos are absolutely water-proof, so no trouble need be feared through water entering, as is so often the case with some of the so called water-proof magnetos.

If serious trouble should be experienced with the magneto or if an overhaul is required, it should be sent to the makers' London depot, Messrs. S. Wolf & Co., Ltd., 115, Southwark Street, London, E.C.



**MAGNETO FOR 6 HP. MODEL**



*Carburettor—continued.*

**Flooding**—This can be caused by any of the following reasons:

Dirt on needle valve seating. Grains in filter preventing proper working of needle valve. Bent needle valve. Split pin not being fixed under collar on needle valve. Punctured float. Carburettor not vertical. Needle valve too long and fouling the underside of float-entr.

In most cases flooding is caused (especially on new machines) by dirt on the needle valve seating. This can be cured by twisting needle valve with the fingers while pulling upwards.

Do not leave the machine standing for long periods without turning off the petrol.

**Petrol Consumption**—To get the best results study carefully the hints given under the heading "Setting and Driving."

Other causes of heavy petrol consumption not due to carburation are:—

Allowing the engine to run for long periods when the machine is standing. Unnecessarily using the free engine clutch, and driving on the low gears without a cause. Driving with ignition retarded. Inlet valve springs too weak causing blow back. Air gauze stopped up with dust or mud (this will cause misfiring). Lift of exhaust valve too small. Choked silencer. Side ear out of line with the cycle.

**Important Note**—After a new machine has been run about 200 or 300 miles, and the engine thoroughly "run in," a smaller jet can usually be fitted to advantage, especially regarding petrol consumption.

Try a No. 28, 27, or even No. 26 jet before being satisfied that best results are being obtained, consistent with satisfactory running.

## Wheels.

**Back Wheel**—To take out the back wheel is a very simple operation indeed. Remove the back portion of chain case (see "Chain Case"), slack off spindle nuts and detach brake cable by removing the pin in shackle. Take the chain off the sprocket by means of the spring link, and unscrew the anchor pin which projects into slot of brake plate, sufficient to clear. The wheel will then fall out of slots in fork-ends.

Care should be taken to prevent the ends of chain falling back into chain case while removing the wheel. The upper portion of chain should be folded back over the top of chain case and hooked on to the pin provided. The lower portion of chain will hang down below the bottom half of case.

It is impossible to upset the adjustment of either chain, hub, or brake by removing the wheel. When replacing the chain it will facilitate the fitting of spring link if the ends of the chain are encircling an equal portion of the sprocket. This also applies to removing the spring link.

When the wheel is replaced, see that the brake anchor pin is screwed into the slot in brake plate and the spindle nuts are tight.

**Front Wheel**—To remove the front wheel, slacken the nuts of brake blocks and swing them clear of the rim. Slack off the spindle nuts and the wheel will fall out of slots in fork ends.

The adjustment of the hub bearings is perfectly obvious and needs no explanation here. Both wheels of the 1933 model have disc-adjusting hubs. The 1934 back wheel is disc-adjusting, the front one cone-adjusting. Don't let the hubs run loosely, but take great care that they are not adjusted too tightly. This is a common cause of broken balls and cracked ball races. When properly adjusted, the weight of tyre valve should revolve the wheel, if placed above the centre of wheel. At the same time the wheel would have no shake.

## Detachable Wheels.

**Back Wheel**—To remove the back wheel proceed as follows:—Put the machine on the stand and *first* unscrew the three sleeve nuts which pass through the hub flange, with the box spanner provided (to prevent the wheel revolving while unscrewing the sleeve nuts, press the foot against the tyre at bottom of wheel). *Then* unscrew the central pin and draw it completely out. The space now left by the distance piece will allow the wheel to be drawn off the driving pins in sprocket. The whole operation should not take more than 30 to 40 seconds.

To replace the wheel, push it squarely on to the driving pins and *second* (with the distance piece in position) screw up the central pin moderately tight. The three-sleeve nuts can now be screwed up *lightly*, afterwards giving a final turn to the central pin. It is very important to point out that when the central pin is removed, the wheel is hanging on one fork end only, so any rough treatment must be carefully avoided or there is great danger of straining or breaking the fork end. Under no circumstances must the central pin be removed until the machine is jacked up on the stand, and the central pin must always be in position before the machine is taken off the stand. If for any reason the wheel should be difficult to pull off the driving pins, screw in the central pin a few turns (without the distance piece), this will steady the wheel while drawing it off the driving pins.

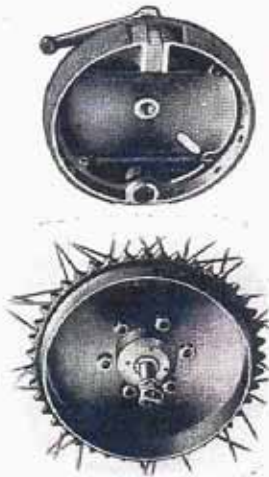
If the rider wishes to fit a new tube without removing the wheel he must first take off one side of the tyre and remove the tube. The central pin is then taken out and the space made by the distance piece will allow the old tube to be taken away and replaced by a new one. Now replace the distance piece and the central pin and proceed to fit tube and cover in the usual way. Fitting the central pin first, holds the wheel firmly while the tyre is being manipulated. Periodically test the central pin and sleeve nuts with the spanner, and keep them tight. When the back wheel is removed, the wheel only is taken out, the chain, sprocket, brake, chain case, etc., remain in their original position. If desired the wheel complete with sprocket, brake, etc., can be taken out by following the directions given for fixed wheel.

### Detachable Wheels—continued.

**Front Wheel**—To detach the front wheel first, jack it up on the front stand. Slack off the nuts of brake blocks, swing them clear of the rim, take out the central pin and there you are! Reverse these operations to replace. In the case of detachable wheels both wheels are alike and the hubs are disadjusting.

Periodically test the central pin with the spanner, and keep it tight. The wheel is fitted with a dustcap on the driving flange. This must be pulled off if it is desired to use the front wheel for a driving wheel, and refitted to the wheel which is to replace it. When fitting a spare driving wheel, see that the face of driving flange is quite clean.

### Back Brake.



This brake requires no attention with the exception of occasional adjustment by means of the adjustable stop fitted to the stay of carrier.

### INTERNAL EXPANDING BRAKE

ILLUSTRATION M.

### General.

Remember you have a bicycle as well as a power plant. Frequently oil the links of spring fork. Periodically put oil in the hubs or fill with vaseline. Oil occasionally any little moving parts about the machine, such as brake shackles, Bowden levers, joints of control rods, change speed lever, gear box clutch lever, etc. An oil gun is provided with each machine and is a most useful accessory. A charge of oil can be drawn out of the oil tank and used for lubricating every part of the machine. If a side-car is fitted, don't forget to lubricate the spring shackles, etc., if squeaks are to be avoided. If the leaves of the springs creak or squeak, separate them by inserting the end of a screwdriver, and force oil between with the oil gun.

Keep the machine clean. If mud, etc., is allowed to accumulate, it will work into bearings, especially the hubs, and cause undue wear. Do not wash the machine down with a hose-pipe. By so doing it is easy to get water in the petrol tank or carburetter, and cause trouble. Remove mud by means of a sponge and a bucket of water.

Pack tools lightly in the tool case with cleaning cloths, and so prevent them rattling about. Treat spare parts the same, or better still, every tool and spare parts in the locker of side-car where they will not be subjected to such punishment as when packed in the pannier bags on carrier. The pannier bags can be used for carrying spare tubes if they are carefully and tightly packed, but it means certain destruction if they are not.

It is a good idea to keep an adjustable spanner, screwdriver and the oil gun under the cushion of seat. They are then so quickly available if required.

Keep the back tyre fully inflated, but not board hard, and see that security bolts are tight. It is not necessary to have the front tyre inflated as hard as the back.

If the machine is used at all as a solo mount, do not fit all-steel studded tyres. They are positively dangerous on granite sets or tramlines, especially if wet.

### General—continued.

It is not necessary to carry a load of spare parts with the machine. The only parts that may be required under ordinary conditions are:—

One spare valve complete with spring, washer and cotter, a good substituted tyre repair outfit, one each spring link and half link for chains, two good sparking plugs, an inside plaster for tyre in case of a bad cut or burst, and a good supply of observant common-sense.

For very long journeys or an extended tour it is wise to carry in addition to the above a spare front chain complete with spring link, and a spare cover and tube in case of serious tyre trouble. If a spare detachable wheel is not carried.

The 6 h.p. A.J.S. is designed to carry two persons, and luggage, anywhere, and do it easily, but if you have a break hill in your district, do not try to climb it with all your friends heaped up in the side car and on the carrier. It is not fair to the machine, your pocket, or the markets.

Any further information required we shall only be too happy to give if communicated with direct, but it will save unnecessary correspondence if our patrons will ascertain first, that the information is not already given in this booklet or our Motor Cycle Catalogue.

## Driving Instructions, &c.

### For the 2½ h.p. Two and Three Speed Model B.

It will save much useless repetition if it is understood that practically all the instructions for the 6 h.p. machine apply to the 2½ h.p. Model owing to their being so similarly constructed.

The only difference is that one has one cylinder instead of two, and two speeds instead of three. If a three-speed Model B the driving instructions are exactly the same as the 6 h.p. Model D.

**Driving**—Carry out all the instructions given for the 6 h.p. model with the exception of the special warning regarding the change speed lever. On the 2½ h.p. models the lever can be put into either low or high position irrespective of the position of the dogs in the gear box owing to the patent spring lever on gear box.

**Engine**—Carry out all instructions given for 6 h.p. model.

### Gear Box.

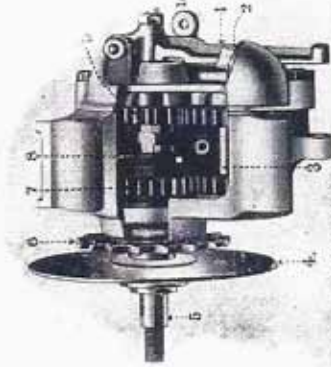


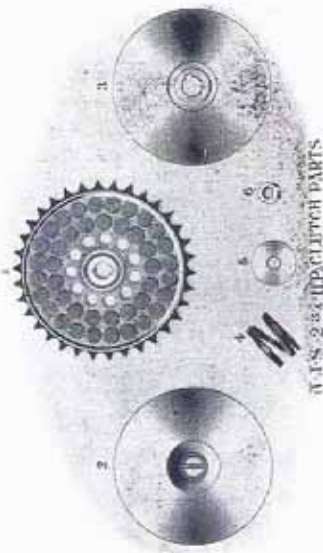
ILLUSTRATION P.

1. Lever for disengaging clutch.
2. Oil filler.
3. Lay shaft or secondary shaft.
4. Fixed clutch plate.
5. Main or Primary Shaft.
6. Sprocket transmitting power to road wheel.
7. High gear dog wheel.
8. Sliding sleeve.
9. Low gear dog wheel.
10. Pin for taking up slack in clutch cable.

The two and three speed gear boxes contain exactly the same number of parts and as their construction is as the 6 h.p. the same instructions apply.

## Clutch.

1. Clutch sprocket fitted with cork insets.
  2. Sliding plate (note key in centre which passes through slot in main gear box shaft).
  3. Fixed plate.
  4. Spring.
  5. Washer for spring.
  6. Adjustable nut.
- The Clutch parts are assembled in the following order: Nos. 3, 1, 2, 4, 5 and 6.



U.S. 242 APPROVED PARTS

ILLUSTRATION B.

The principle of the 2 $\frac{1}{2}$  h.p. clutch is exactly as the 6 h.p. but fewer parts are employed in its construction. The 6 h.p. clutch has five plates, giving extra gripping surface, but three plates only are used in the 2 $\frac{1}{2}$  h.p. clutch (see illustration B).

All 6 h.p. instructions apply.

A further clutch is fitted to the **Engine Shaft** which acts as a "Slipping Clutch" to take up any harshness in the drive at slow speeds. The engine sprocket is gripped between two plates by means of a spring adjusted by a nut on end of shaft. If too much slip is experienced when climbing hills, screw up the adjusting nut until the correct grip is obtained. If the clutch should become excessively oily it must be taken apart and cleaned in few moments work. It is important that this clutch is not allowed to slip unduly or the friction washers will be burnt out.

**Transmission Care of Chains Chain Repairs Chain Case** } Exactly as 6 h.p. Model.

**Magneto**—All the instructions given for the 6 h.p. Magneto apply to the 2 $\frac{1}{2}$  h.p. model with the exception that only one high tension terminal is fitted instead of two.

**Carburettor**—All 6 h.p. instructions apply.

**Wheels**—To remove the back wheel carry out all instructions given for the 6 h.p. model with the exception of the brake. The brake shoe which operates on the brake rim must be removed before the wheel can be taken out. This is only a few seconds work and is too obviously simple to need detail instructions.

To remove the front wheel carry out all instructions given for 6 h.p. model.

**Note**—The foot-brake on the 2 $\frac{1}{2}$  h.p. model is on the right hand side of machine and is operated by the heel.

**General**—All the hints given under this heading for 6 h.p. model apply to the 2 $\frac{1}{2}$  h.p. model excepting those remarks regarding side cars.

## Side Car Hints

It is highly important that the side car be in perfect alignment with the cycle or all-round satisfaction cannot be obtained.

The side car wheel should be dead parallel with the wheel of cycle and also perfectly vertical. The cycle also should be quite upright, and not leaning either outward or inward. Two straight pieces of wood, about 7 or 8 feet long should be used to test the alignment. One piece should be placed alongside both wheels of cycle, and the other against the side car wheel, and when measured across each end the distance should be equal.

If the alignment is correct, but the machine has a tendency to steer to the left, the cycle should be adjusted to lean a little to the right. If the steering tends to the right, slightly lean the machine to the left (towards the side car).

Always drive the machine sitting in an upright position, and do not fall into the unsightly habit of leaning the body permanently towards the side car. It is not only unnecessary but it puts a great strain on the side car attachments.

After the machine has been in use a little time it sometimes happens that the side car fittings will take a permanent "set," causing the cycle to lean slightly towards the side car. This is easily remedied by means of the telescopic torque rod, between the seat pillar and the side car axle.

When turning a corner to the left, lean the body to the left, when turning to the right lean the body to the right. It is not sufficient, however, to simply lean the body, the rider should throw the weight of his body in the direction he leans.

Always turn a corner at a reasonable speed, especially when turning to the left, as centrifugal force puts a great lateral strain on the machine and tends to lift the side car wheel from the ground. When turning to the right the lateral strain is thrown in the opposite direction and has a crushing effect on the side car axle via the torque rod. When taking a corner to the right at high speeds this strain is terrific and is a fruitful cause of side car axles breaking.

The A.J.S. side car axle is made specially strong for this reason, but the rider will be well advised if he takes corners at a reasonable and safe speed.

When turning to the left while climbing a very steep hill at a moderate speed it is not so necessary to lean in that direction, as the natural side-drag of the side car tends to turn the machine to the left. When turning to the right under the same conditions the driver and passenger should lean well to the right.

When climbing a very steep hill the passenger should get in a position that will put as much weight as possible on the back wheel of cycle. It will prevent the wheel slipping, and will counteract the tendency of the side car to drag. When descending very steep hills it will help the steering also if the passenger will put as much weight on the driving wheel as possible.

With the exception of the instances mentioned above, there is no necessity for the passenger to be continually leaning to the left or to the right, especially if ordinary corners are taken at a reasonable and safe speed. It is not an uncommon sight to see a passenger continually leaning in one direction or the other, even when turning a very slight curve in the road, with the mistaken idea that it helps the steering. It is not only unnecessary but it makes a toil of what should be a pleasure.

The old saying "the race is not always to the swift," is very true, when applied to motoring. The careful driver who keeps up a consistent reasonable speed is usually much more certain of reaching his destination, not only in good time, but in comfort and safety.

As a last word on side cars, we would earnestly advise our friends to order the complete combination if this has not already been done and not fit one of the ultra cheap side cars with which the market is flooded (some of the expensive ones are very badly designed). They not only give continual trouble but in some cases are positively dangerous. However reliable the motor cycle may be, a side car which is always giving trouble spoils the whole combination.

## Spare Parts List.

In this, our 1914 Spare Parts List a greater number of parts are enumerated than in the 1913 list. So as not to clash with previous lists, new numbers have been given to the parts. The prices of several principal parts have been reduced, but others have been advanced where improved design has resulted in extra cost in manufacture. We reserve the right to alter any prices given, without notice. The cost of carriage, freight, customs' charges, etc., must be added if parts are ordered from abroad.

In the case of parts required for 1910, 1911 and 1912 models, it will prevent possible delay or mistakes if the old part is sent as a pattern, but in any case we would impress upon our clients the absolute necessity of giving full particulars of the machine and the parts required, as patterns are altered each year, and many of the fittings vary on different models.

All previous lists are cancelled.

All new motor cycles, spare parts, replacements, repairs, etc., are only supplied or carried out under the guarantee given in our current Motor Cycle Catalogue and under no other conditions.

February, 1914.

A. J. STEVENS & Co., LTD.

### **IMPORTANT RULES TO BE OBSERVED.**

1. Parts sent to us to be repaired, replaced, or as pattern, should bear distinctly the sender's full name and address, and explicit instructions sent with, or under separate cover, as to their disposal. In all cases quote number of engine (stamped on aluminium crank case at foot of cylinders on driving side).
2. All goods must be consigned Carriage Paid.
3. Full particulars should be given as to how the goods are to be returned, whether erated, unerated, passenger or goods train. This refers only to complete machines or bulky articles such as engine, etc.
4. When sending a complete motor cycle, do not fail to remove all accessories such as lamp, horn, tools, badges, etc., otherwise we cannot be held responsible for their safe return, although we take every possible precaution in this respect.

## Terms of Business.

When ordering parts by letter, the exact amount, including postage, must be remitted, or (in a case where the cost is not known) a sum likely to cover the cost.

If the amount remitted is in excess or insufficient, our despatch clerk will adjust the matter, but the sender should advise us if any surplus is to be returned or placed to his credit. If cash is not sent with the order, a *pro forma* invoice will be issued, and when the amount is remitted, the goods will be sent.

If the parts are urgently wanted, a remittance may be sent by wire. In this case the sender must fill in his name and address in the space provided on the Post Office Requisition Form for a private message from remitter to payee; unless this is done the Post Office do not give this information in the telegram.

Under no circumstances shall we dispatch spare parts until their price has been received.

Where, however, it is absolutely necessary that spares are secured without delay, we earnestly recommend our clients to open a small credit a/c with us. A deposit of not less than £20/0 will cover the cost of many items, and it will save the customer all inconvenience. If this is done, always mention "Deposit a/c" when ordering. A statement of a/c will be rendered periodically.

The above rule also applies to repairs or overhauls.

Under no circumstances will repairs, etc., be despatched until paid for.

**All repairs or parts returned to us must be sent carriage paid, or we cannot accept delivery of same.**

**All goods returned by us are consigned carriage forward.**

## Estimates.

We are sometimes asked by clients when sending their engines or motor cycles, etc., for repairs or overhauls, to furnish an estimate for the necessary work.

We are pleased to do this on the distinct understanding that we reserve the right to charge for any extra work or new parts found necessary to put such machine or engine, etc., in good running order, which it may have been impossible to detect when dismantling.

We prefer not to undertake a repair or overhaul (nor do we accept any responsibility) when the estimate for same has been curtailed by the owner.

If an estimate is not accepted, a charge is made for taking down, re-assembling, and preparing the estimate.

**IMPORTANT NOTICE re 1913 SPARE PARTS:**

Before ordering from list below, see if the part required figures in the **Addenda** at bottom of page 26; if so, the Part No. and price **there** given applies to 1913 models and **not** similarly-described parts appearing in the list proper. In **any** case always state whether 1913 or 1914 model.

**Spare Parts List.**

	6 h.p. Model D.		22 h.p. Model B.	
	No.	£ s. d.	No.	£ s. d.
<b>ENGINE</b>				
Cylinder only	251	0 2 8	251B	2 0 8
Valve Stem only	252	0 3 4	252B	0 3 8
Complete Valve	253	0 4 6	253B	0 1 0
Valve Spring	254	0 0 6	254B	0 0 6
Valve Cone	255	0 0 3	255B	0 0 3
Valve Cotter	256	0 0 1	256B	0 0 1
Valve Guide	257	0 2 6	257B	0 2 6
Cylinder Bridge	258	0 2 6	258B	0 2 6
Single Holding down bolt	259	0 1 9	259B	0 1 9
Double, or V bolt	260	0 2 0	260B	0 4 0
Exhaust valve cap	261	0 1 6	261B	0 1 6
Inlet valve cap	262	0 2 6	262B	0 2 6
Exhaust tappet	263	0 2 0	263B	0 2 0
Inlet tappet (medium)	265	0 1 0	265B	0 1 0
Inlet tappet (straight)	266	0 0 1	266B	0 0 1
Tappet lock nut (small)	267	0 0 3	267B	0 0 3
Tappet lock nut (large)	268	0 0 3	268B	0 0 3
Tappet top	269	0 2 6	269B	0 2 6
Tappet Guide (long)	270	0 1 6	270B	0 1 6
Tappet Guide (medium)	271	0 1 0	271B	0 0 6
Tappet Guide (short)	272	0 0 6	272B	0 0 6
Double inlet cam	273	0 0 6	273B	0 0 6
Single exhaust cam	274	0 3 6	274B	0 3 6
Small timing wheel	275	0 3 6	275B	0 3 6
Toggle or rocker arm	276	0 2 3	276B	0 2 3
Timing spindle, nut and washer	277	0 5 0	277B	0 5 0
Timing case screws (8)	278	0 5 0	278B	0 5 0
Cover for magneto chain	279	0 3 6	279B	0 3 6
Shaft for small timing wheel	280	0 3 6	280B	0 3 6
Blind end shaft, L.H. for ex. cam	281	0 3 6	281B	0 3 6
R.H. blind end shaft for double inlet cam	282	0 0 9	282B	0 0 9
Special alloy blind bushes for timing wheel	283	0 0 9	283B	0 0 9
Bush for magneto half time shaft	284	0 0 9	284B	0 0 9
Complete crank case, with bushes and timing cover halves of crank case not supplied	285	3 17 6	285B	3 5 0
Main bushes	286	0 4 0	286B	0 3 0
Small end bush for con. rod	287	0 1 6	287B	0 1 6
Big end bush for con. rod	288	0 3 0	288B	0 3 0
Connecting rod, complete with bushes	289	0 15 0	289B	0 15 0
Crank pin	290	0 7 6	290B	0 7 6
Crank pin nut	291	0 0 3	291B	0 0 3
Main shaft pulley side	292	0 12 0	292B	0 9 0
Main shaft, gear side	293	0 10 0	293B	0 8 3
Flywheel only	294	0 10 6	294B	0 10 6
Rivets for main shaft	295	0 0 5	295B	0 0 5
Bolts and nuts for crank case	297	0 0 1	297B	0 0 1
Key for pulley side shaft	298	0 0 3	298B	0 0 3
Crank case oil plug	299	0 16 4	299B	0 16 4
Union for oil release pipe	300	0 10 0	300B	0 10 0
Piston complete	301	0 1 6	301B	0 1 6
Piston only	302	0 3 4	302B	0 3 4
Piston ring	303	0 0 0	303B	0 0 0
Gudgeon pin	304	0 1 0	304B	0 0 6
Gudgeon pin band	305	0 1 0	305B	0 0 6
Nuts for holding down bolts	306	0 0 3	306B	0 0 3
Valve cap washer	307	0 0 3	307B	0 0 3
Cylinder foot washer	308	0 10 0	308B	0 10 0
Engine plates	309	0 1 6	309B	0 1 6
Engine bolts and nuts	310	0 1 6	310B	0 1 6
Elbow on crank case for oil pipe	311	0 2 6	311B	0 2 6
Compression tap	312	0 0 6	312B	0 0 6
Compression tap washer	313	0 2 6	313B	0 2 6
Spark plug (Spinix)	314	0 0 1	314B	0 0 1
Spark plug washer	315	0 0 1	315B	0 0 1
Exhaust pipe front	316	0 2 6	316B	0 2 6
Exhaust pipe back	317	0 2 6	317B	0 2 6

	6 h.p. Model D.		22 h.p. Model B.	
	No.	£ s. d.	No.	£ s. d.
Exhaust pipe washer	317	0 0 1	317B	0 0 1
Exhaust tail pipe	318	0 2 6	318B	0 2 6
Exhaust pipe union	319	0 2 0	319B	0 2 0
Exhaust tail pipe lock nut	320	0 1 0	320B	0 1 0
Oil release pipe	321	0 1 6	321B	0 1 6
Oil release pipe union	322	0 0 3	322B	0 0 3
Flanged inlet pipe	323	0 2 0	323B	0 2 0
Inlet pipe lock nut	324	0 1 0	324B	0 1 0
Induction pipe with clip	325	0 4 0	325B	0 4 0
Induction pipe nut	326	0 1 0	326B	0 1 0
<b>GEAR BOX</b>				
Gear box case and cover, complete with bearings	327	4 4 0	327B	3 15 0
Gear box cover and bearings (2)	328	1 3 0	328B	1 0 9
Large Hoffman ball race	329	0 8 0	329B	0 8 0
Small	330	0 6 0	330B	0 6 0
Stall	331	0 4 0	331B	0 4 0
Gear box main shaft	332	0 19 6	332B	0 17 6
Lay shaft	333	2 5 0	333B	2 0 0
High speed dog wheel	334	1 0 0	334B	0 17 6
Sliding or middle dog wheel	335	1 3 0	335B	1 0 0
Low speed dog wheel	336	0 10 0	336B	0 7 6
Thrust washer	337	0 1 0	337B	0 1 0
locknut	338	0 1 6	338B	0 1 6
Gear box sprocket	339	0 8 6	339B	0 7 6
Lock ring for sprocket	340	0 2 0	340B	0 2 0
Gear shifter bush and screws	341	0 3 0	341B	0 3 0
Gear shifter complete	342	0 12 0	342B	0 7 6
Large bearing for driving sprocket	343	0 8 0	343B	0 7 6
Small bearing for gear box case	344	0 4 0	344B	0 4 6
Gear shifter arm	345	0 3 6	345B	0 4 6
Gear shifter pin	346	0 1 0	346B	0 1 0
Pins for Gear box cover	347	0 1 0	347B	0 1 0
Spring washers	348	0 0 3	348B	0 0 3
Oil plug for gear box	349	0 1 3	349B	0 1 3
Change speed lever on gear box	350	0 2 6	350B	0 10 6
Clutch lever on gear box	351	0 5 6	351B	0 5 6
Long push rod	352	0 2 0	352B	0 2 0
Small	353	0 0 6	353B	0 0 6
5/16 ball for push rod	354	0 0 1	354B	0 0 1
Pin and nut for clutch lever	355	0 0 9	355B	0 0 9
Tin dust cover	356	0 0 6	356B	0 0 6
Pin and nut through clutch lever, for holding in position	357	0 0 4	357B	0 0 4
Bush for high gear dog wheel	358	0 3 0	358B	0 3 0
Lock nut for high gear dog wheel	359	0 2 0	359B	0 2 0
<b>CLUTCH</b>				
Fixed plate	360	0 6 6	360B	0 5 6
Loose cork plate	361	0 5 6	361B	0 5 6
Dished plate	362	0 4 6	362B	0 4 6
Small screw and spring for 362	363	0 0 1	363B	0 12 6
Cork sprocket	364	0 11 6	364B	0 12 6
11/16 ball race	365	0 5 0	365B	0 5 0
Sliding plate	366	0 4 6	366B	0 4 6
Ratchet wheel	367	0 5 6	367B	0 5 6
plate	368	0 2 6	368B	0 2 6
spring	369	0 0 6	369B	0 0 6
Key for sliding plate	370	0 0 6	370B	0 0 6
Clutch spring	371	0 2 6	371B	0 2 6
Clutch control, lever and cable	372	0 2 6	372B	0 2 6
Lever complete with clip	373	0 5 0	373B	0 5 0
Screw for H-bar clip	374	0 0 1	374B	0 0 1
Large headed screw and washer for lever	375	0 0 1	375B	0 0 1
Small screw for clip	376	0 0 1	376B	0 0 1
Inner cable	377	0 2 0	377B	0 2 0
Outer cable	378	0 3 0	378B	0 3 0
Bowden adjuster under gear box	380	0 1 0	380B	0 1 0

	No.	¢	s.	d.	No.	¢	s.	d.	No.	¢	s.	d.
<b>KICK STARTER</b>												
Kick starter quadrant and spindle	381	0	7	9	381B	0	7	9				
.. .. . crank	382	0	2	6	382B	0	2	6				
.. .. . coil spring	383	0	1	9	383B	0	1	9				
Cutter for crank	384	0	0	2	384B	0	0	2				
Crank pedal	385	0	2	0	385B	0	2	0				
.. .. . nut	386	0	0	2	386B	0	0	2				
Pin for kick starter bracket	387	0	0	2	387B	0	0	2				
<b>FRAME</b>												
Frame only	388	3	17	6	388B	2	5	0				
Seat pillar	389	0	2	6	389B	0	2	6				
Seat pillar bolt and nut	390	0	0	6	390B	0	0	6				
Adjusting pin for back wheel	391	0	0	4	391B	0	0	3				
Top ball race	392	0	0	9	392B	0	0	4				
Bottom ball race	393	0	0	9	393B	0	0	4				
Head clip and race	394	0	4	0	394B	0	2	6				
Bolt and nut for head clip	395	0	0	6	395B	0	0	6				
Top tube	396	0	2	6	396B	0	2	6				
Centre tube and lugs	397	0	4	6	397B	0	3	6				
Front down tube	398	0	3	0	398B	0	2	6				
Back	399	0	2	0	399B	0	2	6				
Bottom bracket	400	0	15	0	400B	0	10	6				
Engine lug	401	0	0	2	401B	0	1	9				
<b>BACK WHEEL</b>												
Complete wheel (less tyre and brake drum)	402	1	17	6	402B	1	5	0				
Rim only	403	0	5	0	403B	0	4	0				
Spokes and nipples	404	0	5	6	404B	0	5	6				
Brake drum and sprocket (chain wheel only)	405	0	18	0	405B	0	10	6				
Anchor plate	406	0	7	6								
Expansion piece	407	0	2	6								
Exhaustion lever	408	0	0	9								
Brake lining and rivets	409	0	2	0								
Coil spring in drum	410	0	0	4								
Felt washer	411	0	0	2								
Plain washer	412	0	0	1								
Hub shell only	413	0	12	6	413B	0	8	0				
Hub complete	414	1	4	0	414B	0	15	0				
Spindle	415	0	2	0	415B	0	1	6				
Cones	416	0	1	2	416B	0	1	2				
Lock ring	417	0	2	0	417B	0	2	0				
Balls	418	0	0	6	418B	0	0	6				
Large spindle nut	419	0	0	3	419B	0	0	2				
Cups	420	0	2	0	420B	0	1	0				
Anchor pin	421	0	0	9								
Security bolt and nut	422	0	0	4	422B	0	0	4				
Lubricator for hub	423	0	0	4	423B	0	0	4				
Distance piece	424	0	0	4	424B	0	0	4				
Balls, nuts and washers for fixing brake drum	425	0	2	0	425B	0	0	3				
Back stand	426	0	9	0	426B	0	6	9				
.. .. . bolt and washer	427	0	0	3	427B	0	0	3				
Back mudguard	428	0	5	6	428B	0	4	6				
Clip on mudguard for holding stand	429	0	1	0	429B	0	1	0				
Complete clip (2 pieces)	430	0	3	6	430B	0	3	6				
Brake drum, small spokes, etc.					431B	0	5	6				
<b>FRONT WHEEL</b>												
Wheel complete less tyre	432	1	2	6	432B	0	17	6				
Rim only	433	0	6	0	433B	0	4	0				
Spokes per set with nipples	434	0	5	6	434B	0	5	6				
Hub complete	435	0	9	6	435B	0	9	1				
Hub only	436	0	1	6	436B	0	1	6				
Spindle	437	0	2	0	437B	0	1	6				
Cones	438	0	1	0	438B	0	1	0				
Nuts	439	0	0	2	439B	0	0	2				
Washers	440	0	0	1	440B	0	0	1				
Dust caps	441	0	0	1	441B	0	0	1				
Lubricators	442	0	0	3	442B	0	0	3				

	No.	¢	s.	d.	No.	¢	s.	d.	No.	¢	s.	d.
<b>Front Wheel—continued.</b>												
Front mudguard with flap	443	0	7	6	443B	0	5	6				
Front stand	444	0	6	0	444B	0	6	0				
.. .. . bolt	445	0	0	3	445B	0	0	3				
Complete clip for stand	446	0	2	0	446B	0	3	0				
Single clip	447	0	1	6	447B	0	1	6				
Balls	448	0	0	6	448B	0	0	6				
<b>FRONT FORKS</b>												
Front fork complete	449	2	47	0	449B	1	19	9				
Front portion only (right)	450	1	8	6	450B	1	0	0				
Top bolt	451	0	0	8	451B	0	0	4				
Top link	452	0	1	2	452B	0	0	11				
Nuts for bolt	453	0	0	4	453B	0	0	3				
Washers for bolt	454	0	0	2	454B	0	0	2				
Oiler for fork	455	0	0	3	455B	0	0	3				
Bottom link	456	0	1	2	456B	0	0	11				
.. .. . bolt	457	0	0	6	457B	0	0	6				
Front fork spring	458	0	1	2	458B	0	0	10				
Bolt and nut for securing bottom of spring	459	0	0	6	459B	0	0	3				
Pin and nut for securing top of spring	460	0	0	2	460B	0	0	2				
Clips for mudguard	461	0	0	8	461B	0	0	6				
Head collar and bolt	462	0	3	0	462B	0	2	6				
Head clip and bolt	463	0	0	6	463B	0	0	6				
Bolt for head collar	464	0	4	6	464B	0	0	6				
<b>BACK BRAKE</b>												
Back brake cable	465	0	5	6	465B	0	3	6				
Brake pedal	466	0	4	0	466B	0	0	6				
Spring for holding pedal	467	0	0	6	467B	0	0	6				
Brake lining and rivets	468	0	2	0								
Cable nut, slotted	469	0	0	6								
.. .. . shoe												
.. .. . rod complete												
Ball joint												
Pin for brake shoe holding to frame												
Spring washer and plain washer and nut												
<b>FRONT BRAKE</b>												
Front brake complete (less lever and cable)	476	0	11	6	476B	0	8	6				
Horseshoe portion only	477	0	7	6	477B	0	6	9				
Cable and lever on handle bar	478	0	8	6	478B	0	8	0				
Cable only (inner and outer)	479	0	3	6	479B	0	3	6				
Lever only	480	0	5	0	480B	0	4	6				
Outer casing	481	0	1	6	481B	0	1	6				
Inner wire	482	0	1	0	482B	0	1	0				
Brake shoe and block (either side)	483	0	3	0	483B	0	2	6				
Brake shoe only (either side)	484	0	1	0	484B	0	1	6				
Block only (either side)	485	0	0	6	485B	0	0	4				
Box and spring at top of plunger rod	486	0	1	3	486B	0	1	0				
Pin and nut for inverted lever	487	0	0	2	487B	0	0	2				
<b>HANDLE BAR</b>												
Handle bar with brake & exhaust control levers	488	1	3	6	488B	0	19	0				
.. .. . only	489	0	10	0	489B	0	7	6				
.. .. . with grips	490	0	11	6	490B	0	9	0				
Grips per pair	491	0	1	6	491B	0	1	6				
Inverted lever for front brake	492	0	5	0	492B	0	5	0				
.. .. . exhaust lifter	493	0	5	0	493B	0	5	0				
.. .. . clutch	494	0	5	0	494B	0	5	0				
Valve lifter control complete	495	0	8	9	495B	0	8	9				
.. .. . cable (inner and outer)	496	0	3	0	496B	0	3	0				
.. .. . inner wire only	497	0	1	0	497B	0	1	0				
.. .. . outer casing only	498	0	2	0	498B	0	2	0				
.. .. . arm over crank case	499	0	2	0	49							

	No.	£ s. d.	No.	£ s. d.
Complete footboard, one side	502	0 5 6	502B	0 5 6
Wood base	503	0 0 6	503B	0 0 6
Rubber matting	504	0 2 6	504B	0 2 6
Aluminium heading	505	0 1 0	505B	0 1 0
Clip under board for rods	506	0 0 6	506B	0 0 6
Distance piece	507	0 0 3	507B	0 0 3
Footboard rod	508	0 1 6	508B	0 1 6
Clip for exhaust tail pipe	509	0 1 6		

**FOOTBOARDS**

**SILENCER**

Silencer body	510	0 17 6	510B	0 10 0
Bolt and nut	511	0 0 3	511B	0 0 3
Nut for securing tail pipe	512	0 1 0		
Baffle pipe	513	0 2 3		

**MAGNETO**

	No.	£ s. d.	No.	£ s. d.
Magneto complete	514	6 12 0	514B	4 10 0
Shield complete	515	0 17 6	515B	0 17 6
Wing for shield (one side)	516	0 6 6	516B	0 6 6
Magneto platform	517	0 3 6	517B	0 3 6
Eye-bolt for securing platform to frame	518	0 1 6	518B	0 1 6
Contact breaker	519	1 1 0	519B	1 1 0
Terminal and spring	520	0 3 3	520B	0 3 3
Cup for terminal	521	0 0 6	521B	0 0 6
Cover plate with brushes	522	0 0 6	522B	0 0 6
Brush and spring only	523	0 10 6	523B	0 7 3
Rearmount points (price subject to fluctuation)	524	0 0 4	524B	0 0 4
Ball cage	525	0 6 0	525B	0 6 0
Left-hand bolt for securing sprocket	526	0 2 0	526B	0 2 0
Distance piece	527	0 2 0	527B	0 2 0
Ignition lever on tank	528	0 1 6	528B	0 1 6
rod	529	0 1 6	529B	0 1 6
Pin and washer for lever	530	0 1 6	530B	0 1 6
High tension wire and terminal	531	0 0 3	531B	0 0 3
	532	0 0 3	532B	0 0 3
	533	0 2 6	533B	0 2 6

**Repairs and Renewals to German Magnetos cannot be guaranteed during the War**

**SADDLE (Lycett)**

Saddle	534	1 7 0	534B	0 13 1
" (padded 8" extra)	535	0 2 0	535B	0 2 6
Nuts for saddle pin	537	0 0 2	537B	0 0 2

**CARRIER**

Carrier	538	0 9 6	538B	0 8 6
Side cases for tools	539	0 8 0		
Tool roll complete	540	0 15 0		
Reflex light	541	0 1 3		
Back number plate	542	0 1 3		
Front	543	0 1 3		
Tool case at back of carrier	544	0 6 0		

**SPROCKETS**

Back chain wheel and brake drum	545	0 18 0		
18 tooth engine sprocket	546	0 4 0	546B	0 5 0
19 "	547	0 7 6	547B	0 8 0
20 "	548	0 7 0	548B	0 7 0
21 "	549	0 8 0	549B	0 7 0
Gear box sprocket	550	0 8 6	550B	0 8 6
Magneto sprocket	551	0 4 0	551B	0 4 0
Back chain wheel	552	0 10 6	552B	0 10 6

	No.	£ s. d.	No.	£ s. d.
Front chain (engine to gear box)	553	0 8 0	553B	0 7 0
Back " (gear box to back wheel)	554	0 12 6	554B	0 11 0
Magneto chain	555	0 5 6	555B	0 2 0
Spring link	556	0 0 8	556B	0 0 8
Cranked link	557	0 0 8	557B	0 0 8
Inner link	558	0 0 6	558B	0 0 6
Outer "	559	0 0 6	559B	0 0 6
Shaft extractor	560	0 3 6	560B	0 3 6
Slide springs	561	0 0 6	561B	0 0 6
" plates	562	0 0 6	562B	0 0 6

**CHAINS**

**TANK**

Tank complete	563	2 18 0	563B	2 5 0
only (no fittings)	564	2 2 6	564B	1 12 0
Best & Lloyd drip feed	565	0 12 6	565B	0 12 6
Oil pump plunger	566	0 2 6	566B	0 2 6
" (cap)	567	0 2 0	567B	0 2 0
" pipe (two way)	568	0 6 0	568B	0 6 0
Injector tap	569	0 0 6	569B	0 0 6
" union	570	0 2 6	570B	0 2 6
Petrol pipe	571	0 2 0	571B	0 2 0
Petrol pipe union	572	0 3 6	572B	0 3 6
Tap washer	573	0 0 6	573B	0 0 6
Oil filler cap	574	0 0 6	574B	0 0 6
Glass top petrol filler cap	575	0 2 6	575B	0 2 6
Petrol filter in tank	576	0 2 0	576B	0 2 0
Gauze in petrol tap for filter	577	0 2 0	577B	0 2 0
Tank transfer	578	0 2 0	578B	0 2 0
Enamelling and lining tank as new	579	0 0 2	579B	0 0 2
	580	0 10 6	580B	0 7 6

**CARBURETTER**

Carburetter complete	581	1 10 0	581B	1 8 0
Mixing chamber	582	0 6 6	582B	0 6 6
Floater chamber body	583	0 5 6	583B	0 5 6
Floater	584	0 1 0	584B	0 1 0
Needle and collar	585	0 1 0	585B	0 1 0
Split collar for needle	586	0 0 3	586B	0 0 3
Floater chamber cover	587	0 2 0	587B	0 2 0
Knob, spring and cap on top of cover	588	0 0 6	588B	0 0 6
Cap only	589	0 0 2	589B	0 0 2
Spring only	590	0 0 1	590B	0 0 1
Control complete (valves, levers, slides, etc.)	592	0 15 0	592B	0 13 0
Air slide only	593	0 1 6	593B	0 1 6
Throttle slide only	594	0 2 6	594B	0 2 6
Spring for slide	595	0 0 3	595B	0 0 3
Inner wire for cable	596	0 0 2	596B	0 0 2
Outer casing for cable	597	0 0 6	597B	0 0 6
Air lever with knob	598	0 1 6	598B	0 1 6
Throttle lever with knob	599	0 0 4	599B	0 0 4
Clip for handle bar	601	0 2 6	601B	0 2 6
Long set screw for clip (on top)	602	0 0 3	602B	0 0 3
Cap on control on handle bar	603	0 0 6	603B	0 0 6
Spring washer under cap	604	0 0 3	604B	0 0 3
Small slotted cap at end of barrel	605	0 0 6	605B	0 0 6
Jet	606	0 0 6	606B	0 0 6
Mushroom cover for air inlet	607	0 2 0	607B	0 2 0
Square headed set pin	608	0 0 6	608B	0 0 6
Lock ring at end of mixing chamber	609	0 0 0	609B	0 0 0

**CHAIN CASES**

Complete chain case	610	3 17 6	610B	3 10 6
Large black cap on chain case	611	0 2 0	611B	0 2 0
Inspection cover over clutch dress cap	612	0 7 6	612B	0 7 6
Large lubricators	613	0 0 3	613B	0 0 3
Shutter	614	0 0 9	614B	0 0 9
Set pins for chain case	615	0 0 2	615B	0 0 2

	6 h.p. Model D, 2 $\frac{1}{2}$ h.p. Model B.		2 $\frac{1}{2}$ h.p. Model B.	
	No.	£ s. d.	No.	£ s. d.
<b>GATE CHANGE</b>				
Gate change complete	616	1 5 0	616B	1 5 0
Quadrant on frame lug	617	0 10 6	617B	0 10 6
“ lever	618	0 7 6	618B	0 7 6
Large knob for lever	619	0 2 0	619B	0 2 0
Rod from lever to gear box	620	0 1 6	620B	0 1 6
Set pin for holding lever to quadrant	621	0 0 6	621B	0 0 6
<b>BEST &amp; LLOYD DRIP FEED</b>				
Complete drip feed lubricator	622	0 12 6	622B	0 12 6
Glass gauge	623	0 0 9	623B	0 0 9
Punger only	624	0 2 6	624B	0 2 6
Lock ring and gauge	625	0 1 6	625B	0 1 6
Large spring in pump barrel	626	0 1 6	626B	0 1 6
<b>GEAR BOX 2<math>\frac{1}{2}</math> H.P. 2-SPEED</b>				
Main shaft	627	0 12 6	627	0 12 6
Lay shaft	628	1 0 0	628	1 0 0
High speed dog	629	0 17 6	629	0 17 6
Low “	630	0 7 6	630	0 7 6
Sliding dog	631	0 10 0	631	0 10 0
Push rod	632	0 2 0	632	0 2 0
Patent spring-acting change-speed lever on gear box	633B	0 10 0	633B	0 10 0
<b>SIDE CAR PARTS</b>				
Cones for wheel spindle	634	0 1 6	634	0 1 6
Seat pillar bolt	635	0 3 6	635	0 3 6
Back frame clip	636	0 6 6	636	0 6 6
Front frame clip	637	0 6 0	637	0 6 0
Large nut as on front and back clip	638	0 0 1	638	0 0 1
Spring washer	639	0 1 0	639	0 1 0
Cotter and collar for clips	640	0 1 0	640	0 1 0
Spring bolt for seat pillar pin	641	0 0 3	641	0 0 3
Small spring for “	642	0 3 6	642	0 3 6
Fixed “dummy” spindle for holding sprocket, etc., in position when back wheel is detached, complete with nut	643	0 2 0	643	0 2 0
Brake drum and sprocket centre	644	0 2 0	644	0 2 0
Shoe nuts	645	0 3 0	645	0 3 0
Centre pin	646	0 0 0	646	0 0 0
Driving studs (screwed)	647	0 0 1	647	0 0 1
“ (plain)	648	0 0 6	648	0 0 6
Hollow hub spindle	649	0 1 9	649	0 1 9
Special spanner	650	0 3 6	650	0 3 6
Cups for hub bag	651	0 2 0	651	0 2 0
Distance piece	652	0 0 4	652	0 0 4
<b>DETACHABLE WHEEL PARTS</b>				
Fixed “dummy” spindle for holding sprocket, etc., in position when back wheel is detached, complete with nut	642	0 3 6	642	0 3 6
Brake drum and sprocket centre	644	0 2 0	644	0 2 0
Shoe nuts	645	0 3 0	645	0 3 0
Centre pin	646	0 0 0	646	0 0 0
Driving studs (screwed)	647	0 0 1	647	0 0 1
“ (plain)	648	0 0 6	648	0 0 6
Hollow hub spindle	649	0 1 9	649	0 1 9
Special spanner	650	0 3 6	650	0 3 6
Cups for hub bag	651	0 2 0	651	0 2 0
Distance piece	652	0 0 4	652	0 0 4
<b>ADDENDA of 1913 SPARE PARTS</b>				
<b>not included in above list.</b>				
Cylinder complete with valves and valve caps	116	2 13 0	116B	2 13 0
“ “	117	1 16 0	117B	1 16 0
Cylinder without fittings	118	0 18 0	118B	0 18 0
Cylinder head with valve guides but no fittings	119	0 18 0	119B	0 18 0
Cylinder barrel only	120	0 0 6	120B	0 0 6
Copper washer for cylinder head	171	0 3 0	171B	0 1 0
Front wheel spindle, with nuts	172	0 1 0	172B	0 0 9
“ cups	173	0 1 0	173B	0 0 9
“ cup lock ring	176	0 0 8	176B	0 1 0
“ cones	185	3 5 6	185B	2 5 0
Cycle frame, without fork, stands, carrier, or fittings	205	1 17 6	205B	1 15 0
Tank, complete with all fittings				