

EXPORT EDITION.

B.S.A.

MOTOR BICYCLES

*For Solo and Sidecar*



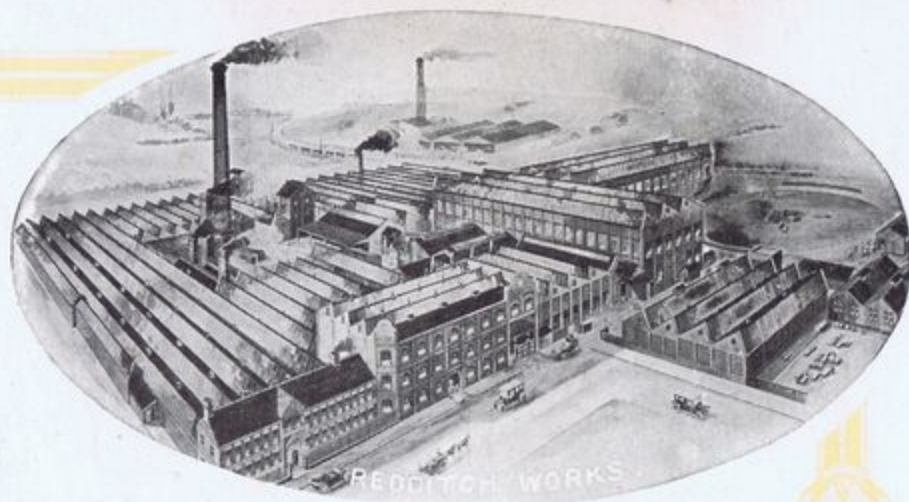
THE BIRMINGHAM  
SMALL ARMS CO LTD  
BIRMINGHAM

BARNSTORMERS.CO.NZ



1915

# B·S·A



## MOTOR BICYCLES

### The Birmingham Small Arms Co., Ltd.

Manufacturers of Rifles.

Contractors to His Majesty's Government, The War Office, The India Office, The Post Office, and Colonial and Foreign Governments.

REGISTERED OFFICES:  
SMALL HEATH, BIRMINGHAM.

WORKS:  
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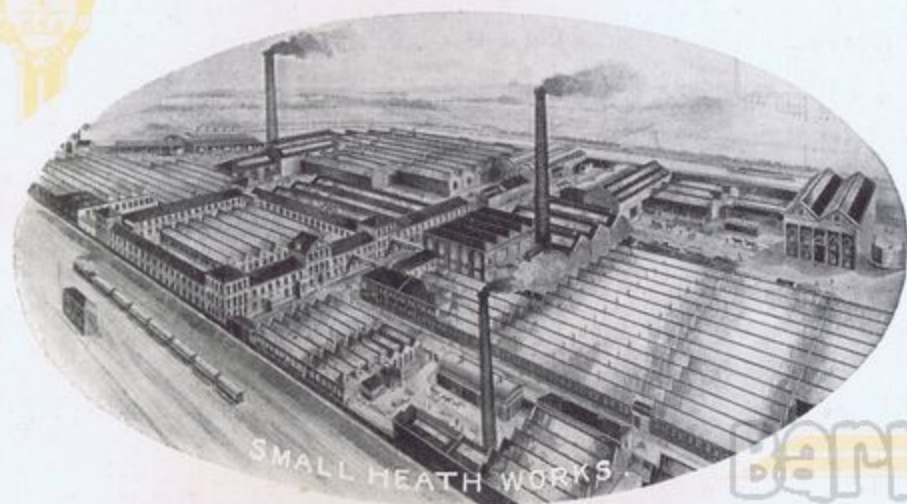
Telegrams . . . . "Smallarms, Birmingham."

Telephone . . . . . 6440 Central (7 lines).

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Scottish Depot (Wholesale)

24, CARLTON PLACE, GLASGOW.



IMPORTANT.—All communications should be addressed to Head Offices, Small Heath, Birmingham.

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# B.S.A. Motor Bicycle Guarantee.

*We give the following guarantee with our motor bicycles instead of the guarantee implied by statute, or otherwise, as to the quality or fitness of such machines for the purpose of motor cycling; any such implied guarantee being in all cases excluded; nor can any claim for consequential damages be entertained. In the case of machines which have been used for "hiring-out" purposes, or in respect of which our Trade Mark or manufacturing number has been removed, no guarantee of any kind is given or is to be implied.*

**We Guarantee,** subject to the conditions mentioned below, that all precautions which are usual and reasonable have been taken by us to secure excellence of materials and workmanship; but this guarantee is to extend and be in force for three months only from the date of purchase, and the damages for which we make ourselves responsible under this guarantee are limited to the free supply of any part which may have proved defective, but not to the cost of any work involved in effecting such replacements.

**We undertake,** subject to the conditions mentioned below, to make good at any time within three months any defects in these respects. As motor cycles are easily liable to derangement by neglect or misuse, this guarantee does not apply to defects caused by wear and tear, misuse or neglect.

The term "misuse" shall include among others the following acts:—The attaching of a sidecar to the motor cycle in such a manner as to cause damage, or calculated to render the latter unsafe when ridden. The use of a motor cycle or a motor cycle and sidecar combined when carrying more persons, or a greater weight, than they were designed to bear.

Any B.S.A. motor cycle sent to us to be replated, re-enamelled or repaired, will be treated upon the same conditions as if it were a new motor cycle, *i.e.*, we guarantee that all precautions which are usual and reasonable have been taken by us to secure excellence of material and workmanship, such guarantee to extend and be in force for three months only from the time such work shall have been executed, and this guarantee is in lieu and in exclusion of any common law or statute warranty, and the damages recoverable are limited to the cost of any further work which may be necessary to amend and make good the work found to be defective.

## Conditions of Guarantee.

If a defective part should be found in our motor cycles it must be sent to us, carriage paid, and be accompanied by an intimation from the sender that he desires it repaired free of charge under our guarantee, and, he must also furnish us at the same time with the number of the machine and engine, which will be found stamped on the seat lug and crank case respectively, the name of the agent from whom he purchased and the date of the purchase.

Failing compliance with the above, no notice will be taken of anything which may arrive, but such articles will lie here at the risk of the sender; and this guarantee, or any implied guarantee, shall not be enforceable.

When returning machines for repairs, all accessories, such as lamp, generator, tools, etc., should be removed.

We do not guarantee the specialities of other firms, such as tyres, belts, chains, saddles, etc., or of any component part supplied to the order of the purchaser differing from our standard specification, whether supplied with our motor cycles or otherwise.

## The term "Agent."

The term agent is used in a complimentary sense only, and those firms whom we style our agents are not authorised to advertise, incur any debts, or transact any business whatsoever on our account, other than the sale of goods which they may purchase from us; nor are they authorised to give any warranty or make any representation on our behalf other than those contained in the above guarantee.

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## INTRODUCTION.

**I**N PURSUANCE of the B.S.A. policy, no effort has been spared to maintain the pre-eminent position gained by B.S.A. Motor Bicycles, and we present the 1915 Models with the assurance that for efficient solo and sidecar work they still remain unequalled. The B.S.A. reputation is in itself a guarantee of high quality in design, workmanship and material; but still further evidence of the exceptional power and reliability of B.S.A. Motor Bicycles is provided by the long list of successes gained in competitions, often against much higher powered machines. During the past season no less than 86 first-class awards were secured by B.S.A. Motor Bicycles, and—a noteworthy point—all the machines were fitted with standard engines and standard frames.

Every B.S.A. improvement before being adopted has received a thorough and prolonged testing. Hence riders can rest assured that every feature of a B.S.A. Motor Bicycle is correct, viewed either from the practical rider's or from the engineer's standpoint.

The simplicity and unfailing service of the B.S.A. Countershaft Three-speed Gear has made it one of the most popular of all the B.S.A. refinements. Solo and sidecar riders appreciate its many advantages, particularly for hill climbing and when starting.

The B.S.A. Sidecar has won a great reputation for easy luxurious riding, and, attached to the B.S.A. Motor Bicycle, it represents the highest point yet reached in passenger combinations.

With the rapid development of modern delivery methods, the B.S.A. Delivery Side-Carrier, illustrated on page 23 will be welcomed. It is designed for strength and service, is easy to handle, and is economical in its upkeep costs. The tradesman can cover a far greater area, and in a much shorter time than when relying on horse and trap methods. Moreover, a lengthy experience has proved that the charges for running a reliable delivery sidecar outfit are considerably less, proportionately, than are obtained by any other system.

Comprehensive details of the various mechanical refinements are given in this Catalogue, but correspondence is invited, should fuller particulars of any feature of B.S.A. Motor Bicycles or Sidecars be desired.

**The Birmingham Small Arms Company, Limited.**

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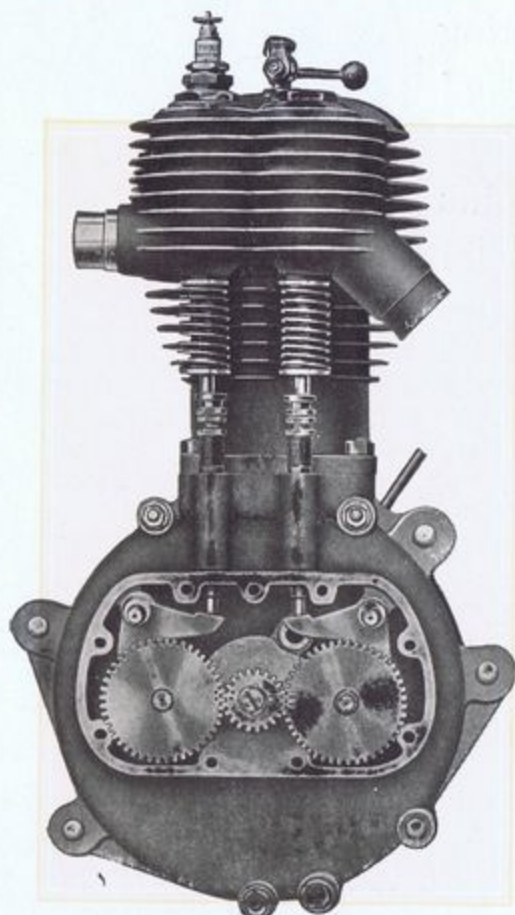
Workpeople leaving the B.S.A. Works at dinner time.



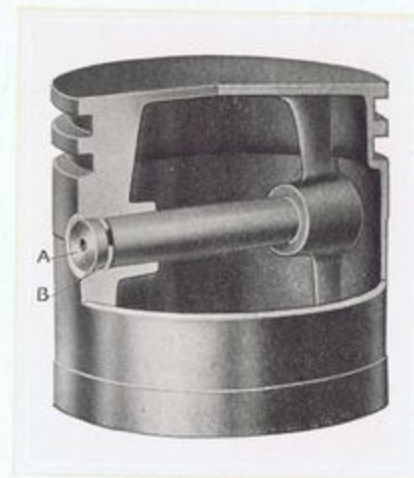
# Constructional Details of B.S.A. Motor Bicycles.

## ENGINE

The wide reputation established by the B.S.A. Engine, for power, reliability and smooth running, is in no small measure due to B.S.A. special design. Hence, in the 1915 Engine the improvements are chiefly of a detail character based on the requirements and experience of the average rider, all the important features, including the off-set cylinder, being again embodied. The dimensions of the engine of Models H and K are bore 85 m/m, stroke 98 m/m. and for the Tourist Trophy Model the stroke is 88 m/m. The cylinder is cast in one piece with extra deep radiating fins, which provide ample cooling surface. The valve ports are of improved design, sharp corners and recesses being avoided as far as possible. Special nickel steel is employed for the valves, which are both mechanically operated; they are placed side by side and are interchangeable. Adjustable valve tappets are fitted, which allow any wear to be taken up without difficulty. The bearings of the gear wheels and levers in the timing case are made of hardened steel, and to prevent leakage of oil and ingress of dirt, these bearings are protected by caps. As shown in illustration, the timing wheels are marked with dots and dashes to ensure correct replacement. Substantial side plates attach the engine to the frame. The cylinder is very accessible and can be readily removed without taking the crank case from the frame.



B.S.A. Engine.



B.S.A. Piston,  
showing Gudgeon Pin.  
Pat. No. 21435/10.



## Constructional Details of B.S.A. Motor Bicycles—Continued.

### PISTON

The piston is very light although strong, and liability to seizure is practically overcome by its special construction. Two lap-jointed cast-iron rings, ground dead true with piston, are fitted at the top. The hollow gudgeon pin (Patent 21435/10), which is slightly tapered to an accurate fit, is secured by a spring engaging with a groove in the pin and boss of piston. When the pin is being inserted or removed, the spring is compressed by means of the taper edge of pin-hole "A" or groove "B." This spring firmly secures the gudgeon pin, there being no set pins or keys that can fall into the crank case. A sharp tap on the end of the gudgeon pin having the larger hole, is all that is necessary to remove the pin. Meanwhile the piston should be well supported on either side to prevent distorting same. After re-fitting gudgeon pin, always test with callipers to ascertain whether the piston is quite cylindrical.

Scored B.S.A. cylinders from loose pins are impossible. Not a single case is known where the gudgeon pin has worked out.



B.S.A. Cush Drive fitted to the Chain Drive Model.

### CONNECTING ROD

This is stamped out of special Chrome Vanadium Steel, and is light in construction but of ample strength. Roller bearings are fitted to the big end, which increase the easy running of the engine. The small end is bushed with the finest quality phosphor-bronze. The fly-wheels are formed from steel stampings and the main shaft is mounted on ball-bearings, thus ensuring a flexible and smooth running engine.



The B.S.A. Adjustable Tappet.



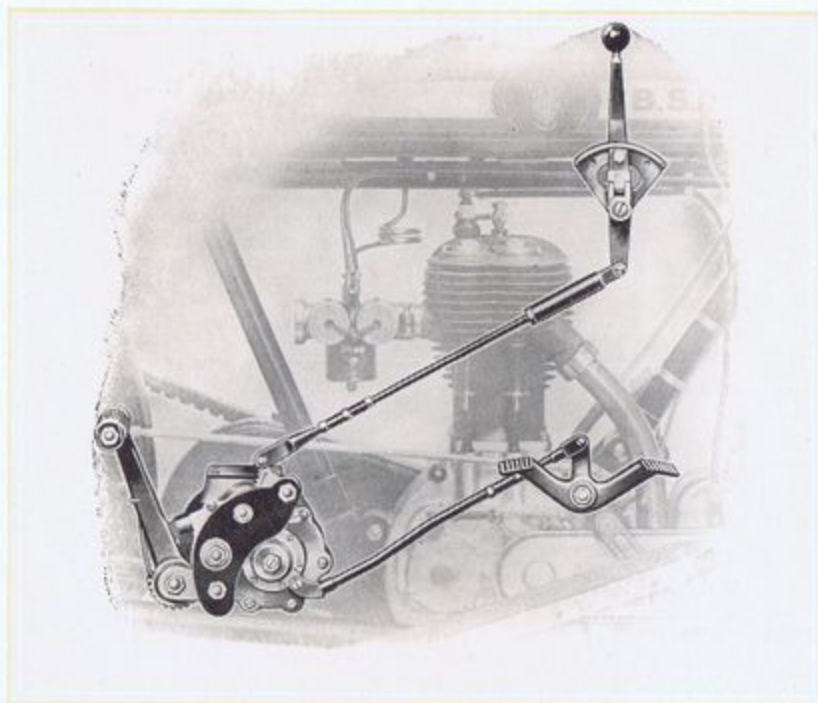
## Constructional Details of B.S.A. Motor Bicycles—Continued

### CUSH DRIVE

This is attached to the engine shaft of the Chain Drive Model. Six powerful springs absorb all engine shocks, thus ensuring flexible transmission. To keep the springs in position under all strains, a retaining cap is fitted. Not only does the cush drive reduce the possibility of broken chains, but also ensures the chains giving longer wear and more satisfactory service.

### B.S.A. COUNTERSHAFT THREE-SPEED GEAR

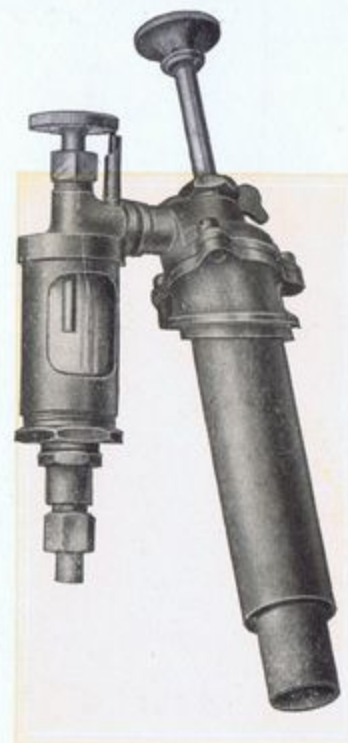
This important refinement is fitted to the Chain Drive and Chain-cum-belt Drive Models, and has proved entirely successful. It enables the rider to surmount almost any hill; and taking a side car becomes as easy and enjoyable as driving a car. Full particulars of the B.S.A. Countershaft Three-speed Gear are given on pages 24, 25, 26.



B.S.A. Countershaft Three-speed Gear and Control.

### VARIABLE PULLEY

The B.S.A. Variable Pulley fitted to the Tourist Trophy Model, is constructed so that gear adjustment can be easily made. After slackening the locking nut the gear is readily reduced or increased by simply turning the adjusting flange. The ratios can be varied between  $4\frac{1}{4}$  to 1 and  $5\frac{3}{4}$  to 1 with  $\frac{7}{8}$ " belt.

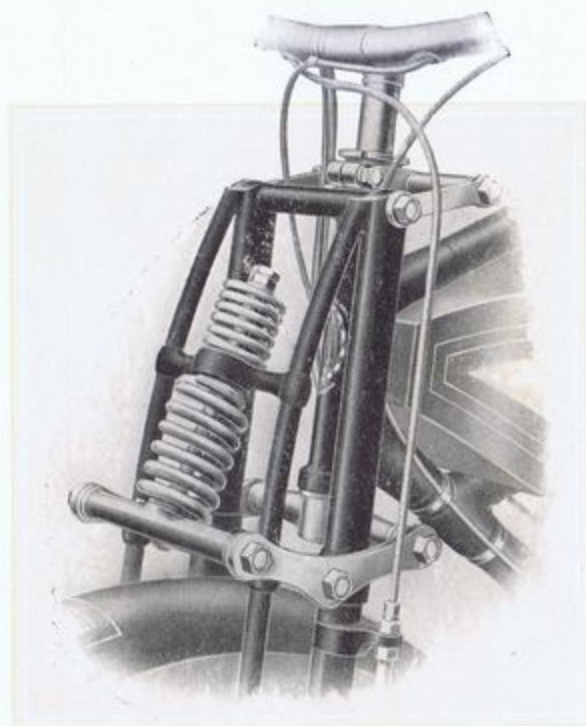


Semi-automatic Sight Drip-feed Lubricator.



## Constructional Details of B.S.A. Motor Bicycles—Continued

**LUBRICATION** Lubrication of the engine is effected by a semi-automatic sight drip-feed lubricator fitted at the right-hand side of the tank. In regulating the oil to the engine, it is most important the rider should bear in mind that for sidecar work and hill climbing, a much larger quantity of oil should be given than for ordinary running. Full instructions on lubrication are given on pages 29 and 30, and riders are strongly advised to take particular notice of them.



The B.S.A. Cantilever Spring Fork. Pat. No. 1283/09.

**SILENCER** A very effective silencer is fitted, to which is connected a long extension pipe having a fish tail end. Under tests it has proved exceptionally efficient, showing very little back pressure. It is attached to the front of crank case and forms a platform on which the magneto is mounted.

**CARBURETTER** B.S.A. Variable Jet Semi-automatic Carburetter, with handlebar control, is fitted to all models. This is constructed with improved top feed, which effectually prevents flooding. Further particulars and illustrations are given on page 27.

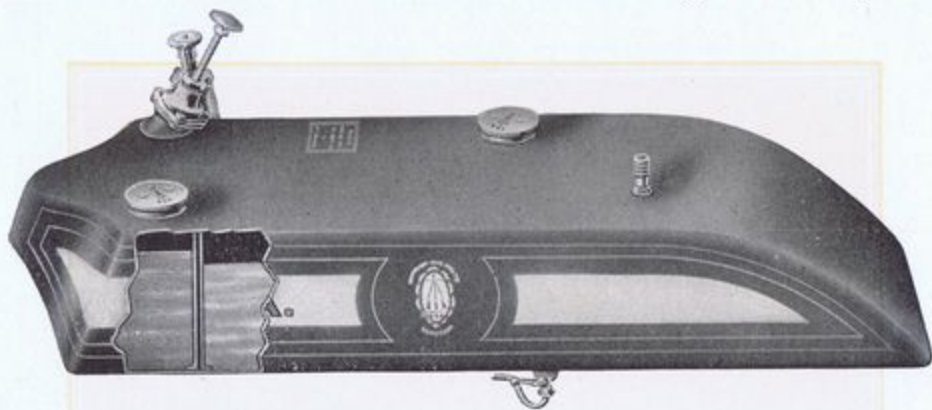
**SPRING FORK** Owing to the design and the large diameter springs which have been adopted in the B.S.A. Cantilever Spring Fork (Pat. No. 1283/09), practically all vibration and road shocks are absorbed. This fork has been subjected to very severe tests and has proved satisfactory under the most trying conditions. The springs are placed in such a position as not only to strengthen the head but to allow of easy access to all front parts.

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## Constructional Details of B.S.A. Motor Bicycles—Continued

**TANK** The Tank is very strongly constructed and has a capacity of  $1\frac{3}{4}$  gallons of petrol and  $2\frac{1}{2}$  pints of oil. It is provided with patent quick detachable oil and petrol fillers of large diameter; the caps being secured by means of bayonet joints and chains. The fitting of a compressed leather ring into the caps makes them thoroughly tight, and renders leakage impossible. The double partition as shown in illustration, effectually prevents any contact of the oil and petrol. The equipment of the tank consists of a petrol-tight screw-down valve, also a combined drain cock and priming tube for injecting spirit through the compression cock of engine or for emptying the tank. The oil pump of the sight drip-feed lubricator is rigidly built into the tank at a convenient angle for operating. The tank, which is adequately supported by three wide brackets brazed to the frame, is enamelled green and has fine gold lining and cream panels.



The B.S.A. Oil and Petrol Tank, showing double partition between the two sections.

**FRAME** In building the frame of the B.S.A. Motor Bicycle a special weldless steel tubing is used, making it exceptionally strong. Steel liners are brazed into those tubes liable to the greatest strains, and in addition to this the top tube of frame is butted at the head, giving still greater security against fracture.

A low riding position is obtained by curving the tube at the rear. Special high carbon steel is used in the construction of the chain stays, which are D and round sections. The back stay is D section. The dimensions are: Size of frame  $16\frac{1}{2}$ " ; height of saddle from ground 29" ; height from ground to centre of top rail  $29\frac{1}{2}$ " ; wheel base  $54\frac{1}{2}$ " ; height from centre of bottom bracket to ground  $10\frac{7}{8}$ ". The position of engine gives a high clearance for rough roads.

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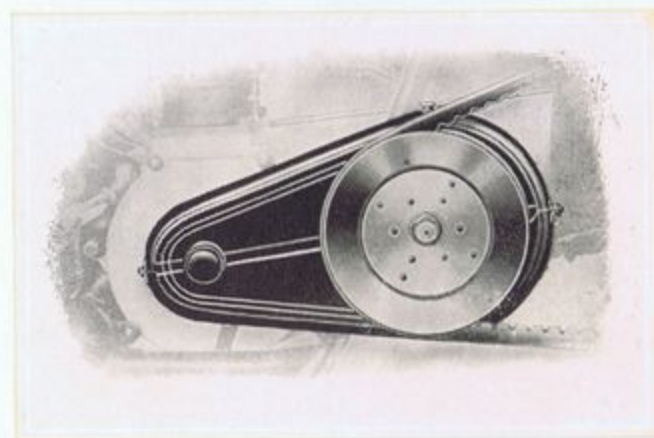


## Constructional Details of B.S.A. Motor Bicycles—Continued

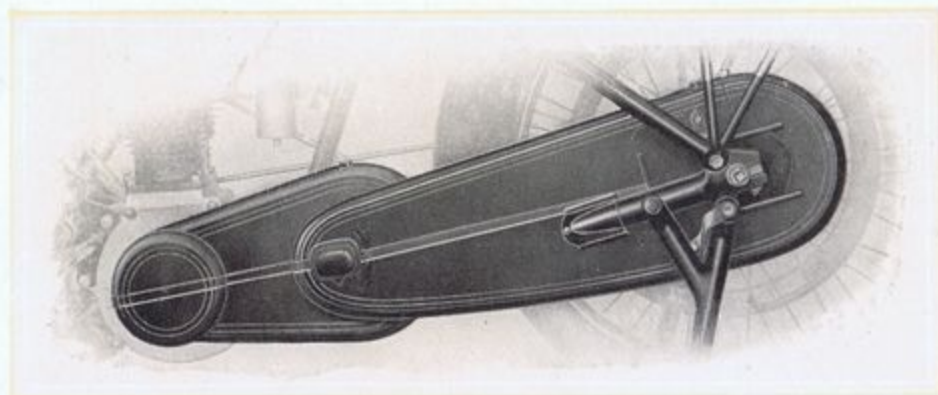
**FINISH** The frame, hubs and wheels are finished with four coats of best black enamel on a coating of rust-proof preparation. All bright parts are heavily plated, and the finish is of the well-known B.S.A. high standard of quality.

### PROTECTION OF CHAIN TRANSMISSION

Considerable improvements have been made in the construction and fixing of the gear cases. The importance of fully protecting the chains, particularly in bad weather, can scarcely be over-estimated, and reference to the illustrations will show that ample provision is made for this purpose in both three-speed models. The chains are completely enclosed in a neat metal gear case as a protection against mud, dust



Protection of Transmission Chain and Belt Model.



Protection of Transmission on Chain Drive Model.

and water. Quieter running is thus ensured and also greater freedom from chain troubles. Both chains are easily accessible for lubrication by means of oil caps fixed to the case and adjustment is extremely simple. The front chain is adjusted by slackening two nuts beneath the countershaft gear, and then sliding the latter backwards or forwards as required. The kick starter moves with the gear box to which it is attached, consequently it is in no way affected by this operation. For the adjustment of the rear chain or belt, the well-known B.S.A. eccentric plate chain adjusters are employed.



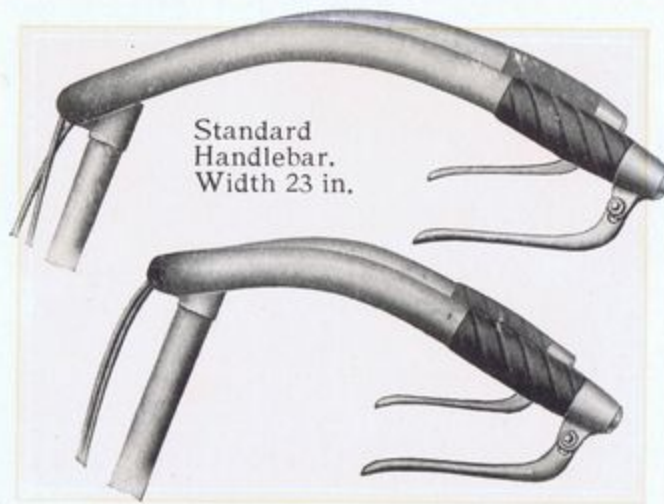
## Constructional Details of B.S.A. Motor Bicycles—Continued

### **BRAKES**

Two extremely powerful brakes are fitted to each model. The new pattern front wheel brake, fitted to Models H and K, operates on a special brake rim, and is applied by means of an inverted lever on right-hand side of handlebar. The front wheel can be removed without disturbing any part of the brake or its adjustments. The rear brake also acts on a special brake rim and is applied by a foot lever, which is placed just above the foot board on the left side. Being mounted on a separate bolt the foot lever is fully protected from accident should the foot board be damaged by a fall.

### **HANDLEBAR**

This is of the touring pattern, brought well back for comfort, and fitted with inverted levers. Semi-racing pattern handlebar is fitted to the Tourist Trophy Model, and this can also be supplied on the other Models if preferred.



T.T. Handlebar. Width 23 in.

### **FOOT RESTS**

These are provided on the Tourist Trophy Model, are of novel design, and adjustable both laterally and vertically. They can be fitted to the Three-speed Models in place of footboards if desired.

### **FOOT BOARDS**

On the Three-speed Models neat foot boards are fitted. These are strongly constructed and are adjustable. Every rider will appreciate this feature, as a correct position for the feet is absolutely essential for comfort.

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## Constructional Details of B.S.A. Motor Bicycles—Continued

**CARRIER** The tubular luggage carrier fitted to the B.S.A. Motor Bicycle combines great strength with lightness, and measures  $12\frac{1}{4}" \times 8\frac{1}{4}"$ . Two pannier tool bags, measuring  $9" \times 4\frac{1}{2}" \times 3"$ , are securely fixed into the frame work at the side of the carrier, and are fitted into light pressed steel cases which prevent their getting out of shape with use. This arrangement leaves the whole of the top of carrier available for luggage. All lugs and connections are made from steel forgings, and the carrier is attached to the back stays in such a way as not to interfere with the low position of the saddle.

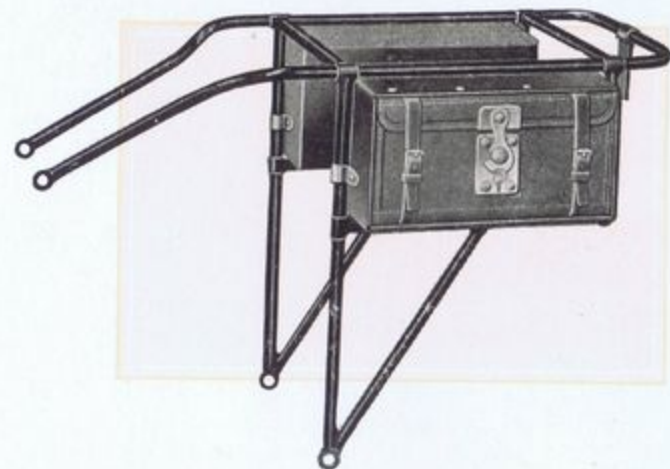
**STANDS** The rear stand is of the "kick-up" type and is of simple design, strong and perfectly rigid. It is fixed to bosses on the chain



The B.S.A. Front Stand.

stay ends, and supported by struts engaging with stops brazed to the chain stays. When not in use it is securely held to the rear mudguard by a spring clip. The front stand, which is of sound construction, folds under front mudguard out of the way when the machine is running and takes the place of the mudguard stays.

**MUDGUARDS** Special attention has been paid to the mud-guarding so that the rider is well protected in the worst weather. Each guard is substantially made in one piece. The rear mudguard is 4" wide and has a projection  $1\frac{1}{2}"$  wide on the driving side. It is fixed to the frame by clips, and to the carrier by means of a steel strip, on to which is screwed the number plate. This does away with the necessity for mudguard stays, and allows of easy access to the wheel for tyre repairs, etc. The new pattern front mudguard, which has been increased in width, is of curved section. Deep side wings run the full length of the mudguard



The B.S.A. Tubular Luggage Carrier.



## Constructional Details of B.S.A. Motor Bicycles—Continued

and effectually prevent mud from reaching the rider. Steel eye bolts riveted to the guard securely hold the front number plate, this being neatly curved to the guard. The splash attachment is of leather, and steel springs allow it to yield to any obstructions.

**TOOLS** A complete set of tools, fitted into a neat leather roll, is supplied with each machine.

**TYRES** Dunlop Heavy Tyres or Palmer Cord Non-skid, Studded or Ribbed Motor Cycle Tyres.

**SADDLE** Either Brooks B170, Lycett's, or XL-All Saddle can be fitted.

**WHEELS** Enamelled steel rims are fitted.

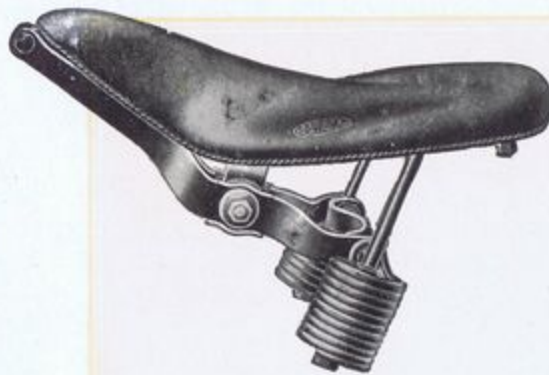
**BELT** Finest quality Dunlop, very strong and flexible.

**CHAINS**  $\frac{5}{8}'' \times \frac{1}{4}''$  chains are fitted to the Three-Speed Models.

**REPAIRS** It is most important that all Motor Bicycles and parts for repairs be sent to the B.S.A. Works, Redditch, and Sidecars to Birmingham, Carriage Paid.



B.S.A. Tool Roll with Set of Tools.



Brooks B170



Lycett's



XL-All Saddle

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# The B.S.A. 4 $\frac{1}{4}$ h.p. (557 c.c.) Motor Bicycle.

## Three-speed Countershaft Gear Model with Chain-cum-belt Drive.

### SPECIFICATION:

**ENGINE.** Single cylinder 4 $\frac{1}{4}$  h.p. (557 c.c.) 85×98 m/m bore and stroke, steel fly-wheels, main shaft mounted on ball-bearings, large interchangeable unbreakable valves, both mechanically operated, efficient silencer, valve guides and adjustable tappets, piston fitted with patent gudgeon pin (Pat. No. 21435/10); specially designed compression cock (Reg. No. 565410).

**CARBURETTER.** B.S.A. improved variable jet Carburetter with handlebar control is fitted.

**IGNITION.** High tension ball-bearing weatherproof Magneto, **with handlebar control**, and driven by adjustable chain in aluminium dust-proof case.

**FRAME.** Exceptionally strong, built of special weldless steel tubing throughout. Fitted with B.S.A. Cantilever Spring Fork (Pat. No. 1283/09). Powerful front brake operated by inverted lever from handlebar on brake rim. Rear brake acting direct on brake rim is applied by a foot lever placed on a separate bolt.

**WHEELS.** Extra strong, 26 in. × 2 $\frac{1}{2}$  in. Enamelled.

**TYRES.** 26 in. × 2 $\frac{1}{2}$  in. Dunlop heavy 3-ply tyres, or 26 in. × 2 $\frac{1}{2}$  in. Palmer cord, studded or ribbed.

**TANK.** Built for strength, with one longitudinal seam, supported by brackets brazed on to the frame; quickly detachable. Caps, unbreakable, secured with bayonet joint and chain. Equipped with **sight drip-feed lubricator**; priming tube and special screw-down petrol valve. Capacity for Petrol, 1 $\frac{1}{2}$  gallons; Oil, 2 $\frac{1}{2}$  pints.

**HUBS.** Watertight and dust-proof, easily adjusted. Front wheel fitted with new pattern hub.

**TRANSMISSION.** A high quality  $\frac{5}{8}$  in. ×  $\frac{1}{4}$  in. chain is fitted from engine to countershaft gear—effectively protected with gear case—and a Dunlop 1 in. belt over 7 $\frac{1}{2}$  in. diameter pulley to rear wheel. The engine is fitted with 15-teeth wheel (or to order) which gives three-speed gear ratios of approximately 5, 8, and 12·8. The engine is started by means of kick starter mounted on gear box.

**STANDS.** Back kick-up, fixed to solid boss on the chain stay end, and supported by a strut engaging with a stop brazed on side of chain stay. When not in use is securely fixed to rear mudguard by spring clip, also Front Stand of special design.

**FOOT BOARDS.** These are adjustable.

**CARRIER.** Strong and light, detachable, tubular 14 in. × 8 $\frac{1}{2}$  in.

**TOOL BAGS.** Two pannier tool bags 9 in. × 4 $\frac{1}{2}$  in. × 3 in. Securely fixed into sides of carrier. Complete set of tools in neat leather roll.

**MUDGUARDS.** Strong and wide, of plain section. Splash attachment is of leather with steel spring, which allows it to give to any obstacle. Extension on rear guard to cover belt rim. Side wings on front guard.

**SADDLE.** Brooks B170, with patent compound springs, XL-All. or Lycett's or to order.

**HANDLEBAR.** Touring, specially designed for comfort.

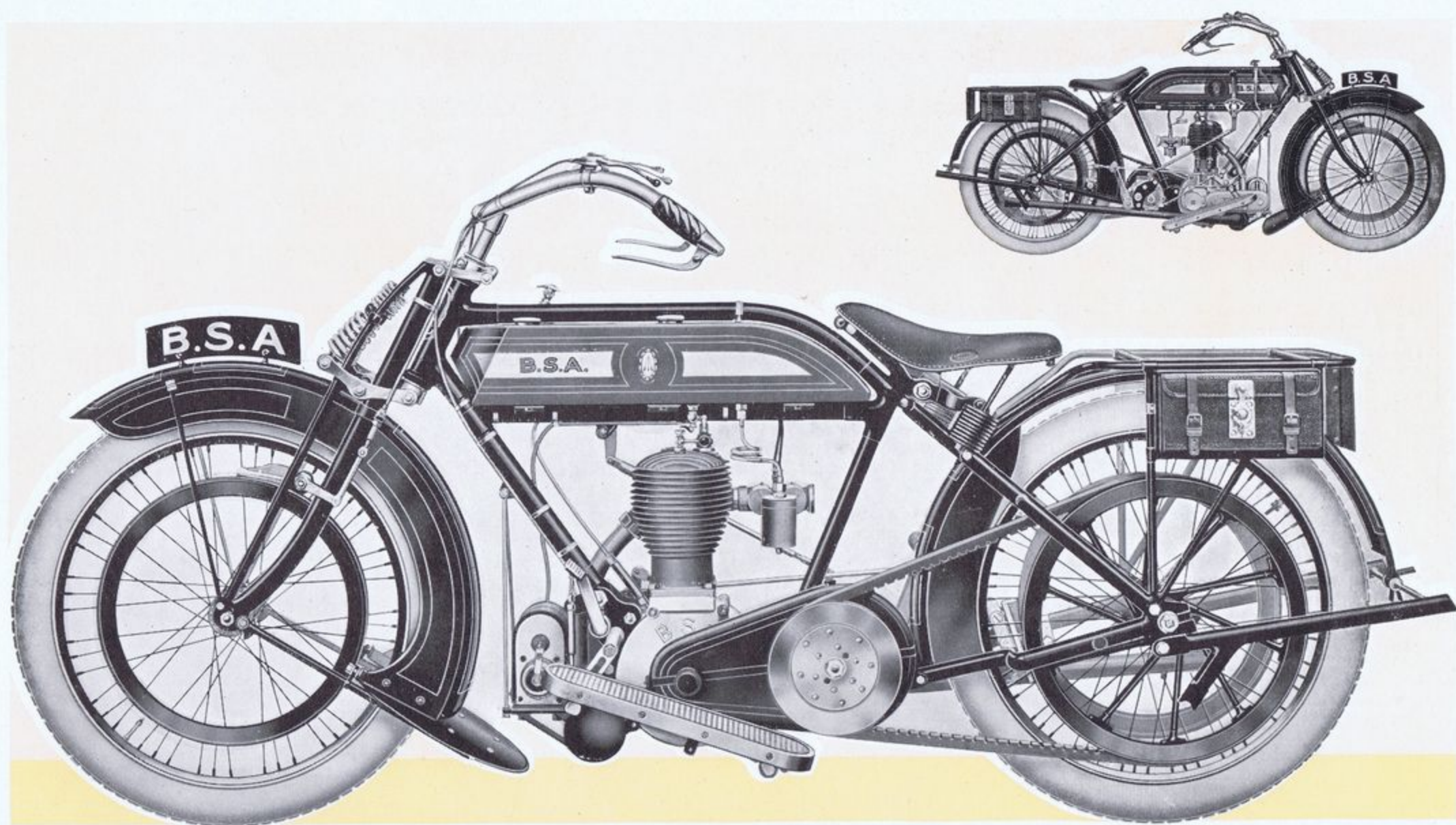
**FINISH.** Four coats of brilliant best black enamel on one coat of rust-proof preparation. Bright parts heavily plated, and the finish is of the well-known B.S.A. high standard of quality.

**Model K** With Three-speed Countershaft Gear, Chain-cum-belt Drive. To standard specification.

If fitted with Roman Rims, extra.

NOTE.—The ordinary force pump can be fitted instead of sight drip-feed lubricator, if desired.





**The B.S.A. Three-speed  $4\frac{1}{2}$  h.p. (557 c.c.) Motor Bicycle, with Chain-cum-belt Drive, Model "K"**  
The small illustration shows the valve side of this model.



# The B.S.A. 4 $\frac{1}{4}$ h.p. (557 c.c.) Motor Bicycle.

## Three-speed Countershaft Gear Model with Chain Drive.

### SPECIFICATION :

**ENGINE.** Single cylinder 4 $\frac{1}{4}$  h.p. (557 c.c.) 85×98 m/m bore and stroke, steel fly-wheels, main shaft mounted on ball-bearings, large interchangeable unbreakable valves, both mechanically operated, efficient silencer, valve guides and adjustable tappets, piston fitted with patent gudgeon pin (Pat. No. 21435/10); specially designed compression cock (Regd. No. 565410).

**CARBURETTER.** B.S.A. improved variable Jet Carburetter with handlebar control is fitted.

**IGNITION.** High tension ball-bearing weatherproof Magneto, **with handlebar control**, and driven by adjustable chain in aluminium dustproof case.

**FRAME.** Exceptionally strong, built of special weldless steel tubing throughout. Fitted with B.S.A. Cantilever Spring Fork (Pat. No. 1283/09). Powerful front brake operated by inverted lever from handlebar on brake rim. Rear brake acting direct on brake rim is applied by a foot lever placed on a separate bolt.

**WHEELS.** Extra strong, 26 in.×2 $\frac{1}{2}$  in. Enamelled.

**TYRES.** Dunlop 26 in.×2 $\frac{1}{2}$  in. heavy 4-ply tyre on back and Dunlop 26 in.×2 $\frac{1}{2}$  in. heavy 3-ply on front, or 26 in.×2 $\frac{1}{2}$  in. Palmer cord, studded or ribbed tyres, with beaded edges.

**TANK.** Built for strength, with one longitudinal seam, supported by brackets brazed on to the frame; quickly detachable. Caps, unbreakable, secured with bayonet joint and chain. Equipped with **sight drip-feed lubricator**; priming tube and special screw-down petrol valve. Capacity for Petrol, 1 $\frac{3}{4}$  gallons; Oil, 2 $\frac{1}{2}$  pints.

**HUBS.** Watertight and dust-proof, easily adjusted. Front wheel fitted with new pattern hub.

**TRANSMISSION.** The chains  $\frac{5}{8}$  in.× $\frac{1}{4}$  in. are effectively protected with gear casing, and the 3-speed countershaft gear is fitted with 15-teeth wheel (or to order), giving gear ratios of approximately 5·4, 8·7 and 13·8. The drive is transmitted through a specially designed spring wheel fitted to the engine shaft, which absorbs all shocks usually present with chain driven machines. The engine is started by means of kick starter mounted on gear box.

**STANDS.** Back kick-up, fitted to solid boss on the chain stay end, and supported by a strut engaging with a stop brazed on side of chain stay. When not in use is securely fixed to rear mudguard by spring clip, also Front Stand of special design.

**FOOT BOARDS.** These are adjustable.

**CARRIER.** Strong and light, detachable, tubular 14 in.×8 $\frac{1}{2}$  in.

**TOOL BAGS.** Two pannier tool bags 9 in.×4 $\frac{1}{2}$  in.×3 in. Securely fixed into sides of carrier. Complete set of tools in neat leather roll.

**MUDGUARDS.** Strong and wide, of plain section. Splash attachment is of leather with steel spring, which allows it to give to any obstacle. Side wings on front guard.

**SADDLE.** Brooks B 170, with patent compound springs. XL-All, or Lycett's, or to order.

**HANDLEBAR.** Touring, specially designed for comfort.

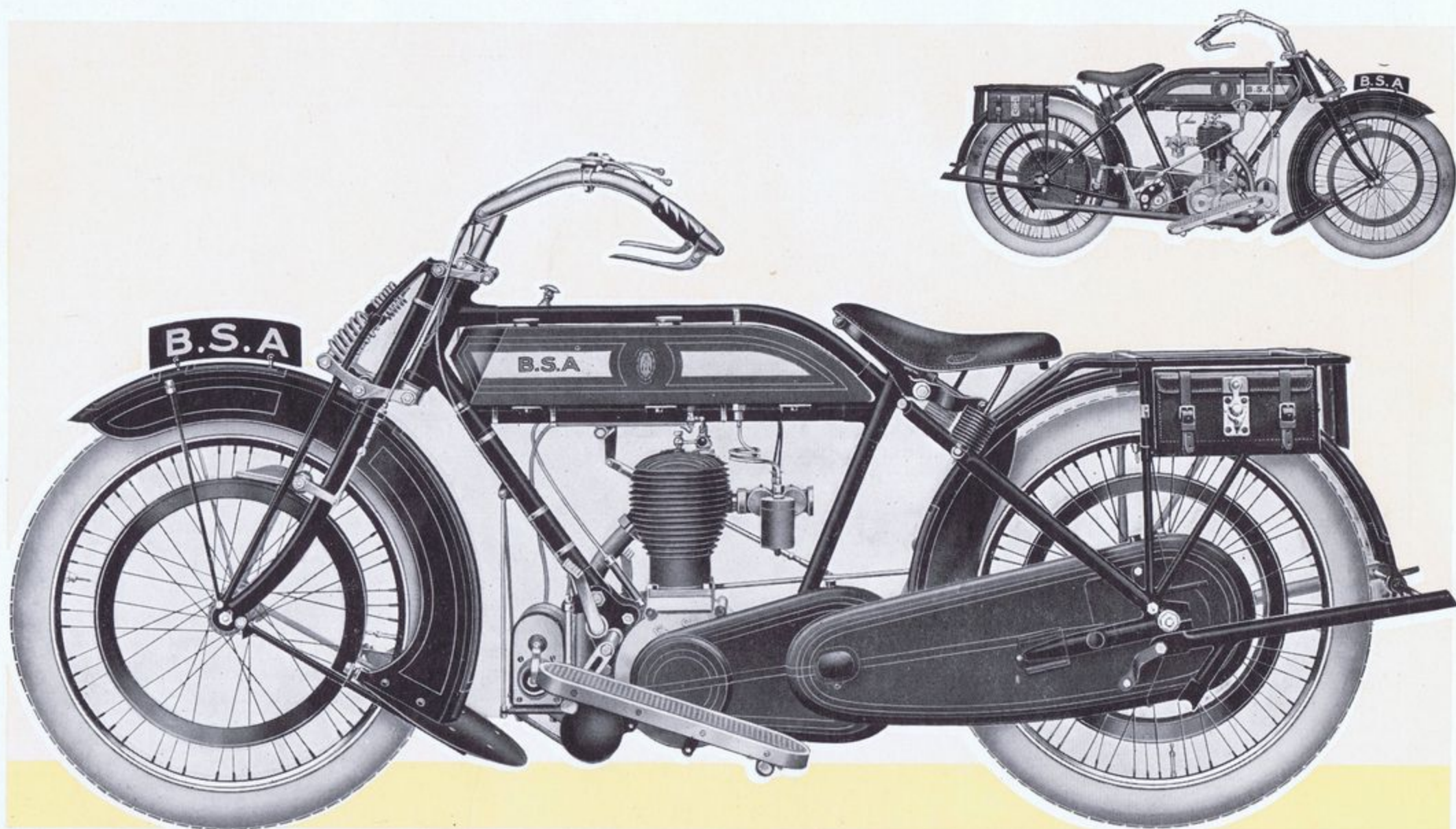
**FINISH.** Four coats of brilliant best black enamel on one coat of rust-proof preparation. Bright parts heavily plated, and the finish is of the well-known B.S.A. high standard of quality.

**Model H** With B.S.A. Three-speed Countershaft Gear and Chain Drive. To standard specification.

If fitted with Roman Rims, extra.

NOTE.—The ordinary force pump can be fitted instead of sight drip-feed lubricator, if desired





**The B.S.A. Three-speed  $4\frac{1}{4}$  h.p. (557 c.c.) Motor Bicycle, with Chain Drive - Model "H"**  
The small illustration shows the valve side of this model.



# The B.S.A. 3½ h.p. Motor Bicycle.

## Tourist Trophy Model.

### SPECIFICATION :

**ENGINE.** Single cylinder 3½ h.p., 85×88 m/m bore and stroke, steel fly-wheels, main shaft mounted on ball-bearings, large interchangeable unbreakable valves, both mechanically operated, efficient silencer, valve guides and adjustable tappets, dome-shaped piston, with patent gudgeon pin (Pat. No. 21435/10); specially designed compression cock (Regd. No. 565410).

**CARBURETTER.** B.S.A. improved variable jet Carburetter with handlebar control is fitted.

**IGNITION.** High tension ball-bearing weatherproof Magneto, driven by adjustable chain in aluminium dust-proof case, and **with handlebar control.**

**FRAME.** Exceptionally strong, built of special weldless steel tubing throughout. Fitted with B.S.A. Double Cantilever Spring Fork (Pat. No. 1283/09). Powerful front brake operated by inverted lever from handlebar. Rear brake acting direct on belt rim is applied by a foot lever placed on a separate bolt just above the rear foot rest.

**WHEELS.** Extra strong, 26 in.×2¼ in. Heavily plated on steel.

**TYRES.** Dunlop heavy 3-ply or 26 in.×2¼ in. Palmer cord, wired-on studded or ribbed pattern tyres.

**TANK.** Built for strength, with one longitudinal seam, supported by brackets brazed on to the frame tube; quickly detachable. Caps, unbreakable, secured with bayonet joint and chain. Equipped with **sight drip-feed lubricator**; priming tube and special screw-down petrol valve. Capacity for Petrol 1½ gallons; Oil, 1 quart.

**HUBS.** Watertight and dust-proof, easily adjusted.

**TRANSMISSION.** ½ in. Dunlop Belt, B.S.A. Variable Pulley, Ratios between 4¼ to 1 and 5¼ to 1. Belt rim securely fixed with short spokes and clips to the wheel.

**STANDS.** Back kick-up, fixed to solid boss on the chain stay end, and supported by a strut engaging with a stop brazed on side of chain stay. When not in use is securely fixed to rear mudguard by spring clip, also Front Stand of special design.

**FOOT RESTS.** Front adjustable laterally and vertically, and fitted with substantial rubbers.

**CARRIER.** Strong and light, detachable, tubular, 14 in.×8¼ in.

**TOOL BAGS.** Two pannier tool bags 9 in.×4½ in.×3 in. Securely fixed into sides of carrier. Complete set of tools in neat leather roll.

**MUDGUARDS.** Strong and wide, of plain section. Splash attachment is of leather with steel spring, which allows it to give to any obstacle. Extension on rear guard to cover belt rim. Side wings on front guard.

**SADDLE.** Brooks B170, with patent compound springs, XL-All, or Lycett's, or to order.

**HANDLEBAR.** Semi-racing, specially designed for speed.

**FINISH.** Four coats of brilliant best black enamel on one coat of rust-proof preparation. Bright parts heavily plated, and the finish is of the well-known B.S.A. high standard of quality.

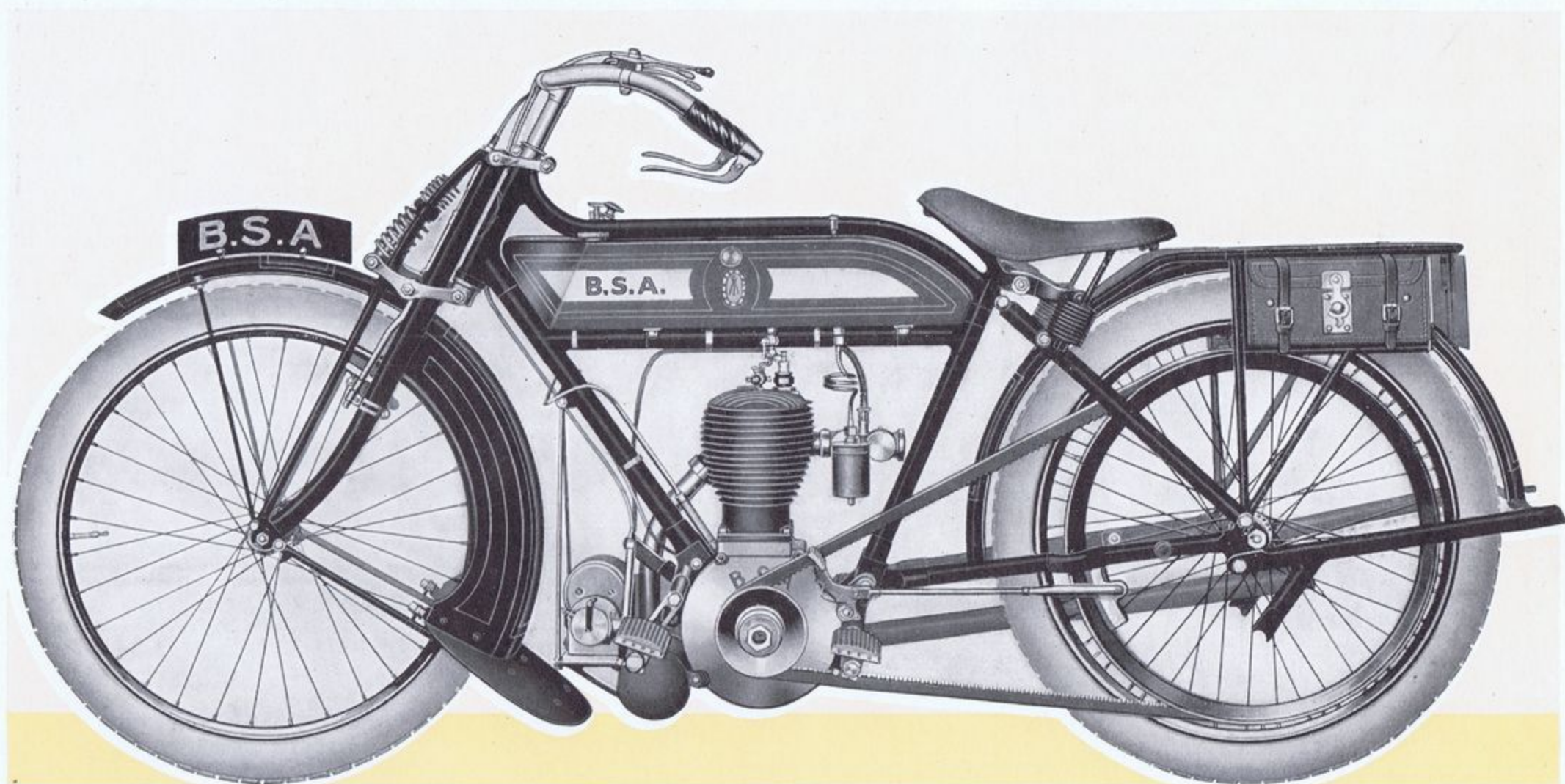
**Model D TOURIST TROPHY**, without pedalling gear. To standard specification.

If fitted with Roman Rims, extra.

**NOTE.**—This machine cannot be supplied with larger than 2½ in. tyres and ½ in. belt. The ordinary force pump can be fitted instead of sight drip-feed lubricator, if desired.

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The B.S.A. Tourist Trophy 3 1/2 h.p. Motor Bicycle - - Model "D"

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## The B.S.A. Sidecar. Model No. 2.

An important feature of this Sidecar is the novel method of springing, which effectually prevents road shocks. The body is suspended at the rear upon a transverse member, to which is attached two plungers which work within cylinders (see illustration). Helical springs are incorporated between the plungers and cylinders to control their relative movements. These plungers are attached at their lower extremity to the body, which is in constant suspension, and can only move in a vertical direction; all side movement being eliminated. The attachment at the foot of body is by means of leaf springs. The chassis is strengthened on the near or cycle side by an additional girder tube running beneath the whole length of the body.

Attachment to the motor bicycle is effected at four points. The lug of the front connection embraces both the near side horizontal tube and the additional girder tube previously mentioned. The other connections are easily detachable. The chassis is enamelled black with plated fittings, and the wheel is fitted with steel rim, rustless spokes, and 26" x 2½" Dunlop Heavy 3-ply, or 26" x 2½" Palmer Cord Tyre. The mudguard is of an improved pattern, with side splash running the full length, and a substantial lamp bracket is also provided. A feature of the new model is the introduction of a wheel stand, which folds away when not in use.

The coach-built Body is designed on graceful lines, and is coach-finished in a rich shade of green. It has a spring seat and back, and is splendidly upholstered. The Sidecar is fitted with a good quality waterproof apron and plated studs.

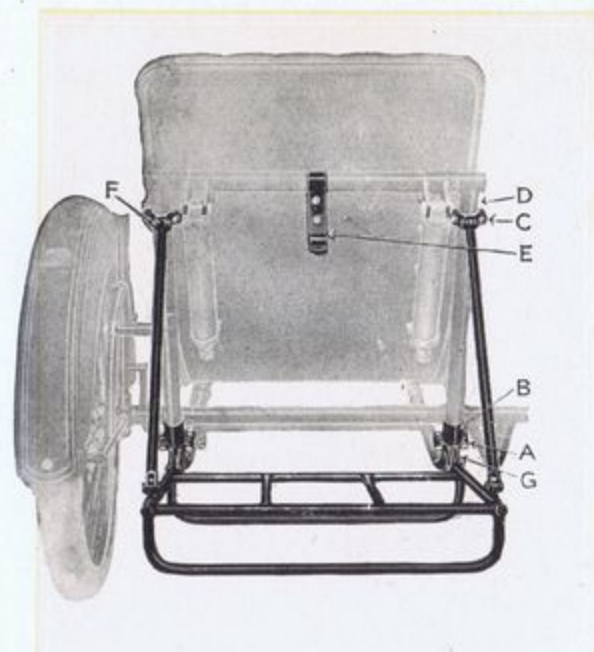


Illustration showing method of attaching Luggage Grid.

### Instructions for Attaching Luggage Grid.

First fix clips A to main tube (underneath and close up against lug B), then fix Clip C to butt up against lug D, next fix Clip E in the centre of top rail. This spring clip is provided to secure the carrier when not in use.

To fold the carrier up, remove screws F, allowing the stays to fall and engage in slot G, then lift up the carrier and secure with spring clip E.

Care should be taken to see that all nuts are securely tightened when the carrier is in position.

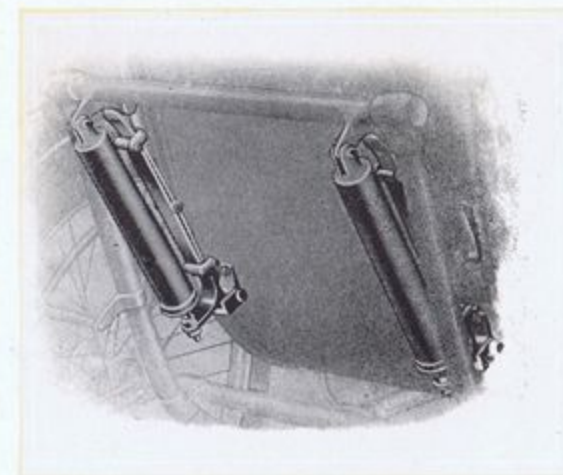
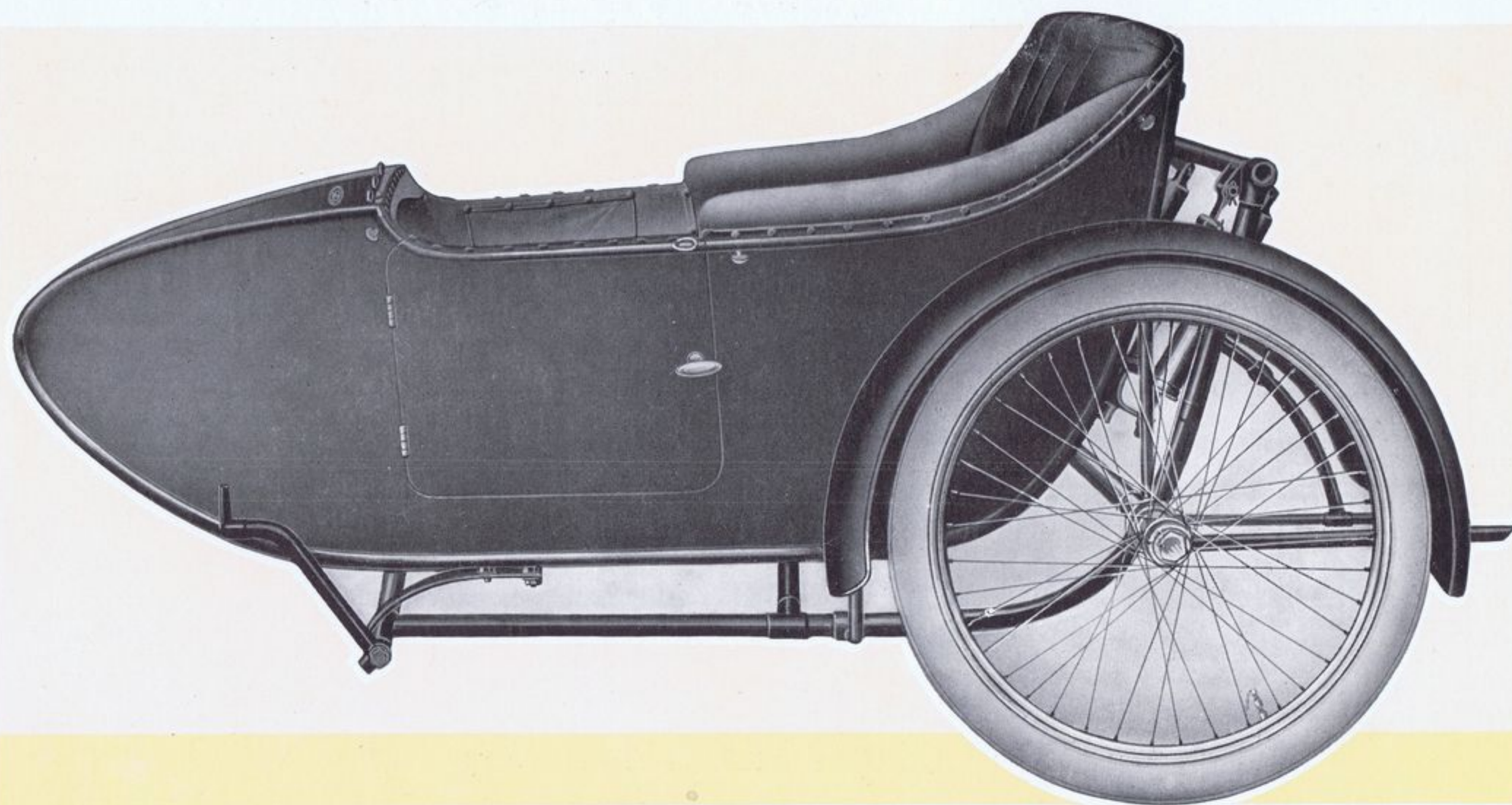


Illustration showing Springs at rear of B.S.A. Sidecar.

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**The B.S.A. Sidecar - - Model No. 2.**

**DIMENSIONS**—Length of Sidecar, 6ft. 3in. ; width of Motor Bicycle and Sidecar, 4ft. 9in. over all.



## The B.S.A. Delivery Side-Carrier.

The B.S.A. Delivery Side-Carrier worthily upholds the long-established B.S.A. reputation for quality. Every detail in design and construction has been carried out with B.S.A. thoroughness, and this latest model can be selected with the utmost confidence.

The chassis, which is strongly constructed of best cold-drawn weldless steel tubing, and is built sufficiently high to give plenty of clearance from the ground, is effectively attached by four point connections to the motor bicycle. The wheel contains a hub of large dimensions, having ball races of proportionate size. It is fitted with either Dunlop 3-ply or Palmer Cord 26"  $\times$  2½" Tyre. The mudguard is extra wide; it has a deep side wing and is firmly held by detachable stays. A serviceable wheel stand is provided which when not in use, folds under mudguard stay, and is securely held by a spring clip.

The very capacious body, which is coach built and suspended by four "Cee" springs, is made with well-seasoned wood. The frame is of ash and the panels of three-ply board. The lid is canvassed, lead coated, and so constructed as to be perfectly weatherproof.

The whole turnout is smart in appearance, and its finish is of an extremely serviceable character. The body is highly finished in dark green to match the B.S.A. tank, while the chassis wheel and hub are enamelled black.

The Dimensions of the Carrier Body are as follows:—

		Outside.		Inside.
Length	...	43"	...	41"
Width	...	22"	...	20"
Height	...	23"	...	21"

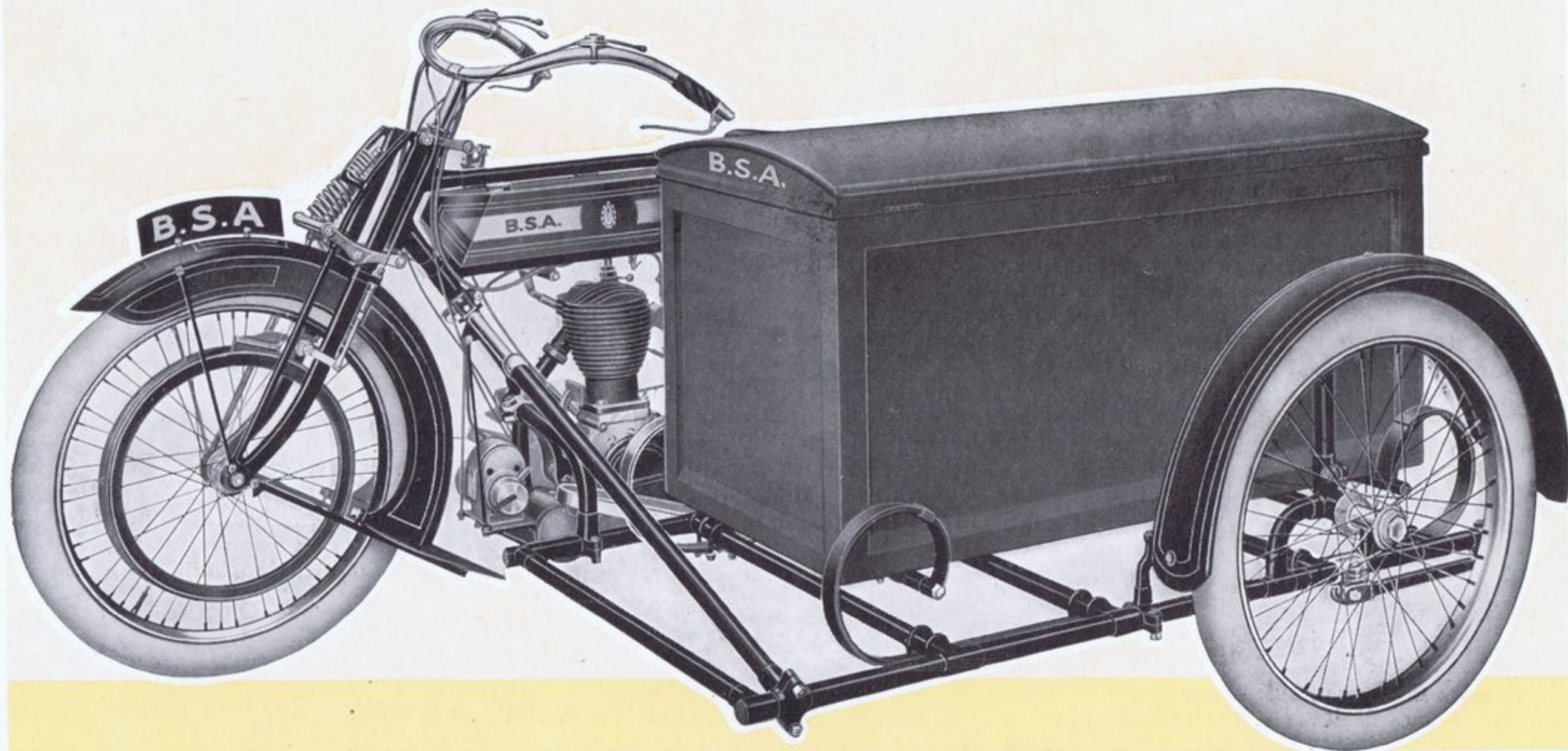
**Model No. 3 Side-Carrier.** To above specification.

Lettering, if required, extra.

Special quotations can be given for this Side-Carrier fitted with door at back and also with shelves.

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The B.S.A. Delivery Side-Carrier.  
[Barnstormers.co.nz](http://Barnstormers.co.nz)



# The B.S.A. Countershaft Three-speed and Free Engine Gear (Pat. 13574/13)

The success of the B.S.A. Motor Bicycle as a Solo and Sidecar machine is in no small measure due to the B.S.A. Countershaft Three-speed Gear. Conclusive evidence of the exceptional reliability and efficiency of this gear was provided by the 1914 International Tourist Trophy Race, when the six B.S.A. machines all fitted with B.S.A. Countershaft Three-speed Gear completed the course. The B.S.A. Gear is attached to the bridge tubes of the chain stays. The design embodies several novel and distinctive ideas, among which may be mentioned the method employed for sliding the dog-clutches, and the placing of the multiple plate clutch inside the oil retaining box, thus ensuring its effective lubrication. Ball-bearings are fitted to both shafts, the one at the driving end of main shaft being exceptionally large in diameter, long wearing qualities and elimination of friction are ensured. The gears are changed by means of a hand lever working in a gate quadrant on the right hand side of the tank, an operation which will be found particularly easy. **There is no need to slip the clutch when changing gear.** The high or normal gear is in operation when the lever is pulled as far as possible towards the rider, and the low gear when the lever is pushed right forward. The middle gear position is of course midway between the high and low. To change down it is only necessary to push the lever smartly forward to the desired position, **but when changing up it is imperative that the speed of the engine should be reduced by lifting the exhaust valve momentarily.** The clutch is extraordinarily sweet and efficient, taking up the load with perfect smoothness, and when right home it cannot possibly slip. It consists of alternate steel and phosphor-bronze plates, sufficient in number to ensure long life, and yet to be reasonably free when the pressure is released. The control of the clutch is effected by means of a conveniently placed foot lever on the right hand side, and the free engine position is obtained on either gear by releasing this clutch. None of the spring pressure is taken by the gear box, it being so designed that all stress is self-contained on the main shaft. A kick starting crank is fitted to the right-hand side of the gear box, a neat cover being arranged to protect this and the gear changing mechanism.

For the purpose of adjusting the gears, etc., an inspection cover is provided on the top. Adjustment instructions will be found on page 26.

## Description of the Three-speed Gear (See Figs. 1 and 2)

As will be seen on reference to the accompanying illustrations, the B.S.A. three-speed gear box is of the countershaft type and is of particularly neat design. The changing of gears is effected by sliding dog-clutches A and B, and the method by which the clutches are given the necessary movement constitutes one of the principal features.

On a shaft C, which is capable of being rotated by means of the pinion and quadrant connected to the operating lever at side of tank, are mounted two operating forks, D and E, the arms of which rest in the grooves of the dog-clutches A and B. Helical cam grooves are formed in these forks, engaging with studs solidly fixed in the shaft C.

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## Description of Three-speed Gear—Continued

When, by means of the operating mechanism, shaft C is revolved, the studs F cause the forks to slide along it, and thus impart the necessary movement to the dogs A and B, which slide on hexagons formed on the shaft G, and the clutch extension H.

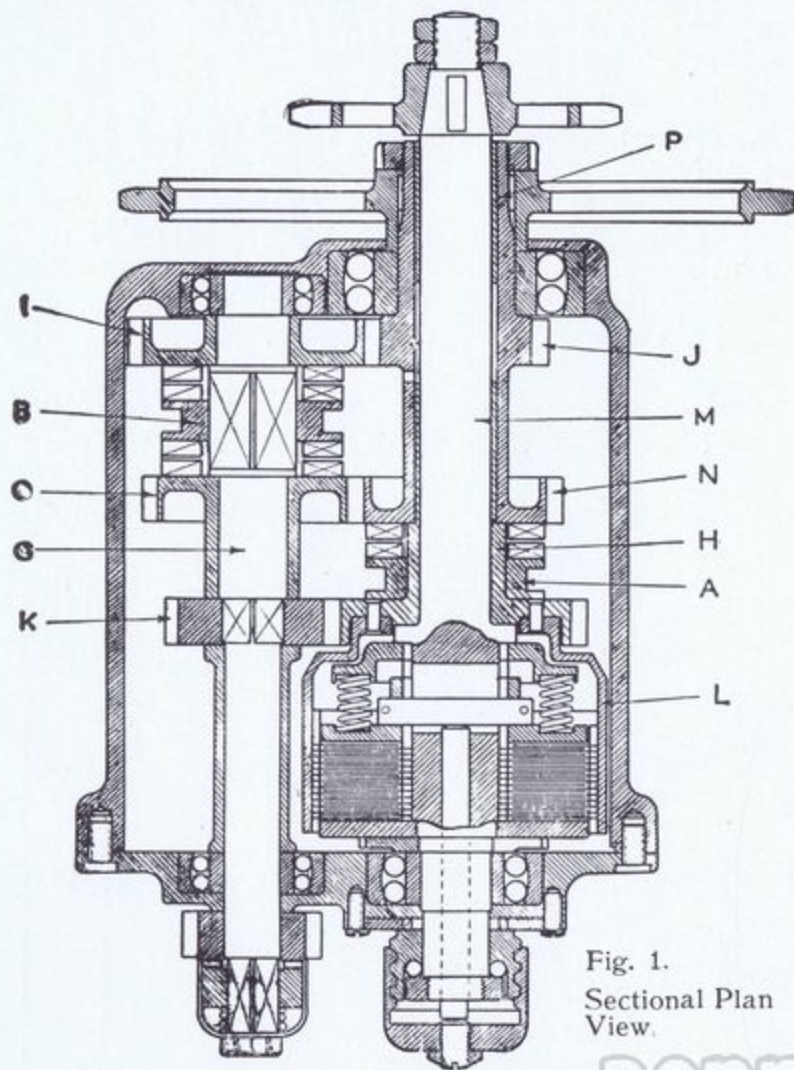


Fig. 1.  
Sectional Plan  
View.

When the **low gear** is in operation, the clutch B is drawn into engagement with the pinion I, thereby coupling I to the shaft G. The drive is transmitted through pinions J and I to shaft G, thence through the fixed pinion K and clutch L to driven shaft M. Clutch A is held out of engagement with pinion N, as shown on drawing.

The **Second Gear** is obtained by withdrawing clutch B from pinion I and coupling it to pinion O. The motion is then transmitted to the shaft through the pinions N and O, and as before through K to the clutch and driven shaft. A is still kept out of engagement with N.

The **High**, or normal gear, is effected by withdrawing clutch B from pinion O, and keeping it inoperative in the midway position, as shown on drawing. Clutch A is then drawn into engagement with pinion N, thus coupling driving sleeve direct to clutch L and thence to driven shaft M.

The engine may be started readily on the middle or low gears, by means of the kick-starter crank. This is mounted on the cover of the gear box, thus requiring no separate adjustment when tightening chains.

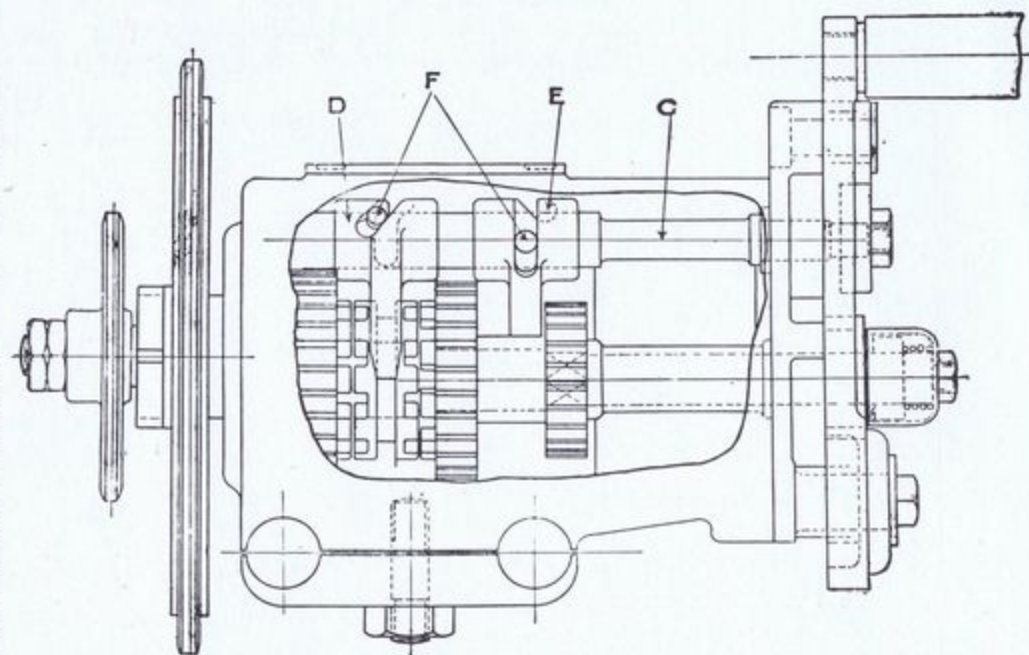


Fig. 2. End View.

Clutch A is held out of engagement with pinion N, as shown on drawing.



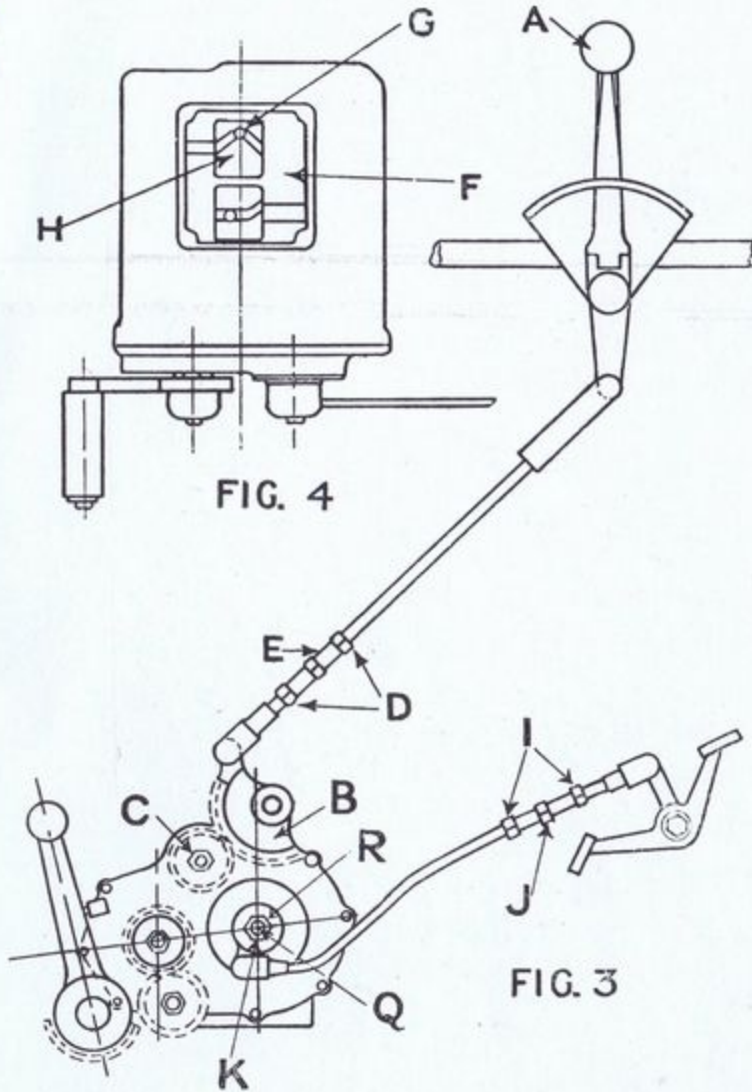
## Instructions for Adjustment (See Figs. 3 and 4)

After altering the position of gear box on frame in order to adjust the driving chain, it will be necessary to adjust the gear and clutch controls. To adjust gear control remove the inspection cover at F, when the operating shaft and cams will be exposed to view. Place lever A in middle gear position, and slacken nuts D from sleeve E, bearing in mind that the lower one has a left-hand thread. Turn sleeve E either in one direction or the other until the pin G is exactly at the top of cam H, as shown. Then tighten nuts D and replace cover. The clutch control may be adjusted by means of the sleeve on the control rod. This rod should be set in such manner, that when the clutch is in a slight amount of back-lash can be felt at the foot-lever.

## Lubrication and Care of the Gear

The efficiency and wearing qualities of the gear will be greatly increased if the following instructions are carefully adhered to:

1. The gear box must not be filled with grease. Use only B.S.A. Special Lubricating Oil (not thick engine oil), injecting same liberally whilst the engine is running, with the high gear in and the clutch out.
2. After every 1,000 miles, thoroughly flush with paraffin. The engine should be running with the high gear in and clutch out as before. Carefully drain by means of the plug provided, and re-lubricate.
3. When leaving the machine after use always let clutch in to relieve spring pressure.
4. Do not slip clutch unnecessarily. Change to lower gear in preference.
5. It is necessary to occasionally test the adjustment of Clutch Control, especially after the first few miles riding. A small screw Q is provided for this purpose in the control nut R. This should be adjusted to allow a slight back-lash to be felt when the clutch is in, otherwise the full spring pressure will not be operating on the plates.



## THREE-SPEED GEAR RATIOS

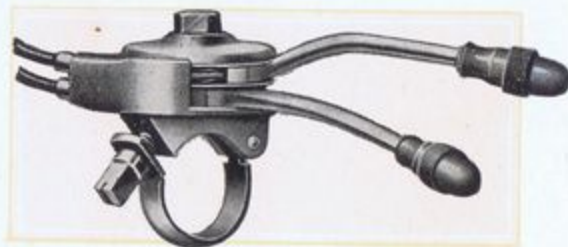
CHAIN DRIVE MODEL				Gear Ratios		
Engine Shaft	Gear Box		Back Hub	High	Middle	Low
Teeth	Teeth	Teeth	Teeth			
15	35	14	35	5'8	9'3	14'8
15	35	15	35	5'4	8'7	13'8
15	35	16	35	5'1	8'1	13
Variations to be made by changing Gear Sprocket.						

CHAIN-CUM-BELT DRIVE MODEL				Gear Ratios		
Engine Shaft	Gear Box		Back Hub	High	Middle	Low
Teeth	Teeth	Pulley	Rim			
14	35	7 $\frac{1}{2}$ in.	16 $\frac{1}{2}$ in.	5'3	8'5	13'5
15	35	7 $\frac{1}{2}$ in.	16 $\frac{1}{2}$ in.	5	8	12'8
16	35	7 $\frac{1}{2}$ in.	16 $\frac{1}{2}$ in.	4'7	7'5	12
Variations to be made by changing Engine Sprocket.						

Variations to be made by changing Gear Sprocket.

Variations to be made by changing Engine Sprocket.





## The B.S.A. Semi-Automatic Variable Jet Carburettor.

(Patent No. 25124/11)

No tickler for flooding the Carburettor has been provided, as this operation is entirely unnecessary. In order that the best possible results may be obtained, the user is recommended to carefully study the following instructions:

**To start the engine**, assuming the jet is closed, turn the milled head of the jet adjuster from one-half to three-quarters of a turn to the left for solo work, and from three-quarters to one full turn for sidecar. Then open the air lever slightly and the throttle one-third. After the first explosion open air lever immediately until a good mixture is obtained.

**Always keep the jet adjusted as small as possible**, consistent with the power required, as this will ensure economical running and a cooler engine.

On encountering a steep hill the jet can be opened out, if necessary, quite easily from the saddle, and closed to the normal position again after the climb.

**If full power** and acceleration are required at once, as in hill climbing or racing, and the jet is fully opened (*i.e.*, about two complete turns), the air lever will then require to be opened more at starting, to ensure the mixture not being too rich.

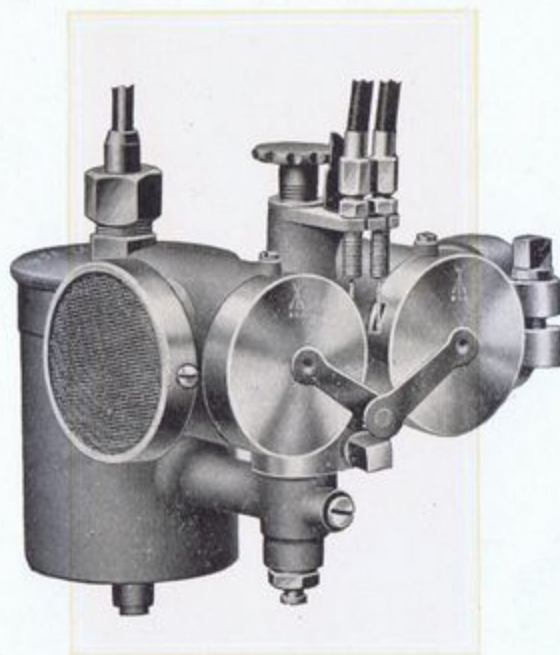
**Always bear in mind** that any alteration to the size of the jet is, in effect, readjusting the carburettor, and consequently the relative running positions of the air and throttle levers.

**To obtain slow running** it is only necessary to open the jet about one-quarter of a turn. If the throttle be then almost closed, with air set to suit, the engine will just tick over and give very slow running.

When riding, say at one-quarter throttle, though it may be possible to run with air lever wide open, full air is not really being taken, but only as much as can pass through the throttle aperture. Consequently, if the throttle should be opened wide, a choking of the engine will be immediately experienced, and if air lever be not corrected the engine will stop.

It will save misunderstanding if the rider will remember that really the throttle valve controls the amount of air entering the engine, and that under normal conditions the correct position for the air lever will be found to be in the neighbourhood of the throttle lever.

It should also be remembered that the more air that is allowed to pass over the jet, the more petrol will be vaporized, which means increase of power.



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## Care of the Magneto.

This system of high tension ignition produces in the armature winding, without the use of an induction coil, a high tension current which jumps across the points of the sparking plug in the form of an intense arc-like spark.

**Timing and setting of the Magneto.** By means of the timing lever it is possible to advance or retard the interruption of the primary circuit within certain limits, causing the spark to pass across the points of the plug early or late as required, thus controlling the time of the ignition. The motor can be started easier by partially advancing the ignition.

**Method of detecting faults.** Should any irregularity in the ignition occur, the following method should be adopted to ascertain the reason of the fault. The conducting wire should first be detached from the magneto and a fresh wire put into the carbon holder and brought into such a position as to leave a distance of one millimetre between its end and the magneto. Set the timing lever to position of full advance, and rotate the magneto by pedalling the machine. If a powerful spark passes regularly between the magneto and the end of the wire, it is clear that the magneto is in working order. The fault must then be looked for in the cable or sparking plug. The cable should be attached again to the magneto and the sparking plug tested, and if necessary, replaced by a fresh one. The wire should also be tested, and care should be taken that the terminal on the end of cable does not come in contact with any portion of the magneto or engine. If sparking does not occur between the wire and the magneto as the machine is rotated, the spring should be turned aside and the dust cover removed to see whether the bell crank lever is operating properly. The distance between the platinum points should be  $\frac{1}{2}$  m/m. If this is not correct, adjust suitably. If this is in order, unfasten screw, remove the contact breaker disc and examine platinum points. These, if necessary, should be cleaned with a little petrol to remove any oil or dirt, and if the surfaces are not even they may be treated with a very fine file. If these tests fail to locate the fault, it may be assumed that some internal part of the magneto is out of order, and it should be detached from the machine and returned to the works.

**Care and Maintenance.** The armature is fitted with ball bearings, which are filled with a special grease; this grease will last for at least a year, or 5,000 miles running. All other parts of the magneto require no lubrication, especially the contact breaker, which is designed to work without oil. It is therefore necessary to prevent any oil from getting on to the contact breaker and its platinum points. Complete dismantling of the magneto is, however, not recommended, as unless the work is done by a mechanic thoroughly used to magneto construction, considerable damage is likely to be caused.

*See "Helpful Hints" Booklet for instructions to re-set Magneto Timing.*

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## Hints on Riding a B.S.A. Motor Bicycle

After receiving the machine, it will be well to master a few details before attempting to take it out on the road. Place the bicycle on the stand, unscrew the filler cap nearest the saddle and fill the petrol tank. (A large funnel, fitted with a fine gauze, should be used, so as to prevent foreign matter entering the tank). Fill up the oil compartment, which is situated in the fore part of the tank, using B.S.A. Specially Prepared Cylinder Oil, which will not carbonise, thicken, or gum up the rings or valves. When taking a three-speed model out for the first time, inject about a third of a pint of thin lubricating oil into the countershaft three-speed gear box, through the plug provided, and see that this quantity of oil is ALWAYS maintained in the box.

The next step is to lubricate the engine. Proceed as follows:—Open needle valve of sight feed a few turns, and push down the pump plunger smartly until it remains down. The barrel is then charged and oil flows through the sight feed. When the pump is empty, repeat this operation four more times. The engine will then be sufficiently charged for starting, and the drip may be set at the desired flow by adjustment of the regulating valve.

Turn the petrol on by screwing DOWN the knurled knob on top of the tank. Now, assuming the jet of carburetter is closed, turn the milled head of jet adjuster about three-quarters of a turn to the left. This will give a jet opening suitable for average running. Open throttle about one-third, with air lever slightly open; adjust lever positions to suit mixture. (Control levers open from left to right.)

**Note.**—It will save misunderstanding if the rider will remember that really the throttle valve controls the amount of air entering the engine, and that under normal conditions the correct position

for the air lever will be found to be in the neighbourhood of the throttle lever.

Prime the cylinder with a little petrol by means of the small primer tube and tap fitted underneath the tank. Raise the valve lifter, and give the engine a few rotations with the kick starter. This is only necessary when the engine is cold, the few drops of petrol assisting to free the piston in the cylinder, which makes starting easier.

The bicycle being still on the stand, the rider may now mount and start the engine, having first assured himself that the clutch is disengaged, and that the gear is in the LOW position, that is, the lever on the right-hand side of the tank should be at the end of the gate quadrant furthest from the rider. If the gear should happen to be in the top or middle position, raise the exhaust valve lifter, revolve the engine by means of the kick starter, and at the same time push the control lever into low gear. **NEVER ATTEMPT TO CHANGE THE GEAR WHILE THE ENGINE IS STATIONARY.**

Advance magneto lever about two-thirds (lever "advances" from left to right). Work kick starter pedal until the compression is felt. Then return the pedal to the top of the stroke. Raise the exhaust valve by means of the lever on left-hand side of handlebar; give the kick starter a vigorous push with the foot, and at the same time drop the exhaust lever. Immediately the first explosion occurs, open out the air lever and regulate the mixture.

It should be noted that the positions given above for the air throttle and spark levers are approximate. A rider can only ascertain by experience the lever positions which enable him to start his own particular machine most easily.



## Hints on Riding a B.S.A. Motor Bicycle—Continued

Let the engine run for a minute or two on the stand, but do not "race it." Meanwhile, notice the results attained by opening and shutting throttle, operating valve lifter, and advancing and retarding the spark. After these preliminaries, fix stand back into position. Now, mount the machine whilst the engine is still running, and gently engage the clutch by very gradually depressing with the heel the clutch control pedal on the right-hand side, at the same time accelerating the speed of the engine to enable it to take up the load. As soon as the machine is well on the way, change to second gear by pulling the gear lever backwards to the centre position, at the same time raising the exhaust valve. Accelerate the engine immediately, and when the speed of the machine has sufficiently increased, change to top gear by pulling the gear lever right back to the end of quadrant nearest the rider, momentarily raising the exhaust valve. Again accelerate the engine immediately after changing.

After coasting down a hill, never attempt to start the engine by means of the clutch if the low gear is engaged, or serious damage may result. Always change to high gear; then, when the machine has slowed down considerably, raise the exhaust valve, slightly open the throttle, and gently engage the clutch. Do not use the low gear when it is practicable to use a higher one, as this is liable to overheat the engine.

**Lubrication is of vital importance.** For solo running at medium speed, the sight drip-feed should be set to exhaust one pumpful every five miles, and for sidecar work one pumpful every four miles. Under racing conditions, or when taking a heavy load

up a stiff hill on a low gear, a pumpful every three miles may be necessary. Remember that three-speed models require more oil than fixed gear models, on account of extra running during the low gear and free positions. For this reason, B.S.A. riders are strongly advised to make a practice of draining off dirty oil through the drain plug in base of crank case, at least every 300 miles. Clean out with paraffin, drain away, and start afresh by injecting five pumpful of fresh oil. Naturally, on a journey made at high speed, the engine will require more lubrication than for the same distance taken at a lower speed. To prevent undue wear and to avoid all possibility of a seizure, it cannot be too strongly impressed on the rider *never to omit giving attention to the lubrication of the engine, as one such omission might cause serious and instantaneous damage to the bushes and bearings.* When in doubt, therefore, an extra charge of oil may be given, as over lubrication can cause no real harm, although it may be accompanied by some minor troubles, such as sooting and short circuiting of the sparking plug, carbon deposit in cylinder, etc. Over lubrication will be at once apparent by the undue amount of smoke from the exhaust. All these troubles, however, are capable of remedy, but under lubrication, or the use of cheap inferior oil, may necessitate the renewal of half the engine. The usual symptoms of insufficient lubrication are sluggish running, overheating, knocking, and a general disinclination to respond readily to the throttle. It should not be forgotten that the bearings on the bicycle will require lubricating with good oil from time to time, and the use of B.S.A. Specially Prepared Lubricating Oil is thoroughly recommended.

**IMPORTANT.**—When writing to us with reference to motor cycles, **always quote type of machine, and give engine and frame numbers.** For further information see "Some Helpful Hints" Booklet, sent post free on request. This booklet will be found invaluable to riders of B.S.A. Motor Bicycles.

*The Birmingham Small Arms Company, Ltd., reserve the right to alter design or any constructional details of their manufactures, without giving notice.*

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## SPEEDOMETER.

The model "R" type of Stewart Motor Cycle Speedometer can be fitted as an extra. It registers speed from zero to 75 m.p.h., and is provided with a trip register and rubber-covered flexible shaft.

## B.S.A. Specially Prepared Cylinder Oil for Motor Bicycles.

To obtain the best results from Motor Cycle Engines it is most important that only the highest grade oil should be used.

After careful tests and analyses carried out in our own Laboratories, we have obtained an oil which is certain to give the most satisfactory results. We can therefore recommend the B.S.A. Specially Prepared Cylinder Oil with every confidence. It can be obtained from Cycle and Motor Agents in quart and half-gallon cans.

MR. H. G. MITCHELL, Boscombe, writes:—  
 "I would like to mention my experience of B.S.A. Cylinder Oil. At Lynton I had to refill my oil tank, but could not obtain B.S.A. Oil and had to buy—— Oil. Riding at night the engine got very hot, and at Sidmouth I obtained a tin of B.S.A. Oil, washed out my crank case, and filled up with B.S.A. Oil. The next day the machine ran splendidly, as she had done previously when lubricated with B.S.A. Oil. In future when I go touring a half-gallon tin of B.S.A. Oil will be strapped to my luggage board, and my advice to B.S.A. riders is 'Use B.S.A. Oil, and that only.'"





## Some Successes Achieved by B.S.A. Motor Bicycles during 1914.

Colmore Cup Trial  
B.S.A. (M. C. Breeze) ... GOLD MEDAL

Oxford-York-Oxford Trial  
B.S.A. & Sidecar (H. F. Edwards) GOLD MEDAL

Paris-Nice Trial (667 miles)

B.S.A. & Sidecar (M. Delaune) { Prize M.C.U. of France

" " " " Mobiloils Prize

" " " " Paris County Council Prize

" " " " GOLD MEDAL

M. Issody } B.S.A. Team French President's Prize

M. Delaune }

M. Berger }

Redditch & District Flexibility Hill Climb

B.S.A. (L. Seeley) ... FIRST

M.C.C. London—Land's End and Back

B.S.A. and Sidecar (M. C. Breeze) GOLD MEDAL

B.S.A. (H. F. Edwards & H. G. Digby) { TWO GOLD MEDALS

Bristol M.C.C. Open Trial

B.S.A. and Sidecar (H. Pritchard) GOLD MEDAL

Brooklands Track, 26 Lap Senior T.T. Race

B.S.A. (K. Holden) ... FIRST (Won by 3½ Laps)

Wolverhampton M.C.C. Open Hill Climb,

600 c.c. Class

B.S.A. & Sidecar (K. Holden) FIRST & Fastest Time

Woolwich M.C. Trial

B.S.A. (M. C. Breeze) ... GOLD MEDAL

S. Birmingham M.C. Trial

B.S.A. (C. Moss) ... GOLD MEDAL

Circuit de l'Eure Race, 500 c.c. Sidecar Class

B.S.A. & Sidecar (M. Delaune) { FASTEST TIME, Winning M.C.F. Gold Medal, Hutchinson Prize, Union Motorcyclists of France Prize, City of Vernon Prize.

M. Delaune made faster time than winners of 750 c.c. and 1,000 c.c. Sidecar Classes.

East Lothian M.C.C. Hill Climb,  
Standing and Flying Starts

B.S.A. (J. Tait) ... TWO FIRSTS

Paris-Rouen-Paris Tourist Race,

750 c.c. Solo Class

B.S.A. (M. Berger) ... FIRST

500 c.c. Sidecar Class

B.S.A. and Sidecar (M. Delaune) ... FIRST

14 B.S.A. started, 13 finished.

Newcastle & District M.C. Knockout Hill Climb, 500 c.c. Class

B.S.A. (F. Turvey) ... FIRST

Tyldesley & District M.C.C. Hill Climb,

Sidecar and Solo Classes

B.S.A. (Rev. Greenhalph) ... TWO FIRSTS

Hamilton & District Speed Trial,

650 c.c. Touring Machines Class

B.S.A. (J. Currie) ... FIRST

Stroud M.C.C. Hill Climb

B.S.A. (G. E. Mallett) ... { FIRST, Winning "Triumph" Cup

London-Edinburgh Trial

Double Journey—

B.S.A. (W. G. Coleman) ... GOLD MEDAL

B.S.A. & Sidecar (H. G. Digby) GOLD MEDAL

Single Journey—

B.S.A. & Sidecar (H. F. Edwards) GOLD MEDAL

" " (M. C. Breeze) GOLD MEDAL

" " (W. V. Stokes) GOLD MEDAL

" " (H. Thompson) GOLD MEDAL

Surrey M.C.C. Reliability Trial

B.S.A. (H. Butterworth) ... GOLD MEDAL

Brooklands Track T.T. Race,

150 Miles Open

B.S.A. (K. Holden) ... FIRST

Scottish Six Days Trial

B.S.A. (H. F. Edwards) ... GOLD MEDAL

Cheltenham M.C.C. Trials

B.S.A. (E. W. Ford) Won "Triumph" Cup

Circuit de Fontainebleau Race, 225 Miles

B.S.A. & Sidecar (A. G. Fenn) { FIRST, winning Prize de Fontainebleau and Prize de l'Union M.C.F.

Colwyn Bay Speed Trials

B.S.A. & Sidecar (K. Holden) { Won THREE FIRSTS and Tied for another FIRST

Irish End to End

B.S.A. (T. J. Woods) ... GOLD MEDAL

" (T. J. Woods) ... WON TEAM PRIZE

" (R. Jones) ...

" (W. J. Chambers) ...

Tunbridge Wells & District M.C. & L.C.C. Speed Trials

B.S.A. (R. Carey) { FIRST on Time and Formula; made Fastest Time of Day

Sutton Coldfield M.C. Hill Climb,

Class 7

B.S.A. & Sidecar (K. Holden) Beating 8-h.p. Machines with Sidecars. { FIRST on TIME, FIRST on FORMULA, FASTEST TIME of day for Sidecars

Streatham M.C.C. Open Hill Climb

B.S.A. (M. C. Breeze) THREE FIRSTS

Bristol B. & M.C. Land's End & Back

B.S.A. & Sidecar (H. A. Pritchard) { GOLD MEDAL & SPECIAL PRIZE

Deal, Walmer & Dist. M.C.C. Petrol Consumption Trial

B.S.A. & Sidecar (R. Henshaw) ... FIRST

Stockport M.C. Speed Judging Trial

B.S.A. & Sidecar (H. Thompson) ... GOLD MEDAL



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