

SUNBEAM MOTOR CYCLES

WITH OIL BATH ENCLOSED CHAIN TRANSMISSION.

*Winners in 1922 of the
Senior Tourist Trophy Race
and
The French Grand Prix.*



Makers: JOHN MARSTON LTD, Sunbeamland, WOLVERHAMPTON.



1923

SUNBEAM MOTOR BICYCLES

WITH PERFECT POWER TRANSMISSION

*Winners in 1922 of the Senior Tourist Trophy, the French Grand Prix,
the Colmore Cup, the Reliance Cup, the Scott Trophy, etc.*

MADE BY

JOHN MARSTON LIMITED

Head Offices and Works:

SUNBEAMLAND, WOLVERHAMPTON

Sold there and at the Company's Showrooms:

LONDON	-	-	-	57 HOLBORN VIADUCT, E.C.1 and 157 & 158 SLOANE STREET			
BOURNEMOUTH	-	-	-	8 HOLDENHURST ROAD		(By Sloane Square, S.W.1)	
LEEDS	-	-	-	5 WOODHOUSE LANE	LIVERPOOL	-	68 RENSHAW STREET
LEICESTER	-	-	-	115 UPPINGHAM ROAD	BIRMINGHAM	-	193 BROAD STREET
MANCHESTER	-	-	-	20 PETER STREET	EDINBURGH	-	37 GEORGE STREET

And by the best Agents throughout the United Kingdom and abroad.

INTRODUCTION

STRICTLY speaking Sunbeam motor-cycles need no introduction. That took place eleven years ago, when the Sunbeam made its first appearance in public. Since that day they have needed no blowing of trumpets, because their intrinsic worth has been their best advertisement.

The public like, and buy them, for the following reasons amongst others : —

1. *Because of their "Weather-proofness."* Their All-black finish and the fact that all external mechanism is enclosed, render them suitable for use in all weathers and make it very easy to clean them and keep them in good running order.
2. *Because of their "Little Oil Bath" Chain-Drive.* This world-



The Senior Tourist Trophy

famous feature, together with the Sunbeam shock-absorber in the engine sprocket, forms the most efficient power transmission in use on any motor-cycle.

3. *Because of their Competition Successes.* The public realises that only a machine of outstanding merit could have won during the past season not only the Senior Tourist Trophy race (a reproduction of the Trophy graces this page) but also the French Grand Prix, the Italian T.T., the Austrian Championship, the Colmore Cup, the Reliance Cup, the Scott Trophy and countless other awards. Also in the English, Scottish and International Six Days' Trials and in the A.C.U. Stock Machine Trial, every single Sunbeam entered gained a first-class award.

INTRODUCTION—*continued*

4. *Because they are always Up-to-date.* It is a costly business to keep on introducing new features, alterations in design and improved methods of manufacture. But the Sunbeam has never been "built to a price." Irrespective of cost, anything which makes it better is immediately adopted. Hence we get a feature which greatly appeals to the discriminating purchaser:—

5. *Because of their "Exclusiveness."* The Sunbeam owner cannot help feeling a touch of pride because he is conscious that his machine is in a class of its own. This exclusiveness arises partly from its external appearance—Sunbeam "finish" is world famous—but even more from what the eye cannot see. Only a visit to the factory can reveal the

extraordinarily fine machine work put into every part, the accuracy of the gear-cutting, the perfection of the grinding, the minute personal attention given to every item of the machine from analysis of the raw material to the scrutiny of the finished machine after its final test.

These methods of manufacture give the Sunbeam that very high grade of quality for which it is noted. Sunbeam owners find their machines cost remarkably little in upkeep and command high second-hand prices.



Sunbeams in the French Grand Prix

For 1923 we are re-introducing a 2 $\frac{3}{4}$ h.p. Sunbeam, a new model containing all the exclusive features which have made Sunbeams famous. Our complete programme for the coming season, and an index to this catalogue, will be found on the next page.

FOR SPEED AND RELIABILITY
UNDER ALL CONDITIONS YOU
CANNOT BEAT THE SUNBEAM

THE SUNBEAM PROGRAMME FOR 1923

2 $\frac{3}{4}$ h.p.—347 c.c.

A new model introduced to meet the demands of those who require something smaller and lighter than the 3 $\frac{1}{2}$ h.p. Light Solo. It contains all the features which have made Sunbeams famous, including the "Little Oil Bath" enclosed chain drive.

It is of long stroke type (70×90 m.m.) and equipped with kick-starter, carrier, etc. Listed in two types—standard and sporting. A delightful machine of which both public and press are making very complimentary remarks. (See pages 14 and 15.)

3 $\frac{1}{2}$ h.p. Standard—499 c.c.

A model designed essentially for those who require a machine available either solo or with sidecar. The ideal double-purpose machine. Simple sidecar fittings, rendering sidecar readily detachable. Wide ratio gears making outfit powerful on hills and fast on the level. Listed with footboards or footrests and with range of handlebars to suit tourists or competition riders. Electric lighting by Lucas Magdyno can be fitted as an extra when desired. (See pages 16 and 17.)

4 $\frac{1}{4}$ h.p.—599 c.c.

Listed more particularly as a "big single" sidecar machine but quite suitable for solo riding when desired. Sidecar fittings render sidecar readily detachable. The engine is of long-stroke type (85×105.5 m.m.) with detachable head. Its speed and hill-climbing powers are remarkable. A wide range of optional gears is offered. Specification includes Sunbeam detachable and interchangeable wheels, Sunbeam patent leaf spring fork, rim brake on front wheel, internal expanding brake on rear wheel, 3-speed countershaft gear and kick-starter, totally enclosed "Little Oil Bath" chain drive, etc. Electric lighting by Lucas Magdyno can be fitted as an extra when desired. (See pages 18 and 19.)

3 $\frac{1}{2}$ h.p. Light Solo—499 c.c.

An extremely popular model, giving higher speeds and more power on hills than the 2 $\frac{3}{4}$ h.p. The ideal solo machine, suitable alike for the ordinary tourist and for the clubman. Has been remarkably successful in the hands of private owners during the past season.

The specification includes totally enclosed chain drive, three-speed gearbox, kick-starter, carrier, etc. (See pages 20 and 21.)

3 $\frac{1}{2}$ h.p. T.T. Model—492 c.c.

The famous "long-stroke Sunbeam"—the fastest standard motorcycle accessible to the public. Exact copy of the engine used by our own racing men. This machine during the past season won the Senior Tourist Trophy race, the French Grand Prix, and countless other important competitions (see pages 4 and 5). Equipped with close ratio gears, rear chain guard, light reciprocating parts, etc. Capable of very high speeds and noted for its terrific acceleration. (See pages 22 and 23.)

8 h.p.—976 c.c. V. Twin.

The most efficient and powerful sidecar machine on the road. Will take a heavy coach-built sidecar and full load anywhere and most main road hills are taken easily in top gear. Price includes special Sunbeam leg-shields.

Fitted with detachable and interchangeable wheels, leaf spring front fork, kick-starter, carrier, etc. Electric lighting by Lucas Magdyno can be fitted as an extra if desired. (See pages 24 and 25.)

PROGRAMME—*continued.*

SUNBEAM SIDECARS.

No. 2 is made specially for the 8 h.p. Sunbeam.

Nos. 1 and 3 are suitable for either the $3\frac{1}{2}$ h.p. or $4\frac{1}{4}$ h.p. Sunbeam. They have identical chassis, with easily detached connections, but No. 3 has a lighter body built on more sporting lines. (See page 26.)

This Catalogue also contains :—

Some 1922 Competition Results - - - - - pp. 6-9

A description of Sunbeam Exclusive Constructional Details—

"The Little Oil Bath" - - - - - p. 10

"The Shock-absorber" - - - - - p. 11

"The Interchangeable Wheels" - - - - - p. 12

"The Divided Rear Axle" - - - - - p. 12

"The Leaf-spring Front Fork" - - - - - p. 13

"The Cam-operated Gearbox" - - - - - p. 13

What Sunbeam riders say - - - - - p. 27

The Sunbeam Guarantee - - - - - p. 28

TERMS OF BUSINESS

ORDERS FOR NEW MACHINES.

One-third of amount as deposit with order, and the balance to be paid when goods are ready for delivery.

CARRIAGE.

In case of damage, claims should be made on the carriers. Crates are charged at cost and are not returnable.

REPAIRS.

Machines or parts must be sent carriage paid or cannot be received. In all cases sender's name and address should be attached, and it is advisable to send an advice per post. Accessories should be removed. We take no responsibility for loss or damage.

All repairs are charged nett cash, and must be paid for before delivery.

If you have trouble of any kind with your Sunbeam, write us at once; we do not lose interest in our motorcycles the day they are sold.

A book of instructions is sent out with each machine.

SPARE PARTS.

When ordering spare parts, *the number of the motorcycle must in every case be given*, otherwise delay will arise on account of our having to write for particulars.

The number is always stamped on the bottom ball-head lug of frame just above the front fork crown, and the number will also be found on the back engine lug.

SUNBEAM MOTORCYCLES OUTLAST ALL OTHERS

SUNBEAM COMPETITION SUCCESSES, 1922

DURING 1922 Sunbeam motorcycles have had a perfectly amazing series of successes. These are set out in full in a separate booklet, "Sunbeam Successes, 1922," which will be sent free to all enquirers. These successes include the "blue ribbon" of motor cycling—the Senior Tourist Trophy—won by A. Bennett on his $3\frac{1}{2}$ h.p. T.T. Sunbeam at the record average speed of 58'33 miles per hour.

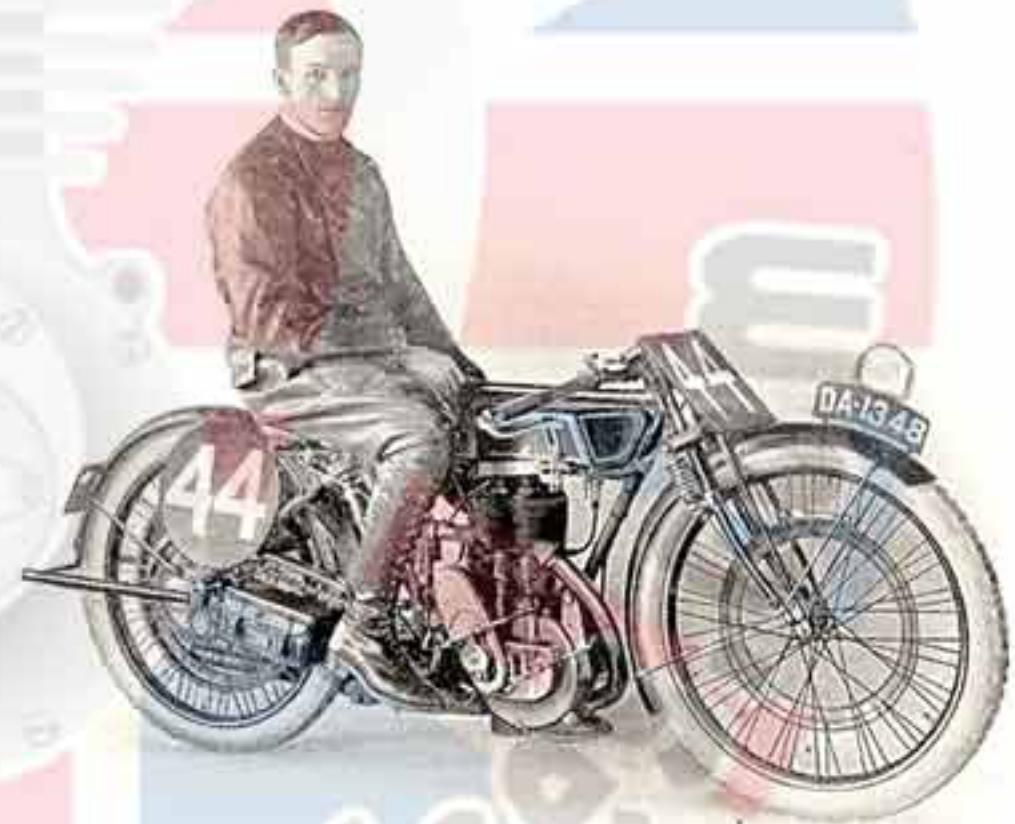
A photograph of Bennett appears on this page and of the Trophy on page 2. Other important racing successes include the French Grand Prix, the Italian T.T., and the Championship of Austria.

Sunbeam successes in the reliability field have been no less convincing. Riders of these machines have secured the Colmore Cup, the Reliance Cup, the Scott Trophy, the Welsh Open Amateur Challenge Cup, and many more. Also they have in 1922 set an entirely new standard for reliability inasmuch as every single machine of this make entered for any Six Days' Trial, either solo or with sidecar, whether driven by a trade rider or by an amateur, has secured a gold medal.

Furthermore, no less than nine Sunbeams were ridden in the A.C.U. Stock Machine Trial, held on March 15th—six stock machines entered by the firm and three other Sunbeams entered by their owners. *Again all nine obtained first-class awards.*

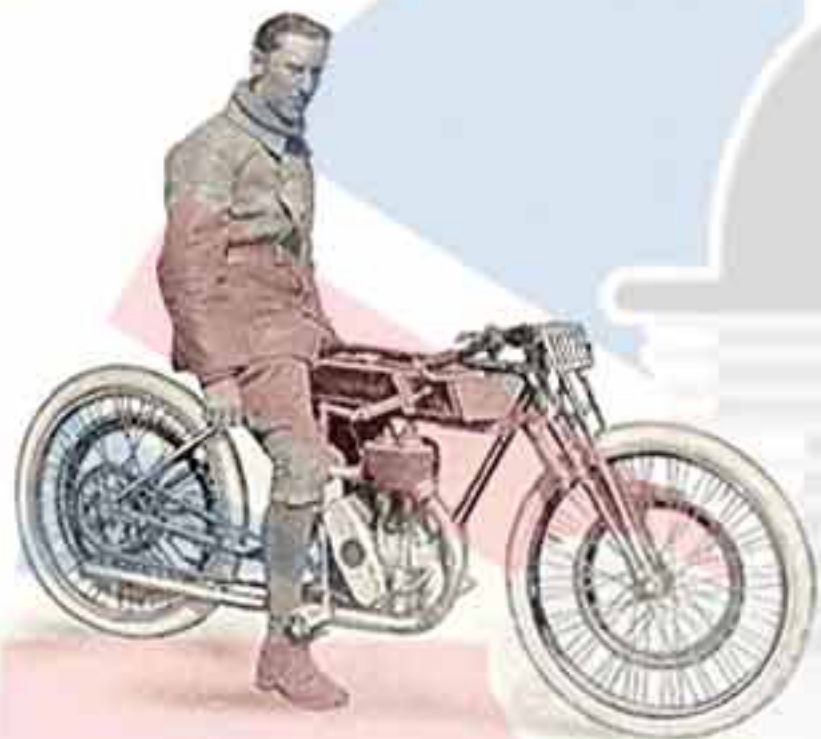
We append herewith a few other competition results but commend to the notice of interested readers the "Successes Booklet" already mentioned.

THE Senior Tourist Trophy race and the French Grand Prix were both won on the $3\frac{1}{2}$ h.p. T.T. Sunbeam. The winning machine, as will be seen from the illustration below, was almost identical with the standard production model. In each race all previous records for speed were broken, the "T.T." being won at an average speed of 58'33 m.p.h., (including a record lap for the course in 37 min. 46 secs.=60 m.p.h.), and the Grand Prix at the amazing speed of 61'3 m.p.h.



A. BENNETT
WINNER OF THE SENIOR TOURIST TROPHY RACE AND THE FRENCH GRAND PRIX, 1922.

COMPETITION SUCCESSES, 1922—*continued*



RUPERT KARNER, CHAMPION OF AUSTRIA.

THE annual race meeting for the Championship of Austria was held this year on September 17th, on the track at Baden. Mr. Rupert Karner was entered for four events on his T.T. Sunbeam of 492 c.c. Three of these were for engines of 500 c.c., 750 c.c., and over 750 c.c. respectively; the fourth was for the Grand Prix of Baden and the Austrian Motorcycle Championship for 1922. He won all four events and met with a wonderful reception on being crowned with the laurel wreath of victory.

The track consists of a level sand course one kilometre long without banking at the turns, and the races varied in length from 20 to 30 laps. Karner's speed for the championship race was 52.61 m.p.h. He also received a special cup for making a record lap, his speed for which was 56.25 m.p.h.

THE ITALIAN TOURIST TROPHY RACE

And other successes in Italy.

THE Italian T.T. was held this year on July 2nd, and was won for the second year running by Sig. Ernesto Vailati of Milan, who not only won in record time but also put up a record lap.

During the current season, Sig. Vailati has also won the Parma-Poggio di Berceto on May 14th, the Circuit d'Orbassano on May 21st, and the Circuit di Tortona on May 28th. In addition to the above, Sig. Roero won the Circuit di Cremona on May 7th, and Sig. Morabito took the Circuit del Tevere on May 28th. All these were won on Sunbeams. Sig. Roero's win in the Circuit di Cremona is specially meritorious. Not only is he an amateur rider, but the T.T. Sunbeam on which he won he had bought new only the day before the race.



ERNESTO VAILATI, WINNER OF THE ITALIAN "T.T."

COMPETITION SUCCESSES, 1922—continued.

SUNBEAMS have also done exceptionally well in the chief Reliability Trials during the past season. The following are a selection of the Cups and Trophies awarded to Sunbeam riders. A full account is given in our booklet, "Sunbeam Successes, 1922," post free on demand.

THE ENGLISH, SCOTTISH AND INTERNATIONAL SIX DAYS' TRIALS.

Thirteen Sunbeams competed.

All thirteen won First-class Awards.

THE A.C.U. STOCK MACHINE TRIAL — — — March 15th.

Nine Sunbeams competed.

All nine won First-class Awards.

THE SCOTT TRIAL. — — — September 16th.

The "Scott Trophy"—*awarded for the best performance by a team of three amateurs.*—Won by Messrs. J. S. Whitley, W. Smith, and W. Wells.



A 4½ h.p. SUNBEAM COMBINATION CLIMBING BWLCH-Y-GROES IN THE A.C.U. SIX DAYS' TRIAL.

Austrian Tourist Trophy (Semmering), September 24th

Mr. Rupert Karner.

Blake Cup (East Lancashire), October 14th

Mr. A. Munroe.

Blake Cup (Liverpool), May 21st

Mr. G. F. Burns *tied*

Blake Cup (Widnes), July 2nd

Mr. J. Mooney

B. N. Bowl (M.C. & A.C.), July 30th

Mr. G. Butcher

Carnt Challenge Cup (Peterboro'), Sept. 7th

Mr. O. Collier

Colmore Cup (Sutton Coldfield), February 25th

Mr. T. C. de la Hay

Cotton Cup (Gloucester), June 22nd

Mr. J. Marsh, Jun.

Coopland Cup (Colwyn Bay), July 8th

Mr. G. F. Burns

Corke Cup (Wolverhampton), April 30th

Mr. E. Wheeler

Fell Cup (Bradford), April 23rd

Mr. P. W. Hodgson

Fittin Trophy (Dewsbury), July 1st

Mr. H. Hainesworth

Grand Prix of Baden (Austria), Sept. 17th

Mr. Rupert Karner

Heaton Moor Club Trophy, Sept. 3rd

Mr. F. Bamford

Hereford Cup (West Birmingham), June 24th

Mr. J. S. Spencer

Irish Fifty Miles Championship, June 10th

Mr. T. Mallon

Jennens Cup (Birmingham), March 18th

Mr. Reg. Brown

Jones Cup (North Wales), August 12th

Mr. G. F. Burns

Keighley Club Trophy, June 18th

Mr. W. Smith

Midland Cup (Birmingham), March 18th

Mr. Reg. Brown

Mitchell Cup (Bradford), July 24th—30th

Mr. G. R. Grundy

Paviour Trophy (Ipswich), October 7th

Mr. V. Olsson

Pickford Trophy (Rotherham), Sept. 23rd

Mr. H. Beedon

Public Schools Championship, Jan. 13th 1923

Mr. J. H. L. Vogt

Reliance Cup (Liverpool), October 14th

Mr. G. F. Burns

Rudge Whitworth Cup (York), August 26th

Mr. W. Hodgson

Sadler Bowl (Middlesbrough), October 14th

Mr. G. W. Dawson

Semmering Tourist Prize (Austria), Sept. 24th

Mr. Rupert Karner

Sheppard Cup (Wolverhampton), April 30th

Mr. E. Wheeler

Stacey Trophy (Sheffield) May 21st

Mr. C. W. Hayward

Starkie Cup (Colne), August 20th

Mr. R. F. Haigh

Swain & Jones Cup (Surrey), June 25th

Mr. T. H. Broadhurst

Trade Trophy (Ilkley), July 30th

Mr. A. Fieldhouse

Uxbridge M.C.C. Committee Cup, Oct. 1st

Mr. R. Dalton

Watson Shield (Sutton Coldfield), Feb. 25th

Mr. T. C. de la Hay

Webster Cup (Scarborough), September 23rd

Mr. George Dance

Welsh Open Amateur Challenge Cup, Aug. 12th

Mr. G. F. Burns

Welsh Open Speed Championship, Aug. 5th

Mr. George Dance

Williams Cup (Western Centre A.C.U., August 19th

Mr. George Dance

COMPETITION SUCCESSES, 1922—*continued.*

FASTEST TIME OF THE DAY

During the 1922 season Sunbeam riders achieved this distinction at all the following Meetings :—

Motoclub Zuid (Holland) Open Trial, Mar. 5th	Mr. A. Flinterman
Leinster Open Hill Climb, April 1st	Mr. A. A. Wayte
Combined Kent Clubs' Hill Climb, April 14th	Mr. A. G. Williams
Rugby Motor Club Hill Climb, April 15th	Mr. G. le Champion
Colchester and Bury M.C.C. Joint Hill Climb April 17th	Mr. D. Robinson
Bishop Auckland and Durham Inter-Club Hill Climb, April 17th	Mr. C. W. Smith



MR. GEORGE DANCE, ON "THE WREKIN"
IN THE 1922 A.C.U. SIX DAYS TRIAL

West Birmingham M.C.C. Hill Climb, April 22nd	Mr. R. G. Smith
Ayr M.C.C. Hill Climb, April 27th	Mr. E. A. Small
Kop Open Hill Climb, April 29th	Mr. George Dance
Dublin M.C. Open Hill Climb, April 29th	Mr. A. A. Wayte
Liverpool Motor Club Hill Climb, May 6th	Mr. G. S. Barnard
Central Cornwall M.C. Speed Trials, May 13th	Mr. C. R. Endicott
Glasgow M.C.C. Hill Climb, May 13th	Messrs. J. Beck and E. A. Small tied
Westmorland M.C.C. Speed Trials, May 14th	Mr. H. Jackson
Barrow Motor Club Hill Climb, May 27th	Mr. H. Jackson
Essex and Southend Clubs' Joint Hill Climb, May 27th	Mr. K. S. Duncan
Falkirk Open Hill Climb, May 27th	Mr. J. Alexander
Berwick and District M.C.C. Hill Climb, May 28th	Mr. H. E. Gamlin
Eastern Valley Hill Climb, June 1st	Mr. J. C. Dibble
Northern Centre (A.C.U.) Speed Trials, June 10th	Mr. H. Jackson
Plymouth and District M.C.C. Hill Climb, June 14th	Mr. Ian Spooner
Leinster (Ireland) Speed Trials, June 17th	Mr. J. A. H. Waters
Catsash Open Hill Climb, July 1st	Mr. George Dance
Builth M.C.C. Speed Trials, July 6th	Mr. Ivor Parker
Colne and District M.C.C. Hill Climb, July 10th	Mr. J. Haigh
Gloucester, Ross and Cinderford Joint Hill Climb, July 13th	Mr. Reg. Brown
Newcastle and Northern M.C.C. Hill Climb, July 16th	Mr. P. Hart
Dublin M.C.C. Hill Climb, July 29th	Mr. A. A. Wayte
Chatcombe Hill Climb (Western Centre) August 19th	Mr. George Dance
Dunheved M.C.C. Hill Climb, August 19th	Mr. H. Piper
Peterborough M.C.C. Hill Climb, Aug. 20th	Mr. A. Stapleton
Middlesboro' M.C.C. Hill Climb, August 26th	Mr. W. Wilkinson
Tiverton M.C.C. Hill Climb, August 26th	Mr. L. Stagg
Coventry M.C. Hill Climb, August 26th	Mr. M. G. A. Scally
West Kent M.C.C. Hill Climb, August 27th	Mr. A. G. Williams
Central Cornwall M.C. Hill Climb, Sept. 7th	Mr. G. R. Symons
Peterborough M.C.C. Speed Trials, Sept 7th	Mr. O. Collier
Central Cornwall M.C. Speed Trials, Sept. 9th	Mr. G. R. Symons
Basingstoke M.C.C. Hill Climb, Sept. 21st	Mr. B. Fleming
Ipswich and District M.C. Hill Climb, September 23rd	Mr. K. S. Duncan

SUNBEAM EXCLUSIVE CONSTRUCTIONAL DETAILS

THE "LITTLE OIL-BATH" AND SHOCK-ABSORBER

THE most perplexing problem in motorcycle engineering has been that of transmission. The earliest attempts were by belt, but this has never proved a satisfactory solution. Belts wear, stretch, break and slip vexatiously in wet weather.

The next stage was unprotected chain drive. This eliminated the wastage by slip, and whilst new produced a high percentage of efficiency. But naked chains remain new only a very short time; the lubricant is quickly thrown off and when renewed merely forms with road grit a highly destructive grinding compound, leading to rapid wear, loss of pitch and a fall off in efficiency at least as bad as that of belt drive. Moreover the "snatch" of plain chain drive is ruinous to tyres.

It was left to John Marston Ltd. to find the only satisfactory solution—the famous "Little Oil Bath" totally enclosed chain drive in conjunction with the Sunbeam "cush-drive," a shock-absorbing mechanism contained in the engine chain-sprocket. Other manufacturers had made chain-cases, but had not succeeded in producing a fitment which was oil-tight and at the same time "rattle-proof" and allowed easy access to the rear chain.

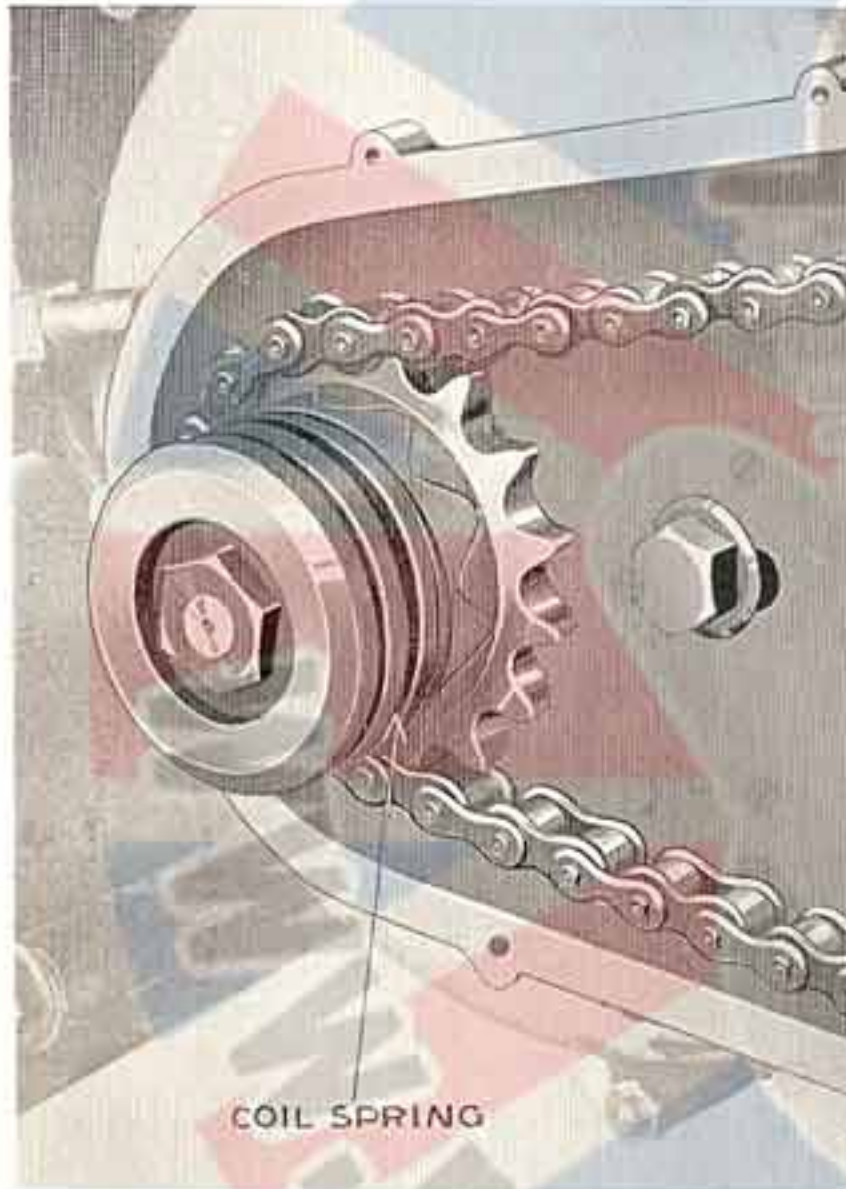
John Marston Ltd. had already done this for their Sunbeam bicycles and succeeded from the very outset in fitting just as satisfactory chain-cases to their Sunbeam motorcycles.

The American appreciates a good thing. In their paper "Motor Cycling and Bicycling" for October 18th, 1922, a writer says: "You have only to compare the sound of the Sunbeam with that of a machine with the usual inadequate guard to the top run of the chain, to see which pays. Both Sunbeam chains run perpetually immersed in a bath of oil, and I have seen a sprocket of theirs, after hundreds of thousands of miles running, in such good shape that when looking at it front-ways you couldn't tell which



SUNBEAM REAR CHAINCASE.

CONSTRUCTIONAL DETAILS—*continued.*



SUNBEAM SHOCK-ABSORBER.



had been the driving side of the teeth. And it was a small front driving sprocket, at that."

The "Shock-absorber" consists of a double-way positive clutch with V teeth in permanent engagement and backed by a powerful spring. Jerks and shocks merely separate the teeth and are absorbed by the spring instead of being transmitted through the chains. This introduces a high degree of elasticity into what is otherwise the harsh, unyielding nature of chain-drive, relieving both engine and tyres from undue wear and shock.

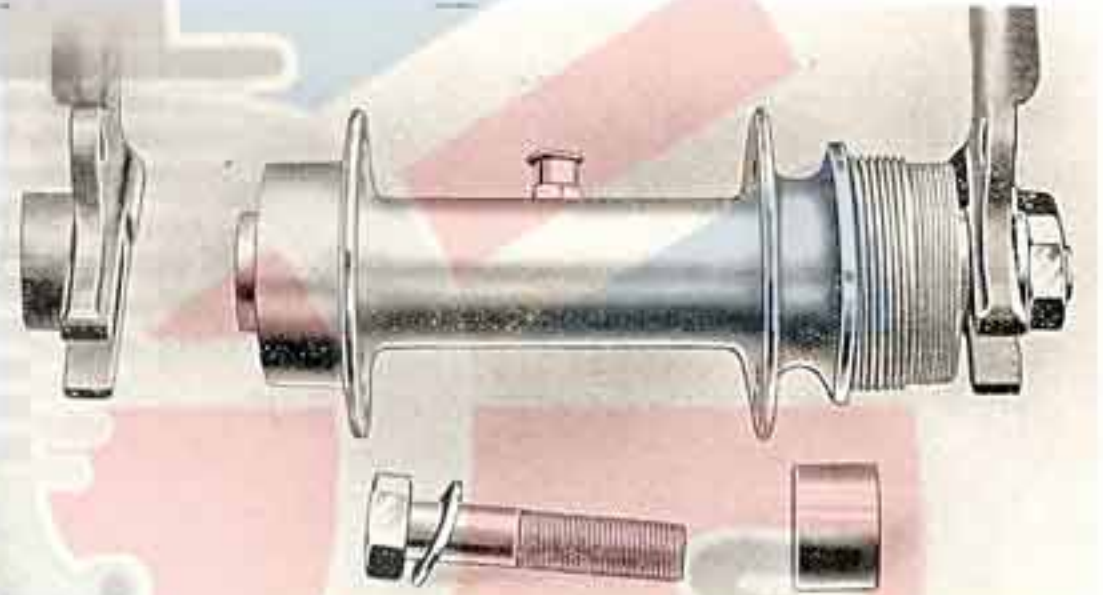
The Sunbeam chain-drive thus combines the advantages of both chain and belt, without the disadvantages of either, with the additional advantage that it is equally at its best in all weathers and under all conditions of road surface.

CONSTRUCTIONAL DETAILS—*continued.*
THE SUNBEAM INTERCHANGEABLE WHEEL



The wheels fitted to the 4½ h.p. and 8 h.p. models are detachable and interchangeable, and will fit either in the back or front forks of the machine or in the sidecar frame. To remove the wheel it is only necessary to undo one nut and withdraw the bolt and distance piece. The wheel can then be taken out of the machine without disturbing any other part.

THE SUNBEAM DIVIDED REAR AXLE



The illustration above shows the special Sunbeam device, fitted to all other models, by which the old bug-bear of tyre-repair is overcome. By unscrewing the bolt on left-hand end of spindle, the "distance-piece" can be removed, leaving a gap wide enough for the air tube to be passed through.

The cover can be taken off in a similar manner, but in this case it is necessary to remove the brake shoe.

This divided axle is found only on Sunbeam cycles, and will be much appreciated by practical motorcyclists, since the tube and cover can be changed without removing the back wheel.

CONSTRUCTIONAL DETAILS—*continued.*

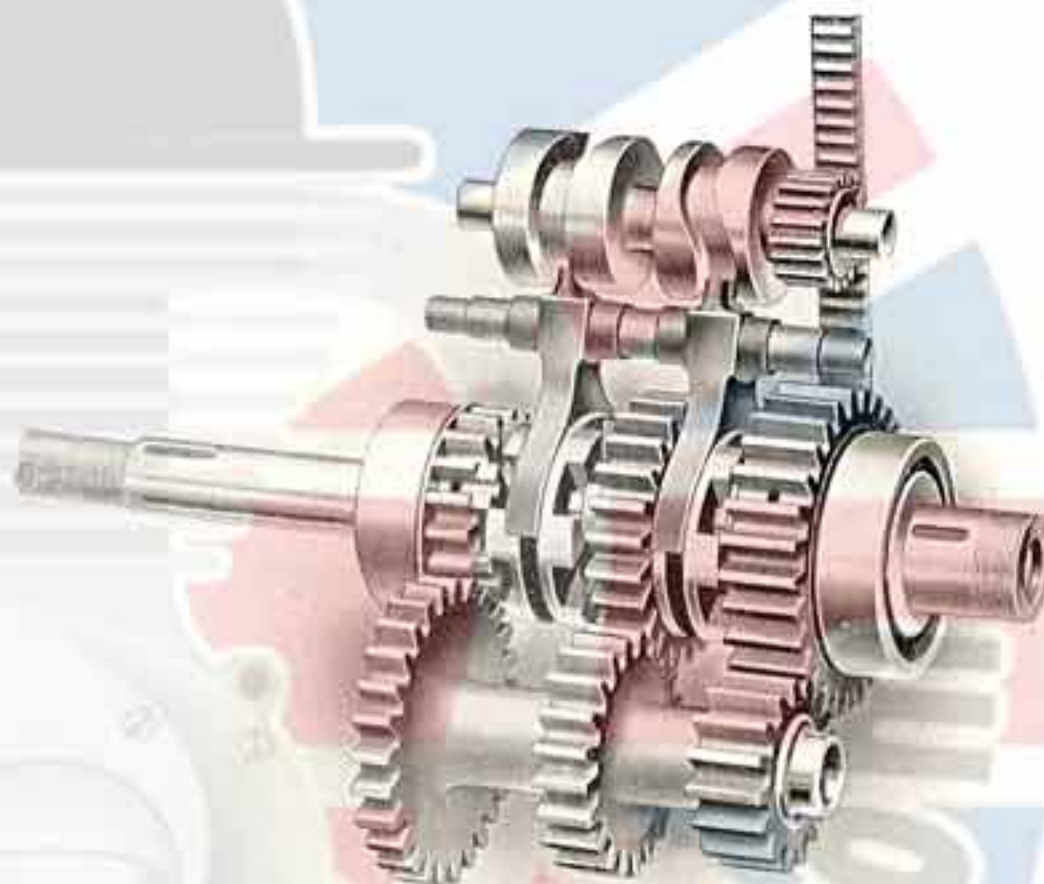
THE SUNBEAM PATENT LEAF-SPRING FRONT FORK



This is fitted to all $4\frac{1}{2}$ h.p. and 8 h.p. Sunbeams.

It gives remarkably easy steering and absorbs all road shocks. At the inner end the leaves are anchored to the lower shackle of the forks. At the outer end the two upper leaves move freely between two rollers. Side-play is impossible with this type of fork, since no wear takes place. Leaves, rollers and shackles are easily and simply lubricated.

THE SUNBEAM CAM-OPERATED GEARBOX



THE SUNBEAM THREE-SPEED GEARBOX illustrated above is fitted to all $4\frac{1}{2}$ h.p. and 8 h.p. Sunbeams.

A wide range of gears is provided.

The method of keeping the various parts lubricated is very simple. A three-way cock is fitted to the engine lubricator, so that by turning a tap and depressing plunger of pump, a full supply of oil can be fed direct into the gearbox. This can be done from the saddle whilst actually in motion. The gear-wheels are always in mesh, and the changes are effected by dog clutches, operated positively by a rack and pinion.

SPECIFICATION OF THE $2\frac{3}{4}$ h.p. SUNBEAM MOTOR BICYCLE. WITH PATENT OIL BATH TRANSMISSION.

This is a new model, introduced for 1923. The machine is light and the engine, though powerful and capable of high speeds, is very tractable.

The following is the specification of the roadster model, but it can also be supplied as a sporting model on the lines of the very successful $3\frac{1}{2}$ h.p. "T.T." Sunbeam, i.e., with footrests, no carrier, close ratio gearbox without kick-starter, engine with light moving parts and higher compression, guard only over rear chain, and handlebar as illustrated on page 23.

ENGINE.— $2\frac{3}{4}$ h.p. single-cylinder Sunbeam, 70×90 m.m. 347 c.c. Main shaft runs on ball-bearings, a double bearing being fitted to the chain side. Connecting rod fitted with roller bearing on big end. Floating gudgeon pin. Heavy steel flywheels—special care and attention is given to ensure perfect balance and freedom from vibration. Large valves, side by side and interchangeable. Adjustable tappets. The whole of the valve gear and exhaust valve lifter is of hardened steel and enclosed. The Sunbeam spring-drive on the engine shaft constitutes a shock-absorber for the chain, making the running so sweet that there is no vibration even on the lowest speeds. There is a corresponding saving of wear and tear on both machine and tyres. (See page 11).

IGNITION.—Ball bearing waterproof magneto of the latest type. Driven by enclosed chain.

TANK.—Bolted to lugs brazed to frame. Highly finished in black and gold. Capacity $1\frac{1}{2}$ gallons of petrol and one quart of oil. Petrol and oil fillers fitted with glass tops. Fitted with drip-feed lubricator with three-way tap, so that oil can be fed direct to gearbox. Tank has one longitudinal joint only, and is tapered to rear allowing large capacity with comfortable riding position.

EXHAUST.—A large silencer is fitted with tail-pipe to rear of machine.

CARBURETTOR.—A.M.A.C.

FRAME.—Low built. Height of saddle from ground, 28 in. Weldless steel tubes of the highest quality, butted where necessary. Joints mitred. The lugs which carry the tank are brazed to the frame.

FRONT FORK.—Designed and made at Sunbeamland under Druid patent. Remarkably easy steering and free from road vibration.

THE TRANSMISSION GEAR AND STARTING MECHANISM ARE ENTIRELY ENCLOSED.

The makers reserve the right to make, without notice, such improvements or alterations in the specification as they may from time to time deem necessary and advisable.

WHEELS.— $26 \times 2\frac{1}{4}$ rims. Heavy gauge spokes and large diameter ball bearing. The back wheel is fitted with the Sunbeam divided rear axle, which enables the tyre to be removed without disturbing the wheel or removing the chain case (see page 12).

TYRES.— $26 \times 2\frac{1}{4}$ to fit $2\frac{1}{4}$ rims; Dunlop rubber studded.

MUDGUARDS.—The front guard is fitted with side vallances its whole length.

CARRIER.—Light and strong, made of best quality steel tubes. On either side is a steel platform to carry pannier bags.

HANDLEBAR.—As illustrated. A pattern similar to that illustrated on page 17 can be supplied to order.

STAND.—Front and rear of the kick-up type, secured by spring clips.

BRAKES.—Special shoe brakes fitted to both back and front wheels. Back brake operated by foot pedal on left side of machine.

FOOTBOARDS.—Rubber covered, with aluminium frames and heel pieces. Footrests to order, rubber covered and adjustable for position.

TRANSMISSION.—Hans Renold $\frac{1}{2}$ " pitch roller chains, $1\frac{1}{2}$ " wide, fitted with spring clip joints, entirely enclosed in the SUNBEAM WEATHER-PROOF OIL BATH CHAIN CASES. (See page 10).

GEAR BOX.—Sunbeam 3-speed, countershaft, ball-bearing gearbox. The box is so arranged that when the high gear is engaged the low gear pinion comes out of mesh.

GEARS.—Standard 5.25, 8.75 and 14.58. Other ratios to order as shown on page 16. Ratio of sporting type—5.25, 7.8 and 11.8. Optional ratios as shown on page 20.

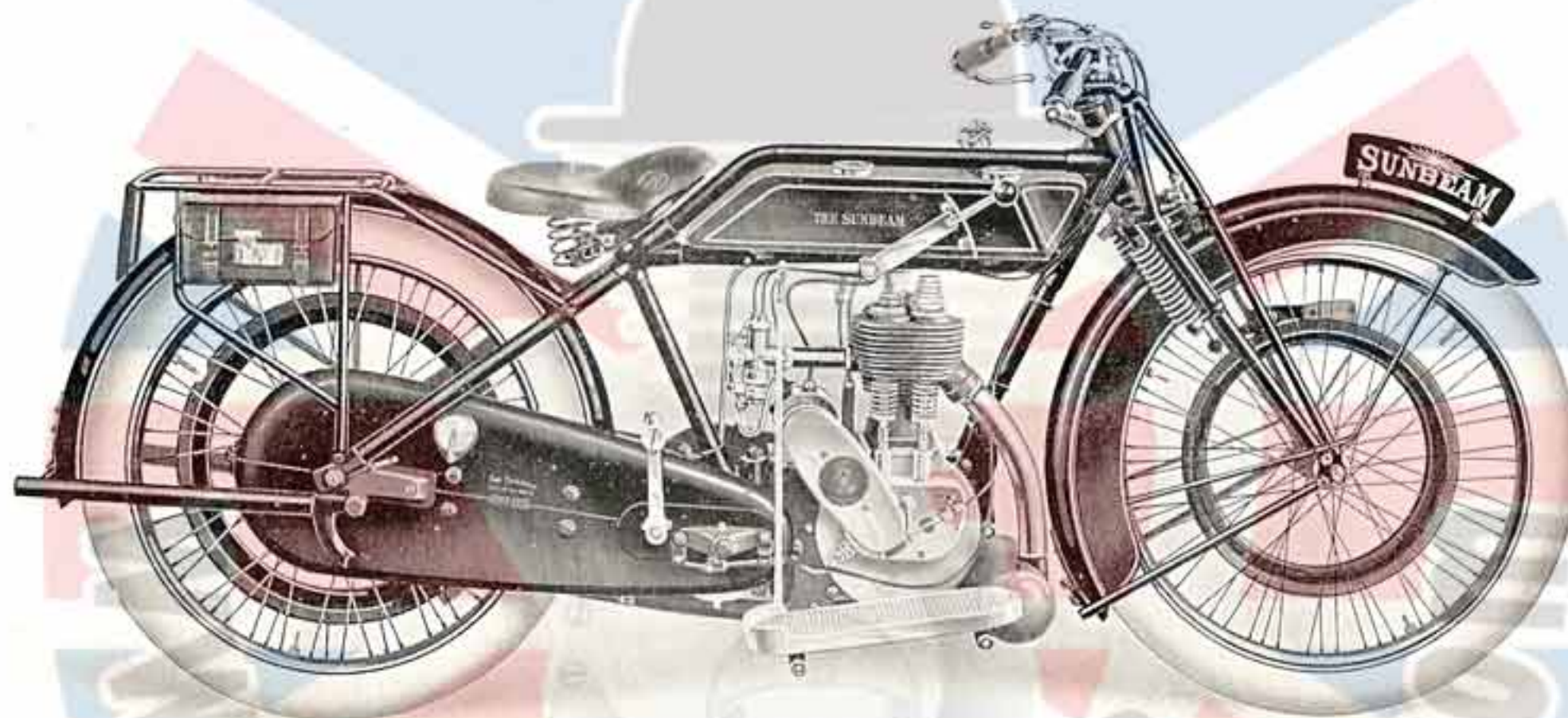
CLUTCH.—Special Sunbeam. The thrust of the declutching mechanism is taken on a ball-bearing. This clutch is exceptionally flexible and can be slipped without damage. *It is worked by a lever on the handlebar, which is much more convenient than foot-control.*

KICK-STARTER.

SADDLE.—Special Lyeett.

FINISH.—Best black enamel all over, except such levers, nuts, screws, etc., as are required for adjustment. These are heavily plated. All enamelled parts are treated with the Sunbeam anti-rust process.

The $2\frac{3}{4}$ h.p. Sunbeam Motor Bicycle, 347 C.C.



This popular Sunbeam model, which was discontinued in 1915 owing to the War, has now been reinstated. It follows the lines of the $3\frac{1}{2}$ h.p. Light Solo Sunbeam which has been so wonderfully successful during the seasons of 1921 and 1922.

Price 90 guineas.

Either roadster or sporting type of this model can be fitted to order with straight-through exhaust as illustrated on page 21.

SPECIFICATION OF THE $3\frac{1}{2}$ h.p. SUNBEAM MOTOR BICYCLE. WITH PATENT OIL BATH TRANSMISSION.

ENGINE.— $3\frac{1}{2}$ h.p. single-cylinder Sunbeam, 85 m/m. \times 88 m/m., 499 c.c. The main shaft runs on roller bearings, a double bearing being fitted to the chain side. Piston has two rings. Connecting rod is fitted with roller bearing on big end. Heavy steel flywheels. Special care and attention is given to ensure perfect balance and freedom from vibration. The cylinder has a large cooling surface, and air spaces extend right round both valve pockets, ensuring cool running. Large valves—side by side and interchangeable. Adjustable tappets fitted with springs for quietness. The whole of the valve gear and exhaust lifter is of hardened steel, and enclosed. The Sunbeam spring drive on the engine shaft constitutes a shock absorber to the chain, and it makes the running so sweet that there is no vibration even on the lowest speed. There is a corresponding saving of wear and tear both on the machine and on the tyres. (See page 11).

IGNITION.—Ball bearing waterproof magneto of the latest type. Driven by enclosed silent chain.

TANK.—Bolted to lugs brazed to frame. Highly finished in black and gold. Capacity nearly 2 gallons of petrol and over a quart of oil. Petrol and oil fillers fitted with glass tops. Priming cock to cylinder. Lubricator fitted with three-way cock, so that oil can be fed direct to the gearbox. The tank is tapered to the rear, which allows large capacity with comfortable riding position. It has one longitudinal joint only.

SILENCER.—Large chamber with extension pipe to rear of machine.

CARBURETTOR.—A.M.A.C.

FRAME.—Low built. Height of saddle from ground, 30". Weldless steel tubes of the highest quality, butted where necessary. Joints mitred. The lugs which carry the tank are brazed to the frame.

FRONT FORK.—Designed and made at Sunbeamland under Druid patent. Remarkably easy steering and free from road vibration.

WHEELS.—650 \times 65 rims. Heavy gauge spokes and large diameter ball bearing. The back wheel is fitted with the Sunbeam divided rear axle, which enables the tyre to be removed without disturbing the wheel or removing the chain case. (See page 12).

TYRES.—650 \times 65. Heavy Dunlop.

MUDGUARDS.—The front guard is fitted with side shields its whole length. The back mudguard is 7" wide.

CARRIER.—Light and strong, made of best quality steel tubes. On either side is a steel platform to carry pannier bags.

THE TRANSMISSION GEAR AND STARTING MECHANISM ARE ENTIRELY ENCLOSED.

The makers reserve the right to make, without notice, such improvements or alterations in the specification as they may from time to time deem necessary and advisable.

STAND.—Front and rear of the kick-up type, secured by spring clips.

HANDLEBAR.—Raised pattern, made of high carbon steel tubes. Control wires are fitted, where possible, inside the handlebar.

BRAKES.—Special shoe brakes fitted to both back and front wheels. Back brake operated by foot-pedal on left side of machine.

FOOT-BOARDS.—Rubber-covered foot-boards with aluminium frames and heel pieces.

TRANSMISSION.—Hans Renold $\frac{1}{2}$ " pitch roller chains, $\frac{3}{4}$ " wide, fitted with spring clip joints, entirely enclosed in the SUNBEAM WEATHER-PROOF OIL BATH CHAIN CASES. (See page 10).

SUNBEAM GEARBOX.—This is a three-speed countershaft gear, and is bolted to a special machined lug built into the frame, giving perfect alignment and ease of chain adjustment. The main and lay shafts run on large ball bearings, and the whole gear runs in an oil bath. The change speed lever works in a gate plate, which gives a positive stop for each position and makes gear changing a simple operation. The gear ratios are as follow:—

Standard Sidecar 15 teeth Sprocket on gear box.	Solo and Sidecar 16 teeth Sprocket on gear box.	Standard Solo. 17 teeth Sprocket on gear box.
5.6 to 1	5.25 to 1	4.9 to 1
9.3 to 1	8.75 to 1	8.2 to 1
15.5 to 1	14.6 to 1	13.7 to 1

CLUTCH.—Special Sunbeam. The thrust of the declutching mechanism is taken on a ball bearing. This clutch is exceptionally flexible, and can be slipped without damage. It is worked by a lever on the handlebar, which is much more convenient than foot-control.

STARTING.—By means of foot lever on right side of machine.

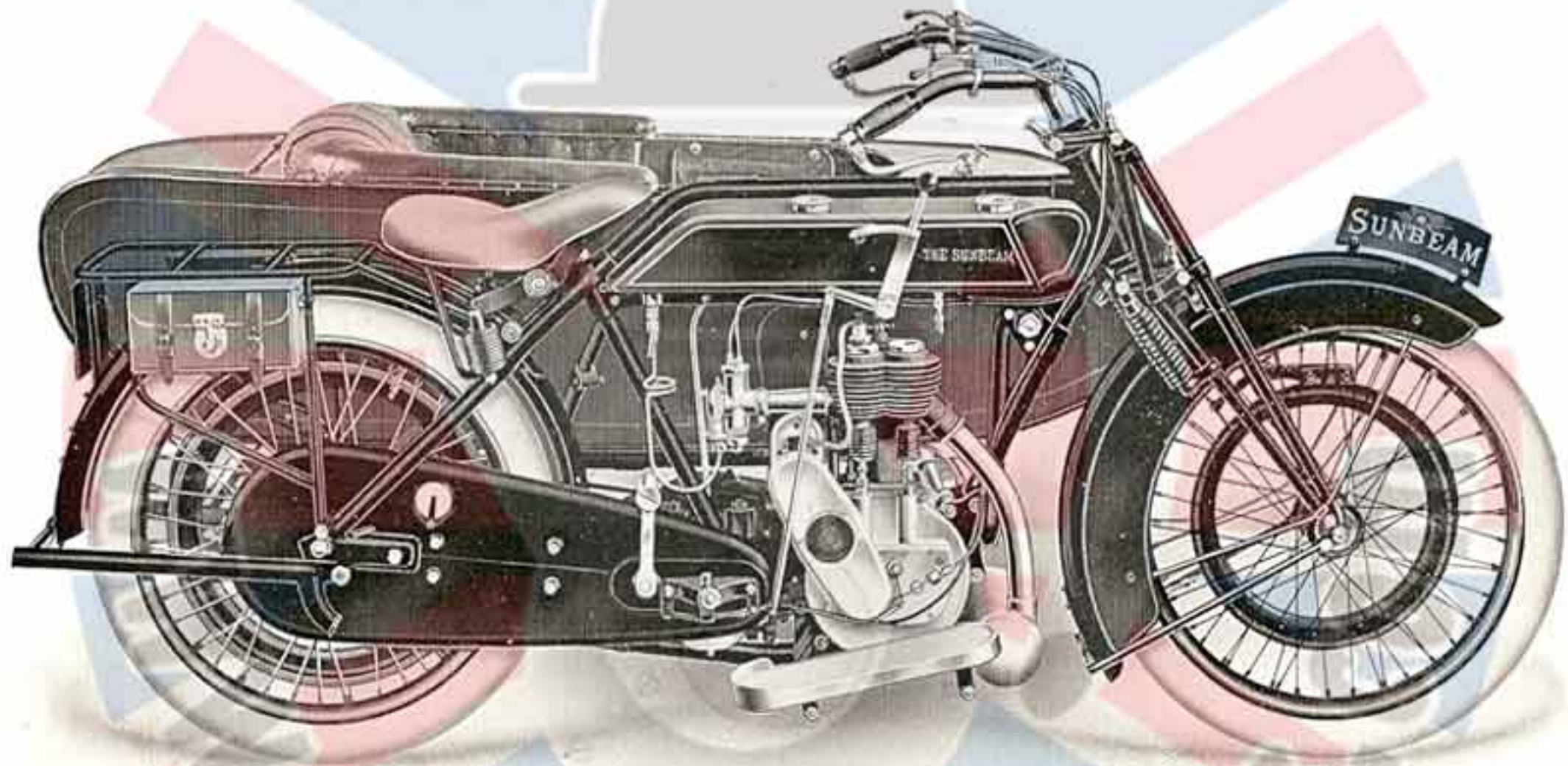
SADDLE.—Lycett spring front.

TOOLBAGS.—One on each side of carrier, with locks and spring fasteners. Tool roll with set of tools.

FINISH.—Best black enamel all over, except the levers, nuts, screws, etc., which are required for adjustment. These are heavily plated. All enamelled parts are treated with the Sunbeam anti-rust process.

The Standard $3\frac{1}{2}$ h.p. Sunbeam, 499 C.C.

THE BEST DOUBLE-PURPOSE MACHINE.



Price 100 guineas nett cash.

No. 3 Sidecar, 35 guineas.

EXTRA FOR THE MAGDYNO LIGHTING OUTFIT: SOLO—15 GUINEAS. SIDE CAR—16 GUINEAS.
EASTING SPORTING MODEL SCREEN, WITH BLACK WATERPROOF APRON - - £3 EXTRA.

The No. 1 Sidecar is also suitable for this Machine.

SPECIFICATION OF THE 4½ h.p. SUNBEAM MOTOR BICYCLE. WITH PATENT OIL BATH TRANSMISSION.

ENGINE.—4½ h.p. single cylinder Sunbeam, 85 m/m. × 105½ m/m, 599 c.c. The main shaft runs on roller bearings, a double bearing being fitted to the chain side. Piston has two rings. Connecting rod is fitted with roller bearing on big end. Heavy steel flywheels. Special care and attention is given to ensure perfect balance and freedom from vibration. The cylinder head is detachable, but the joint should not be disturbed unless it is necessary. The cylinder can be removed complete from the engine for purposes of decarbonisation. Large valves—side by side and interchangeable. Adjustable tappets fitted with springs for quietness. The whole of the valve gear and exhaust lifter is of hardened steel, and enclosed. The Sunbeam spring drive on the engine shaft constitutes a shock absorber to the chain, and it makes the running so sweet that there is no vibration even on the lowest speed, and there is a corresponding saving of wear and tear both on the machine and on the tyres. (See page 11).

IGNITION.—Ball bearing waterproof magneto of the latest type. Driven by enclosed silent chain.

TANK.—Bolted to lug brazed to frame. Highly finished in black and gold. Capacity nearly 2 gallons of petrol and over a quart of oil. Petrol and oil fillers fitted with glass tops. Priming cock to cylinder. Lubricator fitted with three-way cock, so that oil can be fed direct to the gearbox. The tank is tapered to the rear, which allows large capacity with comfortable riding position. It has one longitudinal joint only.

SILENCER.—Large chamber with extension pipe to rear of machine.

CARBURETTOR.—A.M.A.C.

FRAME.—Low built. Height of saddle from ground, 30". Weldless steel tubes of the highest quality, butted where necessary. Joints mitred. The lugs which carry the tank are brazed to the frame.

FRONT FORK.—Sunbeam Patent Leaf Spring. Remarkably easy steering and free from road vibration. (See page 13).

WHEELS.—650 × 65 rims. Heavy gauge spokes and large diameter steel hubs. Both wheels are quickly detachable and interchangeable, and are also interchangeable with the sidecar.

TYRES.—650 × 65. Heavy Dunlop.

MUDGUARDS.—The front guard is fitted with side shields its whole length, and wide leather splasher at base. The back mudguard is 7" wide.

CARRIER.—Light and strong, made of best quality steel tubes. On either side is a steel platform to carry pannier bags.

STAND.—Front and rear of the kick-up type, secured by spring clips.

THE TRANSMISSION GEAR AND STARTING MECHANISM ARE ENTIRELY ENCLOSED.

The makers reserve the right to make, without notice, such improvements or alterations in the specification as they may from time to time deem necessary and advisable.

HANDLEBAR.—Raised pattern, made of high carbon steel tubes. Control wires are fitted, where possible, inside the handlebar.

BRAKES.—Internal expanding rear brake, worked by foot pedal on left hand side of machine. The front brake is operated by cable from handlebar and acts on a special separate brake-rim.

FOOT-BOARDS.—Rubber-covered foot-boards with aluminium frames and heel pieces.

TRANSMISSION.—Hans Renold ½" pitch roller chains ½" wide, fitted with spring clip joints, entirely enclosed in the SUNBEAM WEATHER-PROOF OIL BATH CHAIN CASES. (See page 10).

SUNBEAM GEARBOX.—This is a three-speed countershaft gear, and is bolted to a special machined lug built into the frame, giving perfect alignment and ease of chain adjustment. All three gears are brought into action by sliding dog-clutches. These dog-clutches slide on solid castellated shafts. No sliding parts are fitted to loose keys. The main and lay shafts run on large ball bearings, and the whole gear runs in an oil bath. The change speed lever works in a gate plate, which gives a positive stop for each position and makes gear changing a simple operation. The gear ratios are as follow:—

Sidescars in hilly districts.	Normal Sidecar.	For Solo or Sidecar.	Normal Solo.
15 teeth Sprocket on gearbox.	16 teeth Sprocket on gearbox.	17 teeth Sprocket on gearbox.	18 teeth Sprocket on gearbox.
5.6 to 1	5.25 to 1	4.9 to 1	4.6 to 1
8.8 to 1	8.3 to 1	7.8 to 1	7.4 to 1
15.2 to 1	14.3 to 1	13.4 to 1	12.7 to 1

CLUTCH.—Special Sunbeam. The thrust of the declutching mechanism is taken on a ball bearing. This clutch is exceptionally flexible and can be slipped without damage. *It is worked by a lever on the handlebar, which is much more convenient than foot-control.*

STARTING.—By means of foot lever on right side of machine.

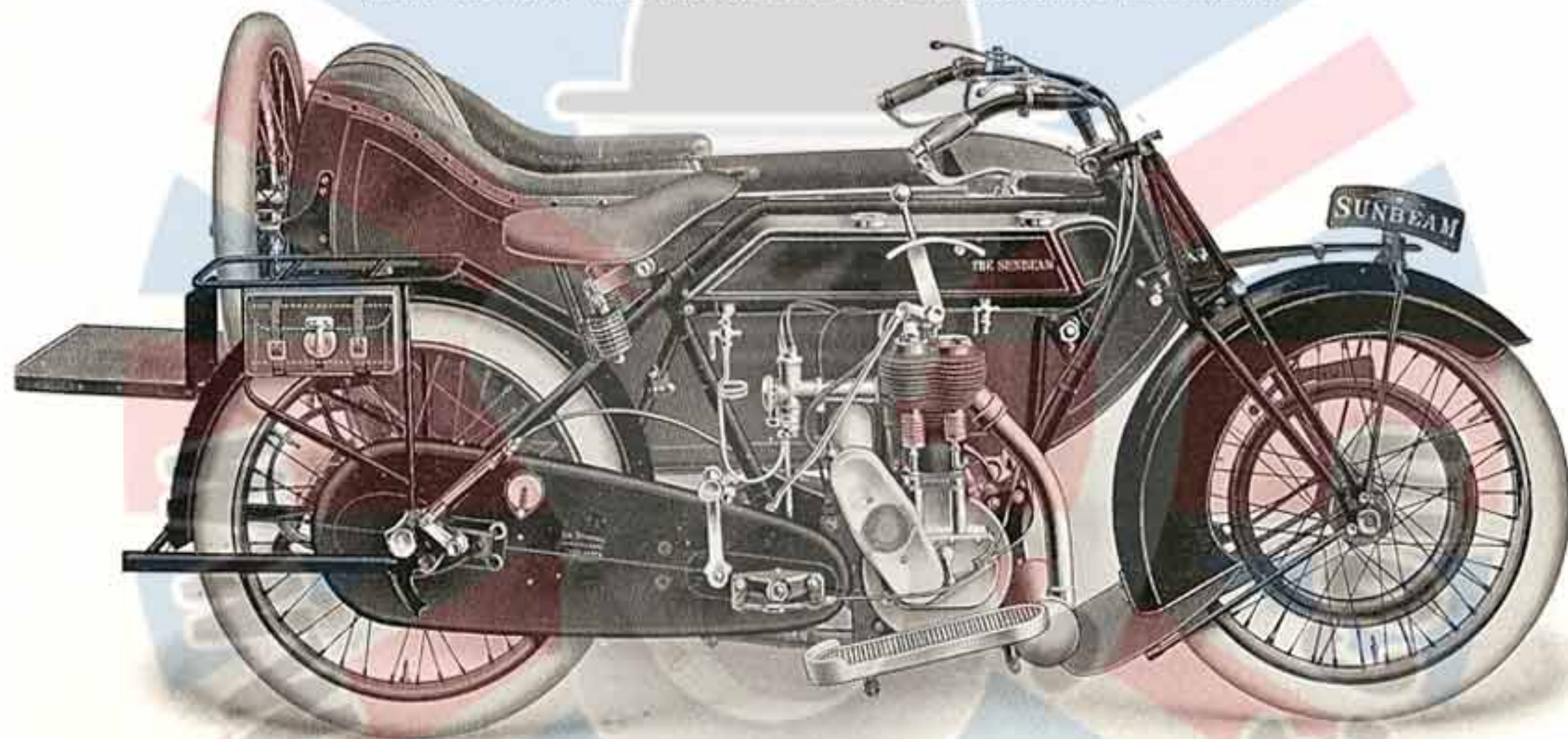
SADDLE.—Brooks' B170.

TOOL BAGS.—One on each side of carrier, with locks and spring fasteners. Tool roll with set of tools.

FINISH.—Best black enamel all over, except the levers, nuts, screws, etc., which are required for adjustment. These are heavily plated. All enamelled parts are treated with the Sunbeam anti-rust process.

The 4 $\frac{1}{4}$ h.p. Sunbeam Motor Bicycle, 599 c.c.

THE FINEST SINGLE-CYLINDER SIDECAR MACHINE.



Price 115 guineas nett cash. No. 1 Sidecar, 35 guineas.

LUGGAGE GRID, £1 10s. EXTRA. SPARE WHEEL AND TYRE, £8 8s. EXTRA.
EASTING BEST QUALITY WIND SCREEN, WITH BLACK WATERPROOF APRON, £5 EXTRA
EXTRA FOR THE MAGDYNO LIGHTING OUTFIT: SOLO—15 GUINEAS. SIDE CAR—16 GUINEAS.

The No. 3 Sidecar is also suitable for this machine (see page 26).

SPECIFICATION OF THE $3\frac{1}{2}$ h.p. LIGHT SOLO SUNBEAM. THE SPORTSMAN'S MACHINE.

A fast and light single-cylinder machine.

It is similar to the 1921 Sports Sunbeam which was so very successful in speed and reliability competitions in all parts of the country. It has been slightly modified, and is now fitted with a kick-starter.

It has a fine turn of speed with excellent acceleration. The transmission is entirely enclosed in Sunbeam oil bath chain cases, and the machine is suitable for everyday riding and touring.

ENGINE.— $3\frac{1}{2}$ h.p. single cylinder Sunbeam, 85×88 , 499 c.c. Fitted with light moving parts. The compression is higher than standard, and the engine is highly efficient. The main shaft runs on roller bearings, a double bearing being fitted to the chain side. Piston has one ring. Connecting rod is fitted with roller bearing on big end. Heavy steel flywheels. Special care and attention is given to ensure perfect balance and freedom from vibration. The cylinder has a large cooling surface, and air spaces extend right round both valve pockets, ensuring cool running. Large valves—side by side and interchangeable. Adjustable tappets fitted with springs for quietness. The whole of the valve gear and exhaust lifter is of hardened steel, and enclosed. The spring drive on the engine shaft constitutes a shock absorber to the chain, and it makes the running so sweet that there is no vibration even on the lowest speed. There is a corresponding saving of wear and tear both on the machine and on the tyres. (See page 11).

IGNITION.—Ball bearing waterproof magneto of the latest type. Driven by enclosed silent chain.

TANK.—Bolted to lugs brazed to frame. Highly finished in black and gold. Capacity $1\frac{1}{2}$ gallons of petrol and a quart of oil. Petrol and oil fillers fitted with glass tops. Priming cock to cylinder. Lubricator fitted with three-way cock, so that oil can be fed direct to the gearbox. The tank is tapered to the rear, which allows large capacity with comfortable riding position. It has one longitudinal joint only.

EXHAUST.—A long tail pipe is fitted from cylinder to rear of machine. A detachable end is fitted which makes the machine quiet for all ordinary road work. This end can be easily removed when desired for hill climbs, etc.

CARBURETTOR.—A.M.A.C.

FRAME.—Low built. Height of saddle from ground, 29". Weldless steel tubes of the highest quality, butted where necessary. Joints mitred. The lugs which carry the tank are brazed to the frame.

The makers reserve the right to make, without notice, such improvements or alterations in the specification as they may from time to time deem necessary and advisable.

FRONT FORK.—Designed and made at Sunbeamland under Druid patent. Remarkably easy steering and free from road vibration.

WHEELS.— $26" \times 2\frac{1}{4}"$ rims. Heavy gauge spokes and large diameter ball bearing. The back wheel is fitted with the Sunbeam divided rear axle, which enables the tyre to be removed without disturbing the wheel or removing the chain case (See page 12).

TYRES.— $26" \times 2\frac{1}{4}"$ to fit $2\frac{1}{4}"$ rims; Dunlop rubber studded.

MUDGUARDS.—The front guard is fitted with side vallances its whole length.

CARRIER.—Light and strong, made of best quality steel tubes. On either side is a steel platform to carry pannier bags.

STAND.—Front and rear of the kick-up type, secured by spring clips.

HANDLEBAR.—Dropped pattern, made of high carbon steel tubes. Control wires are fitted, where possible, inside the handlebar.

BRAKES.—Special shoe brakes fitted to both back and front wheels. Back brake operated by foot pedal on left side of machine.

FOOT-RESTS.—Rubber-covered, and adjustable for position.

TRANSMISSION.—Hans Renold $\frac{1}{2}"$ pitch roller chains, $\frac{1}{2}"$ wide, fitted with spring clip joints, entirely enclosed in the SUNBEAM WEATHER-PROOF OIL BATH CHAIN CASES. (See page 10).

GEARBOX.—Sunbeam 3-speed, countershaft, ball-bearing gearbox. The box is so arranged that when the high gear is engaged the low gear pinion comes out of mesh.

GEARS.—Standard 4.6, 7.0, and 10.5. Optional—4.9, 7.4, and 11; 5.6, 8.4, and 12.6; 5.2, 7.8, and 11.8.

CLUTCH.—Special Sunbeam. The thrust of the declutching mechanism is taken on a ball bearing. This clutch is exceptionally flexible, and can be slipped without damage. *It is worked by a lever on the handlebar, which is much more convenient than foot-control.*

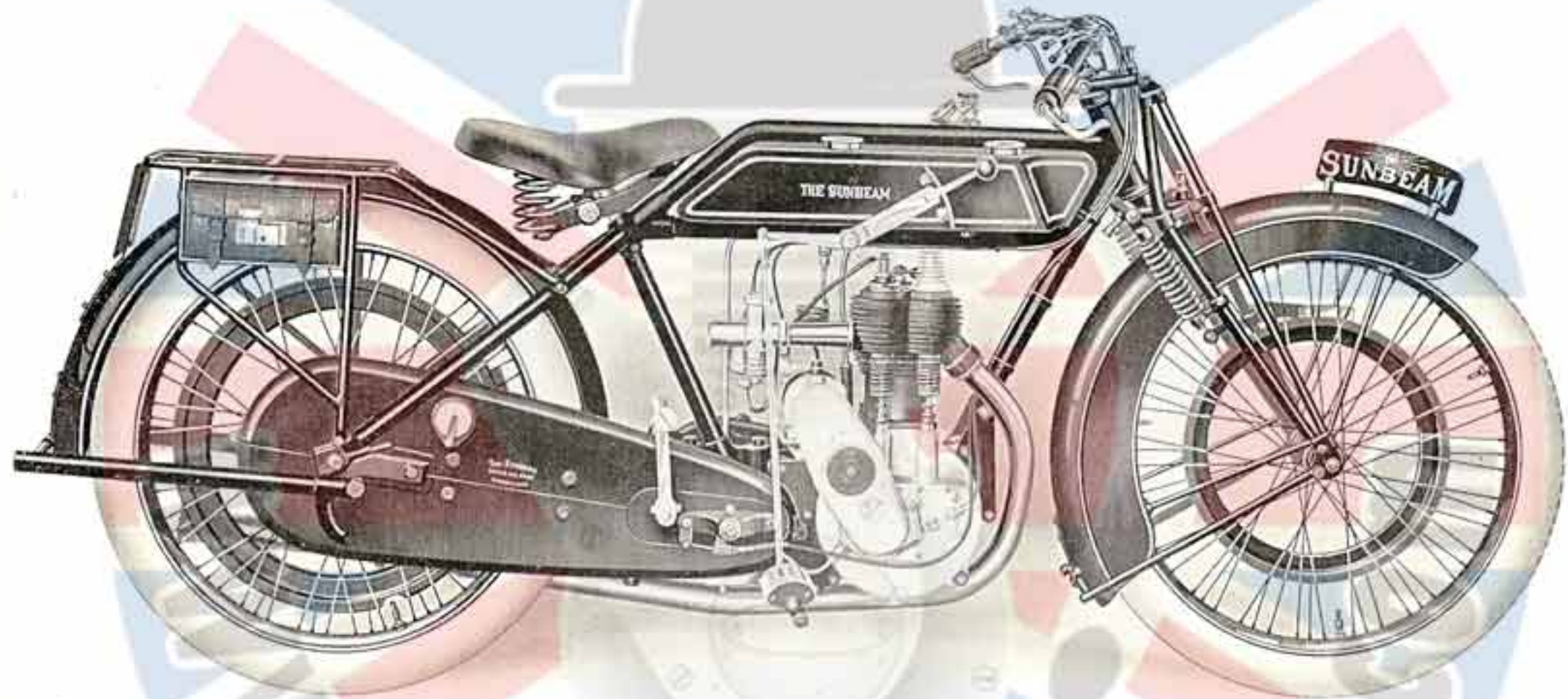
STARTING.—By means of foot lever on right side of machine.

SADDLE.—Special Lycett or Brooks' B220.

FINISH.—Best black enamel all over, except the levers, nuts, screws, etc., which are required for adjustment. These are heavily plated. All enamelled parts are treated with the Sunbeam anti-rust process.

The 3½ h.p. Light Solo Sunbeam, 499 C.C.

THE SPORTSMAN'S MACHINE.



Price 105 guineas nett cash.

This machine is intended for Solo use. For Sidecar use we recommend the Double-purpose Model as shewn on page 17.

Lucas Magdyno Lighting Outfit, 15 guineas extra.

Silencer as fitted to the 3½ h.p. on page 17 can be supplied on this model if desired.

SPECIFICATION OF THE $3\frac{1}{2}$ h.p. LONG-STROKE T.T. MODEL SUNBEAM. THE SPEEDMAN'S MACHINE.

A very fast, light, single cylinder machine specially designed for speed trials and competition purposes generally.

The engine is exceptionally fast and has wonderful acceleration.

Built on the lines of the $3\frac{1}{2}$ h.p. Sunbeams which have twice won the Senior Tourist Trophy race and the French Grand Prix. It will hold the road at any speed, and has a very low riding position.

ENGINE.— $3\frac{1}{2}$ h.p. single cylinder Sunbeam, 77×105.5 , 492 c.c. Fitted with light moving parts and high compression. Main shaft runs on roller bearings, a double bearing being fitted to the chain side. Single ring piston. Connecting rod fitted with roller bearing on big end. Heavy steel flywheels—special care and attention is given to ensure perfect balance and freedom from vibration. The cylinder is of a new design. Large valves—side by side and interchangeable. Adjustable tappets. The whole of the valve gear and exhaust lifter is of hardened steel and enclosed. The Sunbeam spring drive on the engine shaft constitutes a shock absorber to the chain, making the running so sweet that there is no vibration even on the lowest speeds. There is a corresponding saving of wear and tear both on the machine and the tyres. (See page 11).

IGNITION.—Ball bearing waterproof magneto of the latest type. Driven by enclosed silent chain.

TANK.—Bolted to lugs brazed to frame. Highly finished in black and gold. Capacity $1\frac{1}{2}$ gallons of petrol and a quart of oil. Petrol and oil fillers fitted with glass tops. Lubricator fitted with three-way cock, so that oil can be fed direct to the gearbox. The tank is tapered to the rear, which allows large capacity with comfortable riding position. It has one longitudinal joint only.

EXHAUST.—A long tail pipe is fitted from cylinder to rear of machine. A detachable end is fitted which makes the machine quiet for all ordinary road work. This end can be easily removed when desired for hill climbs, etc.

CARBURETTOR.—A.M.A.C.

FRAME.—Low built. Height of saddle from ground, 29". Weldless steel tubes of the highest quality, butted where necessary. Joints mitred. The lugs which carry the tank are brazed to the frame.

The makers reserve the right to make, without notice, such improvements or alterations in the specification as they may from time to time deem necessary and advisable.

FRONT FORK.—Designed and made at Sunbeamland under Druid patent. Remarkably easy steering and free from road vibration.

WHEELS.— $26" \times 2\frac{1}{4}"$ rims. Heavy gauge spokes and large diameter ball bearings. The back wheel is fitted with the Sunbeam divided rear axle, which enables the tyre to be removed without disturbing the wheel or removing the chain. (See page 12).

TYRES.— $26" \times 2\frac{1}{4}"$ to fit $2\frac{1}{4}"$ rims; Dunlop rubber studded.

MUDGUARDS.—Light and strong.

HANDLEBAR.—Special dropped pattern attached directly to the head clip so as to give a low riding position.

CARRIER.—No carrier fitted; the tool bag is attached to the side of the frame.

BRAKES.—Special shoe brakes fitted to both back and front wheels. Back brake operated by foot pedal on left side of machine.

FOOT-RESTS.—Rubber-covered, and adjustable for position.

TRANSMISSION.—Hans Renold $\frac{1}{2}"$ pitch roller chains, $\frac{1}{4}"$ wide, fitted with spring clip joints. The front chain runs in the Sunbeam weather-proof oil bath chain case. The back chain is fitted with a guard only.

GEARBOX.—Sunbeam 3-speed, countershaft, ball-bearing gearbox. The box is so arranged that when the high gear is engaged, the low gear pinion comes out of mesh.

GEARS.—Standard, 4.1, 6.2 and 9.4. Optional, 4.4, 6.0 and 8.0; 4.7, 6.3 and 8.6; 5.0, 6.7 and 9.0.

CLUTCH.—Special Sunbeam. The thrust of the declutching mechanism is taken on a ball bearing. This clutch is exceptionally flexible, and can be slipped without damage. It is worked by a lever on the handlebar, which is much more convenient than foot-control.

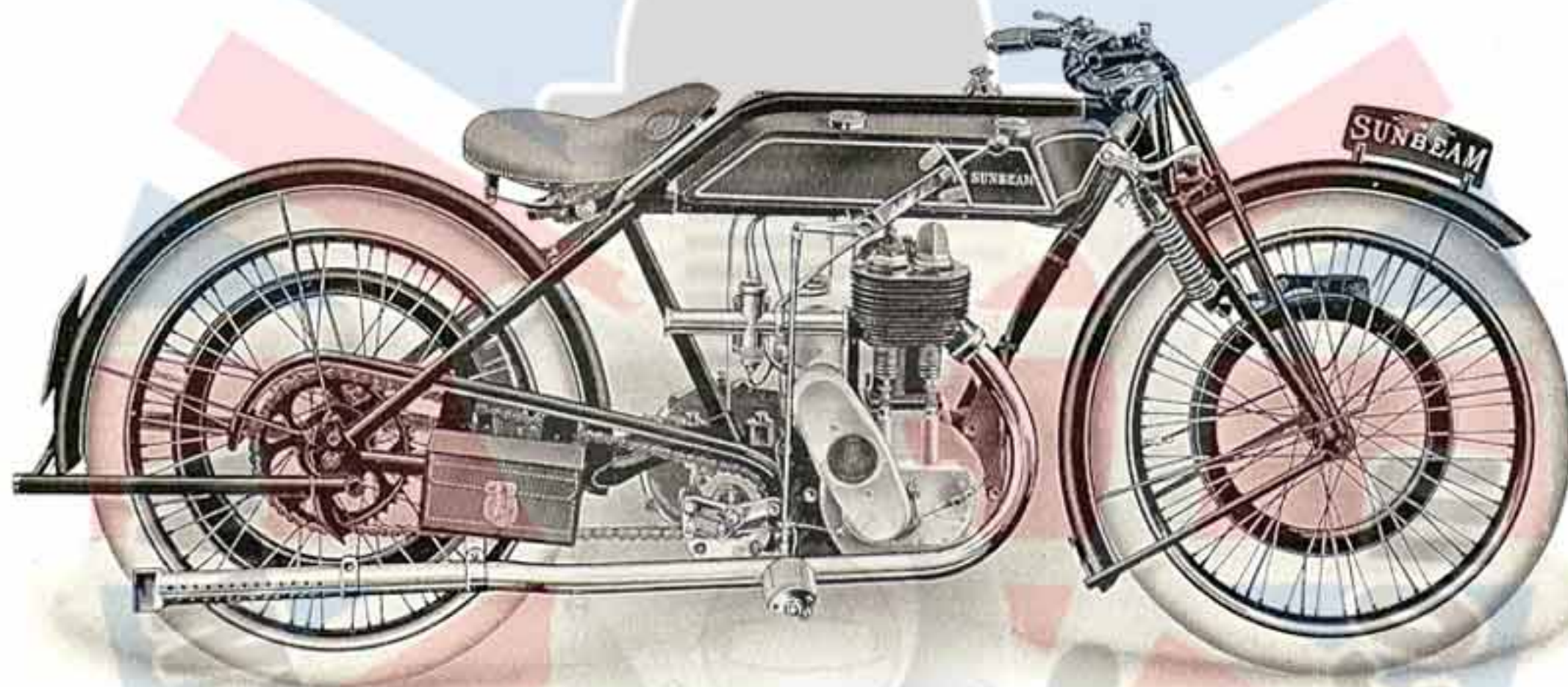
STARTING.—No kick-starter fitted.

SADDLE.—Special Lycett or Brooks' B220.

FINISH.—Best black enamel all over, except the levers, nuts, screws, etc., which are required for adjustment. These are heavily plated. All enamelled parts are treated with the Sunbeam anti-rust process.

3½ h.p. Long Stroke T.T. Model Sunbeam, 492 C.C.

THE SPEEDMAN'S MACHINE.



Price 105 guineas.

This model embodies the experience of the Sunbeam designer and riders, whose successes in the T.T., Grand Prix, and all the leading speed competitions are world renowned.

Silencer as fitted to the 3½ h.p. on page 17 can be supplied on this model if desired.

SPECIFICATION OF THE 8 h.p. SUNBEAM MOTOR BICYCLE. WITH PATENT OIL BATH TRANSMISSION.

FRAME.—Low built of special weldless steel tube of highest quality. All joints mitred where necessary. Height of saddle from ground, 32". The frame has been designed and built to take the strains of a heavy sidecar.

FORK.—Sunbeam Patent Leaf Spring. (See page 13).

WHEELS.—Quickly detachable and interchangeable, built with flat base rims for 28" x 3" tyres. The spoke holes are depressed to allow the nipple heads to sink into the rim, so that they are not liable to puncture the air tube. The hubs are fitted with very large ball bearings, and the wheels are built with 10-gauge spokes. (See page 12).

TYRES.—Dunlop rubber studded, 28" x 3".

MUDGUARDS.—The front mudguard is fitted with side wings carried its whole length. The back mudguard is 7" wide, of very deep section. It is not divided, as this is unnecessary, the back wheel being quickly detachable. Large leg shields are fitted in front of foot-boards.

ENGINE.—8 h.p., J.A.P. 85.5 mm. x 85 mm., 976 c.c. The Sunbeam spring drive, as illustrated on page 11, is fitted, and makes the drive exceedingly supple.

IGNITION.—Ball bearing waterproof magneto of the latest type. This is fitted in front of engine, and driven by an enclosed chain.

CARBURETTOR.—Latest pattern A.M.A.C.

SILENCER.—Large size and very efficient, with tail pipe.

TRANSMISSION.—Hans Renold $\frac{1}{2}$ " pitch chains, $\frac{1}{2}$ " wide, with spring clip joints, entirely enclosed in the SUNBEAM WEATHER-PROOF OIL BATH CHAIN CASES. (See page 10).

BRAKES.—Internal expanding brake on rear wheel, operating inside back hub sprocket and enclosed in the chain case. The brake shoes are lined with Ferodo, and the brake is smooth and powerful in action. The front brake is operated by a Bowden cable from the handlebar, and, like the back brake, is of our own manufacture. The brake shoes are easily detachable to enable the front wheel to be quickly removed.

THE TRANSMISSION GEAR AND STARTING MECHANISM ARE ENTIRELY ENCLOSED.

The makers reserve the right to make, without notice, such improvements or alterations in the specification as they may from time to time deem necessary and advisable.

CLUTCH.—Special Sunbeam, operated by lever on handlebar, which is more convenient than foot-control.

STARTING.—By foot lever on right side.

FOOT-RESTS.—Rubber-covered foot-boards with aluminium frames and heel pieces.

TANK.—Bolted to lugs brazed to frame. Highly finished in black and gold. Capacity nearly 2½ gallons petrol and about ½ gallon oil. Petrol and oil fillers fitted with glass tops. Priming cocks fitted to both cylinders. Lubricator, fitted with three-way cock, so that the oil can be fed direct to the gearbox. The tank is tapered to the rear, which allows large capacity with comfortable riding position. It has one longitudinal joint only.

SUNBEAM GEARBOX.—This is a three-speed countershaft gear, and is bolted to a special machined lug built into the frame, giving perfect alignment and ease of chain adjustment. All three gears are brought into action by sliding dog-clutches. These dog-clutches slide on solid castellated shafts. No sliding parts are fitted to loose keys. The main and lay shafts run on large ball bearings, and the whole gear runs in an oil bath. The change speed lever works in a gate plate, which gives a positive stop for each position and makes gear changing a simple operation. The standard gear ratio is 4.6, 7.4, 12.7. (See page 13). Optional ratios as shown on page 18.

HANDLEBAR.—Raised pattern, dropped at ends. Control wires are fitted, where possible, inside handlebar.

TOOL BAGS.—One on each side of carrier. Tool roll with set of tools supplied with each machine.

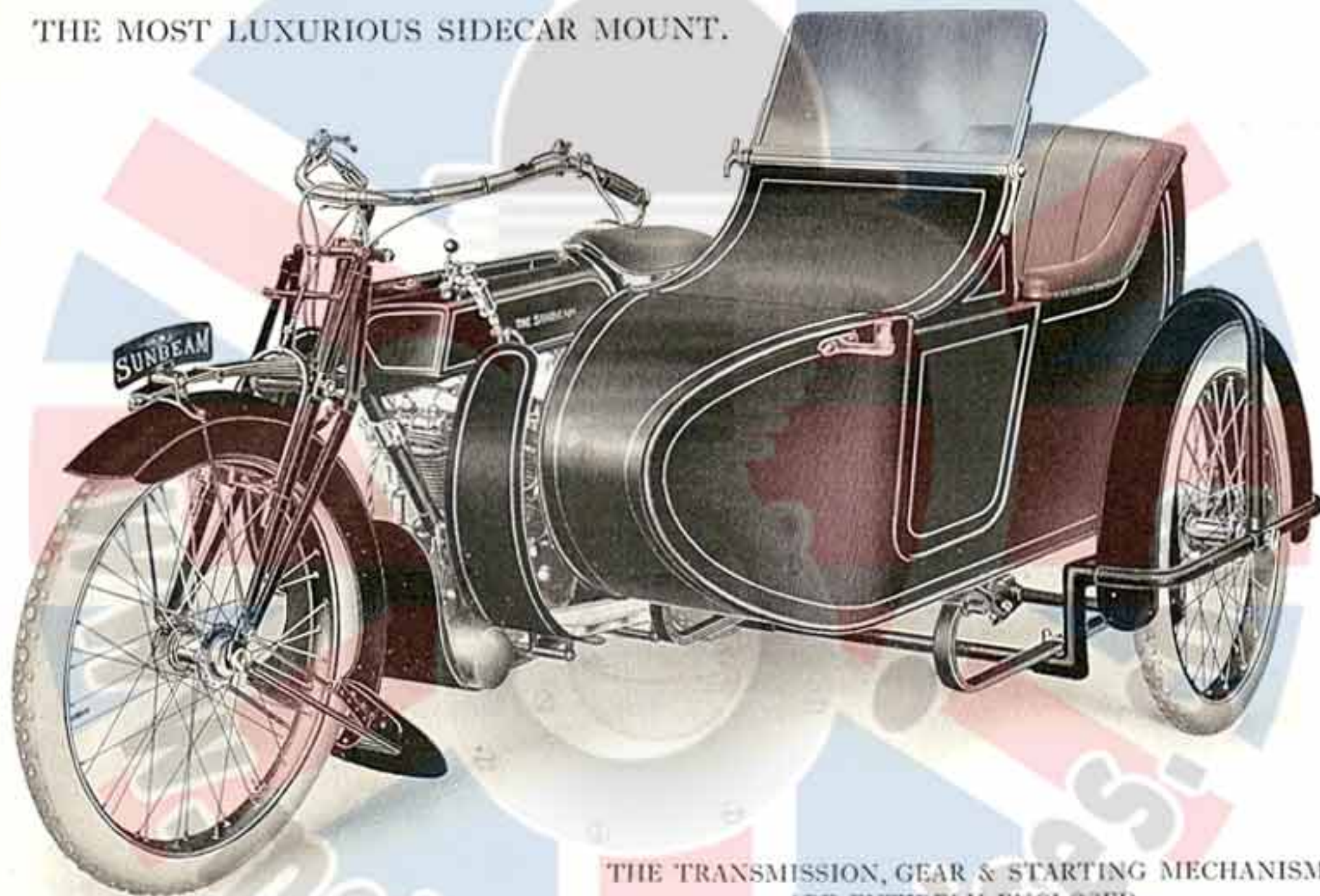
FINISH.—Best black enamel, including the handlebar, etc. The various levers, screws, and nuts, etc., which are required for adjustment purposes are plated. All enamelled parts are treated to the special Sunbeam anti-rust process.

STANDS.—Front and back stand, kick-up type.

SADDLE.—Brooks' B170.

The 8 h.p. Sunbeam Motor Bicycle, 976 c.c.

THE MOST LUXURIOUS SIDECAR MOUNT.



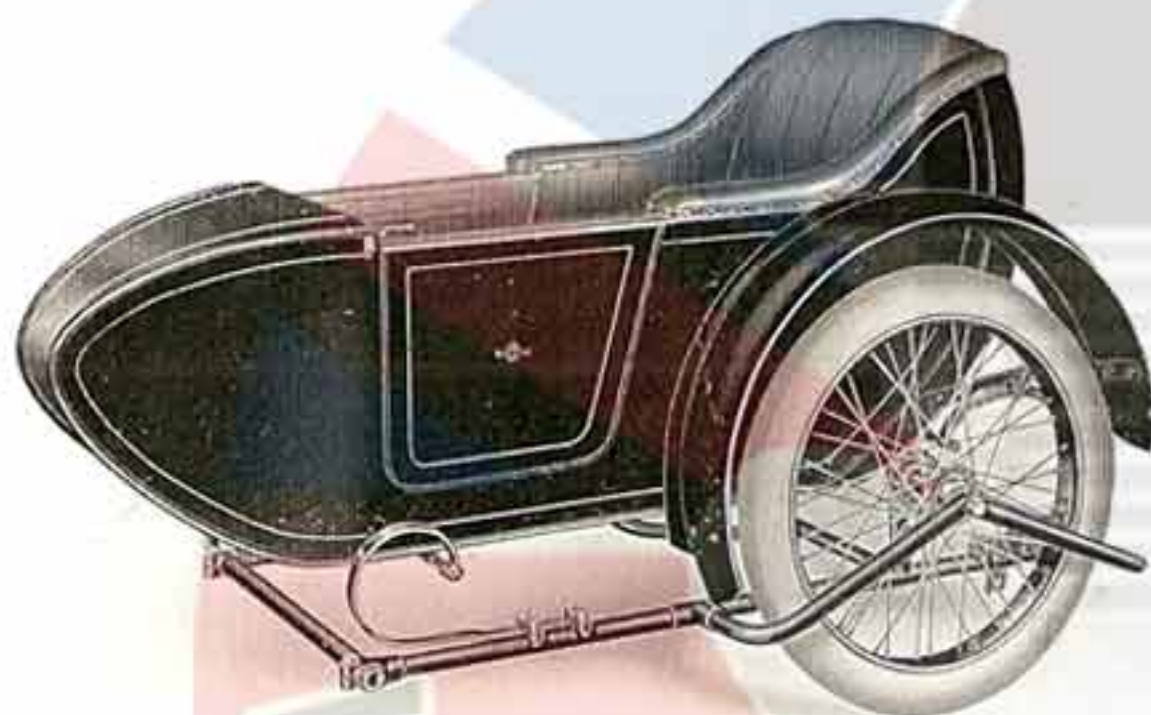
THE TRANSMISSION, GEAR & STARTING MECHANISM
ARE ENTIRELY ENCLOSED.

Price 135 guineas. No. 2 Sidecar (INCLUDING SCREEN
& LUGGAGE CARRIER), 43 guineas.

MAGDYNO LIGHTING OUTFIT, INCLUDING SIDECAR LAMP, 16 GUINEAS EXTRA.

SPARE WHEEL AND TYRE, £8 8s. EXTRA. SIDECAR HOOD, £4 EXTRA.

SUNBEAM SIDECARS, Nos. 1 AND 3.



No. 1 SIDECAR.

The No. 1 Sidecar is recommended for general use with the $4\frac{1}{2}$ h.p. and $3\frac{1}{2}$ h.p. Sunbeams. It is very roomy and comfortable and is supplied with detachable interchangeable wheel and 650×65 heavy motorcycle tyre.

Price 35 guineas.

INCLUDING WATER-PROOF APRON AND MAT.



No. 3 SIDECAR.

The No. 3 Sidecar is manufactured on the same chassis as the No. 1 with interchangeable wheel, etc., but the body is of a more racy outline and a little lighter. The lines are very graceful and the back portion of the body contains a locker which will hold a two-gallon tin of petrol, etc.

Price 35 guineas.

INCLUDING WATER-PROOF APRON AND MAT.

WHAT SUNBEAM RIDERS SAY:

I had a most successful run on my 2½ h.p. Sunbeam in the London—Exeter and won my gold medal. I was baulked on Peak Hill by a non-competitor when I was getting up very fast on second gear with ample to spare. It was only the super-excellent steering and holding power of the machine which saved me a nasty spill. Salcombe she flew up on second, but on White Sheet Hill I did not take any risks as the surface was so bad. I did 750 miles from the Saturday noon to Thursday noon and never once opened the tool-bag or heard a miss-fire.

Sherborne. *January 4th, 1923.*

E. ARNOLD WRIGHT.

I have a 3½ h.p. Sunbeam combination which I bought early in 1919. I suppose it has covered since then at the very least sixty thousand miles without any trouble and without one involuntary stop on the road, save, of course, a sooted plug. It may interest you to know that I ride a Sunbeam simply because the machine always starts, always keeps going, gets where it is going to and gets back.

Holywood, Co. Down. *January 22nd, 1923.* GODFREY KILROY.

Having just returned from a tour on the Continent on a 1922 3½ h.p. Sporting Sunbeam, I feel I must write you an appreciation of the splendid performance my machine put up. The tour was one of 4,000 miles; 3,100 being over French, Swiss and Italian roads.

I crossed the Alps three times, one of the crossings being over the famous Simplon Pass—6,590 feet high. The only mechanical stoppage was caused by a dirty plug, a loss of about three minutes. The chains (which have always remained on the machine and have only required a little adjustment) are as good as new, thanks to your perfect lubricating system. From Venice to Rome the roads were indescribable—a series of miniature volcanic craters. The surface indeed was so terrible that my average speed dropped

to about nine miles an hour, and my petrol consumption to 80 miles to a gallon. My Sunbeam has averaged 110 miles to a gallon on ordinary runs at home.

Musselburgh. *November 17th, 1922.*

DAVID LOWE, JUN.

I have been a motorcyclist for over ten years, have owned ten different machines and have ridden innumerable others, both as a civilian and in the army. But never have I owned such a bike as the light solo Sunbeam. It gives nothing away to others as regards road holding qualities; it has the big twins beaten when greasy; and is miles ahead of the whole bunch for a real weatherproof, no trouble machine.

Wilmslow, Cheshire. *January 15th, 1923.*

J. V. GRIFFITHS.

I am writing you to express my appreciation of my 8 h.p. Sunbeam with two-seater sidecar. I have been about 3,000 miles in various parts of the country, and have nothing but praise for the way the machine has behaved. So far I have not had the slightest trouble or mishap. I have been motorcycling since 1911 and have at last found "IT" without a shadow of doubt.

Southbourne, Hants. *October 21st, 1922.*

H. SPOONER.

On March 8th, 1922, I purchased one of your 4½ h.p. motorcycles with sporting sidecar and should like to express my appreciation of the manner in which it has behaved. To date I have covered over 9,000 miles without an involuntary stop of any kind. The combination has cost me absolutely nothing for replacements. The smooth running and acceleration is only to be appreciated by Sunbeam riders. I must say that your London service depot is a great advantage to Sunbeam riders, and one is able to get advice and perfect attention from people who thoroughly understand their job.

London, W. *October 25th, 1922.*

F. F. FOXALL.

GUARANTEE.

WE give the following guarantee with our motor cycles 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. In the case of machines which have been used for "hiring out" purposes, or from 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 replacement of any part which may have proved defective.

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 motor cycle and sidecar combined when carrying more persons or a greater weight than that for which the machine was designed by the manufacturers.

Any motor cycle sent to us to be plated, enamelled, or repaired, whether the repairs are required for the purpose of making good the defect before referred to or otherwise, will be repaired upon the following conditions, 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, or in any part replaced, it must be sent to us, carriage paid, and accompanied by an intimation from the sender that he desires to have it repaired free of charge under our guarantee, and he must also furnish us at the same time with the number of the machine, the name of the Agent from whom he purchased, and the date of the purchase or the date when the alleged defective part was replaced, as the case may be.

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 senders ; and this guarantee, or any implied guarantee, shall not be enforceable.

We guarantee only those machines which are bought either direct from us or from one of our duly authorized Agents, and under no other conditions.

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

THE TERM "AGENT"

is used in a complimentary sense only, and those firms whom we style our Agents are not authorized 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 authorized to give any warranty or make any representation on our behalf other than those contained in the above guarantee.