1950 CATALOGUE OF LIGHTWEIGHT CYCLING ACCESSORIES

FONTEYN & CO. LTD.

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(TOTTENHAM COURT ROAD) (NUMBERS EVEN)

FONTEYN—

The Name FONTEYN stands for all that is best in cycle accessories, particularly the lightweight fittings demanded by the racing cyclist and the hard-riding tourist.

Fonteyn & Co. Ltd., as agents and importers for all the manufacturers whose names are household words among discriminating cyclists, are free to buy only the very finest accessory in any given range, so that any component that you buy from Fonteyn's is the world's best in its class.

Our buying department combines a lifetime's experience of the cycle trade with the expert knowledge of practical cyclists on the staff. No component is ever put on the British market until we are fully satisfied that it is of the finest quality, specially designed for its job, and above all, tried and tested by the great international racing cyclists — who ride to win on only the finest equipment.

If it comes from Fonteyn's — you can be sure you've got the best.

ALL THE ACCESSORIES LISTED IN THIS CATALOGUE ARE OBTAINABLE THROUGH YOUR LOCAL CYCLE DEALER.

Index

NOTICE

All goods listed in this catalogue are manufactured in either France, Belgium or Italy, unless otherwise stated.

Prices of all goods in this catalogue (shown on separate list) are subject to alteration without notice, consequent upon the re-valuation of the pound sterling against Continental currencies.

CHANGE SPEED GEARS

for all cyclists

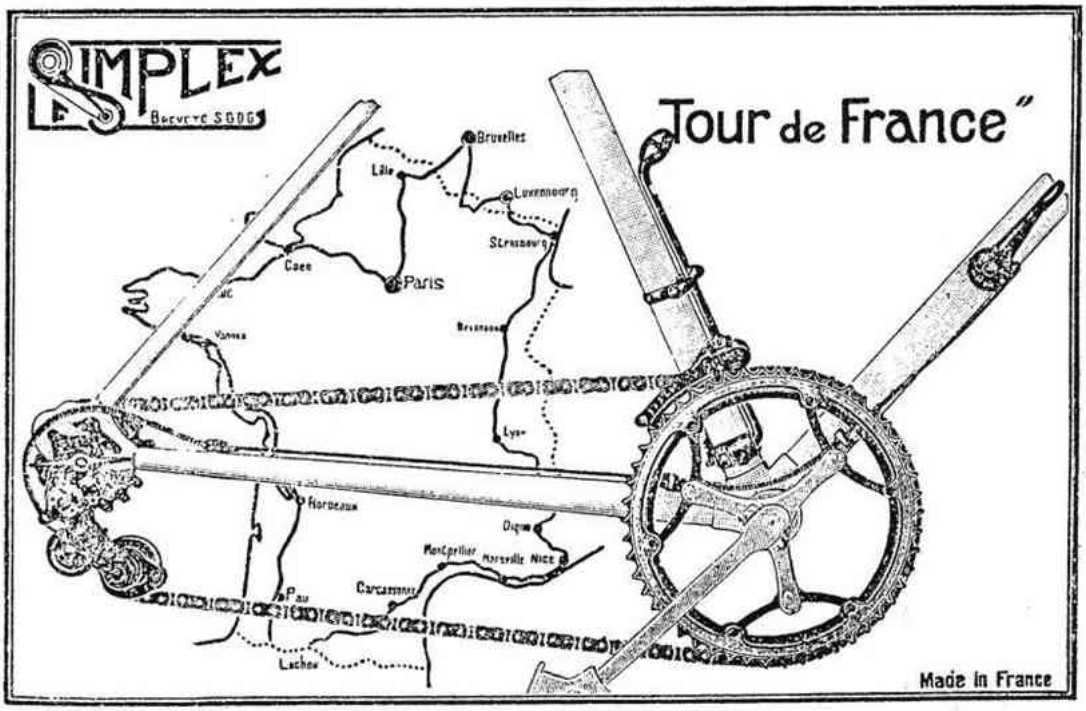
SIMPLEX Derailléur Gears are the most widely used in the world . . . the output of Simplex gears is greater than the combined output of all the other makes. The reason is simple . . . the Simplex is the best derailleur gear for every type of rider. Since its introduction, it has been used by the winners of almost every classic international road race — Tour de France, World's Championship, Olympic Games, Paris-London, Brighton-Glasgow, etc., etc.

The derailleur principle is too well-known nowadays to need any detailed explanation. Briefly, it offers the cyclist a choice of gears by a simple method of derailling, or switching the chain from one to another of the sprockets mounted on the free wheel body.

The special advantages of the Simplex derailleur are : smooth gear changing, whether up or down, with no risk of the chain jumping the teeth, even if the rider fumbles the change ; and a wide choice of gear ratios which can be changed at will.

The gear changing mechanism is mounted on the offside rear fork-end, and control by a flexible cable running along the chain-stay, to a control lever mounted on the down tube, easily reached with the right hand.

The chain runs through the derailling mechanism with a guiding roller on each side of the chain, the rollers being in line with the particular sprocket on which the chain is running. When the control lever is operated, the mechanism pulls the guiding rollers smoothly into line with the required sprocket, and as the rollers bear on twelve links of the chain at a time, there is a smooth change under all conditions, with no undue wear on the chain.



The perfect combination—the Simplex 4 or 5 speed derailleur, with a Simplex chain-wheel derailleur and double chain-wheel, to give a choice of 8 or 10 gears.

GEAR CHANGING

Gear changing can be carried out without ceasing to pedal. There are no position stops on the control lever, and it is only a matter of a few miles before the new user of a Simplex gear gets the "feel" of the lever, and can move it into any desired position, without even looking.

When a gear change is effected, the chain moving on to a different size sprocket causes a variation in the effective chain length, but this is automatically absorbed by the gear mechanism, the carrying arm moving on its spring-loaded pivot until the chain is held at exactly the right tension for easy running.

Simplex "Tour de France" derailleurs are available in three, four and five-speeds, and are supplied complete with the appropriate free-wheel and sprockets.

CHOOSING THE BEST GEAR

When ordering a complete machine, or buying a derailleur gear for fitting to an existing machine, thought should be given to the exact Simplex gears and allied equipment necessary for the particular type of riding envisaged.

For average, all-round riding, the Simplex "Tour de France" three-speed derailleur gear, complete with triple sprocket free-wheel, is recommended. The gear operates with a normal $\frac{1}{2}'' \times \frac{1}{8}''$ chain, and the only "extra" required is a short length of chain to provide the extra length required.

For massed start racing, and time trialling in hilly districts (or long distance touring), when extra gears are needed, the Simplex "Tour de France" four or five-speed derailleur should be used, complete with the appropriate free-wheel. The gear itself is similar to the three-speed, but with the extra throw required for the additional movement of the chain.

The four-speed gear will operate on a normal $\frac{1}{2}'' \times \frac{1}{8}''$ chain, or $\frac{1}{2}'' \times \frac{3}{32}''$ if preferred, and the five-speed gear on $\frac{1}{2}'' \times \frac{3}{32}''$ only.

THE SIMPLEX "EIGHT" AND "TEN"

The most popular combination, however, for massed-start racing, is the Simplex "Tour de France" derailleur, 4 or 5-speed, in conjunction with a twin chain-wheel and a Simplex chainwheel derailleur. This gives a range of 8 or 10 gears, sufficient for every type of racing and touring in this country.

When the double chain-wheel is used, it is essential to use a $\frac{1}{2}'' \times \frac{3}{32}''$ chain — usually called a "thin" chain — in order to provide the necessary clearance for the chain-wheel derailleur mechanism. The derailleur gear remains the same — the "Tour de France" 4 or 5-speed, but the free-wheel is supplied with $\frac{1}{2}'' \times \frac{3}{32}''$ sprockets to fit the chain, the double chain-wheels also having $\frac{1}{2}'' \times \frac{1}{32}''$ teeth.

Also necessary with the double chain-wheel derailleur is a right-hand crank with a slight extra clearance. The Durax cranks ($6\frac{3}{4}''$) are recommended as they have been specially designed to take the double chain-wheel, and the right-hand crank has the required extra clearance.

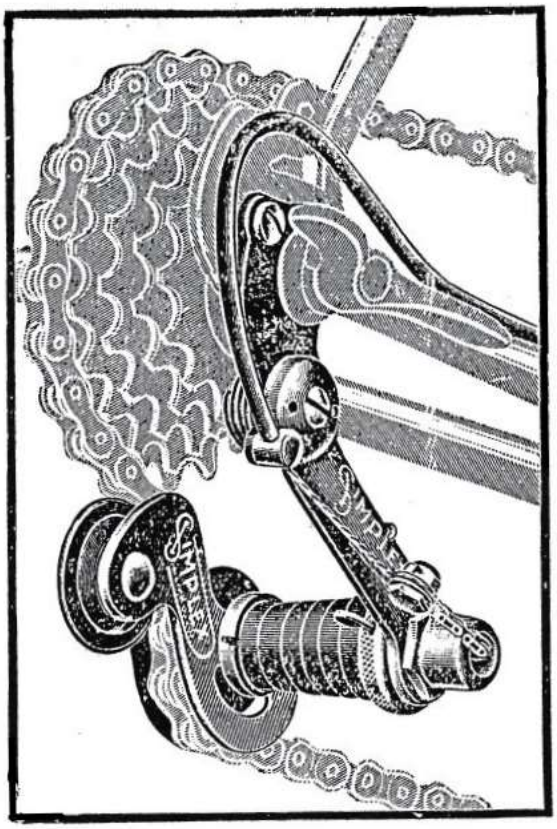
Full details of the derailleur gears, twin chain-wheels, etc., will be found in the following pages.

Simplex Gears

"Tour de France" 3-SPEED

THE 1949 Simplex "Tour de France" three-speed derailleur gear is the undoubted favourite with the British clubman, for all round touring and racing. It is supplied complete, with control cable and lever, and triple free-wheel, for fitting to any normal frame without alteration. Easily fixed, simply adjusted and secure. Weight only 12 ounces.

Supplied only with $\frac{1}{2}'' \times \frac{1}{8}''$ teeth. With flush type free-wheel, smallest sprocket of 16 teeth (secured to free-wheel block) and two detachable sprockets, any number from 17 to 24 teeth. Or with boss-type free-wheel, smallest sprocket 14 or 15 teeth, second sprocket 16 or 17 teeth, third sprocket up to 24 teeth.



The Simplex derailleur mechanism which is common to all the gears, except for variations in the throw for 3, 4 or 5 gears.

"Tour de France" — 4-SPEED

THE Simplex "Tour de France" four-speed derailleur is similar to the three-speed, but with the extra throw required to pass the chain across four sprockets. It is supplied complete, with control cable and lever, and four sprocket free-wheel.

The "four" is the favourite among the massed-start enthusiasts, and tourists in hilly districts.

The free-wheel is the famous Eureka, with all four sprockets detachable, enabling any combination from 14 to 24 teeth to be built up (except that if a 14 tooth smallest sprocket is used, the next biggest must be a 16 tooth sprocket to ensure sufficient clearance).

Supplied with either $\frac{1}{2}'' \times \frac{1}{8}''$ or $\frac{1}{2}'' \times \frac{3}{32}''$ free-wheel. (Note, when used in conjunction with a double chain-wheel, $\frac{1}{2}'' \times \frac{3}{32}''$ must be fitted).

Simplex Gears

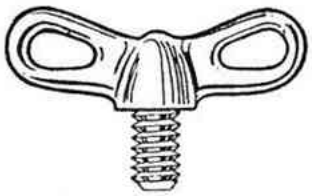
"Tour de France" — 5-SPEED

THE Simplex "Tour de France" five-speed derailleur is similar to the three or four, but with a still greater throw to pass the chain across five sprockets.

The "five," although only introduced late in 1949, was immediately adopted by massed-start riders, and coupled with a double chain-wheel to give ten gears, will certainly be a popular choice in 1950.

The free-wheel is the famous Eureka, with all five sprockets detachable. Supplied only in $\frac{1}{2}'' \times \frac{3}{32}''$, cogs from 14 teeth to 24 teeth.

SIMPLEX WING NUTS (for control lever)



FOR racing on rough roads, take the precaution of fitting a Simplex wing nut to your control lever. Simply remove the fixing screw and replace with the wing nut.

Tightening down the wing nut gives you complete control over the lever, and on very rough roads, it can be screwed right down, to lock the gear lever in place.

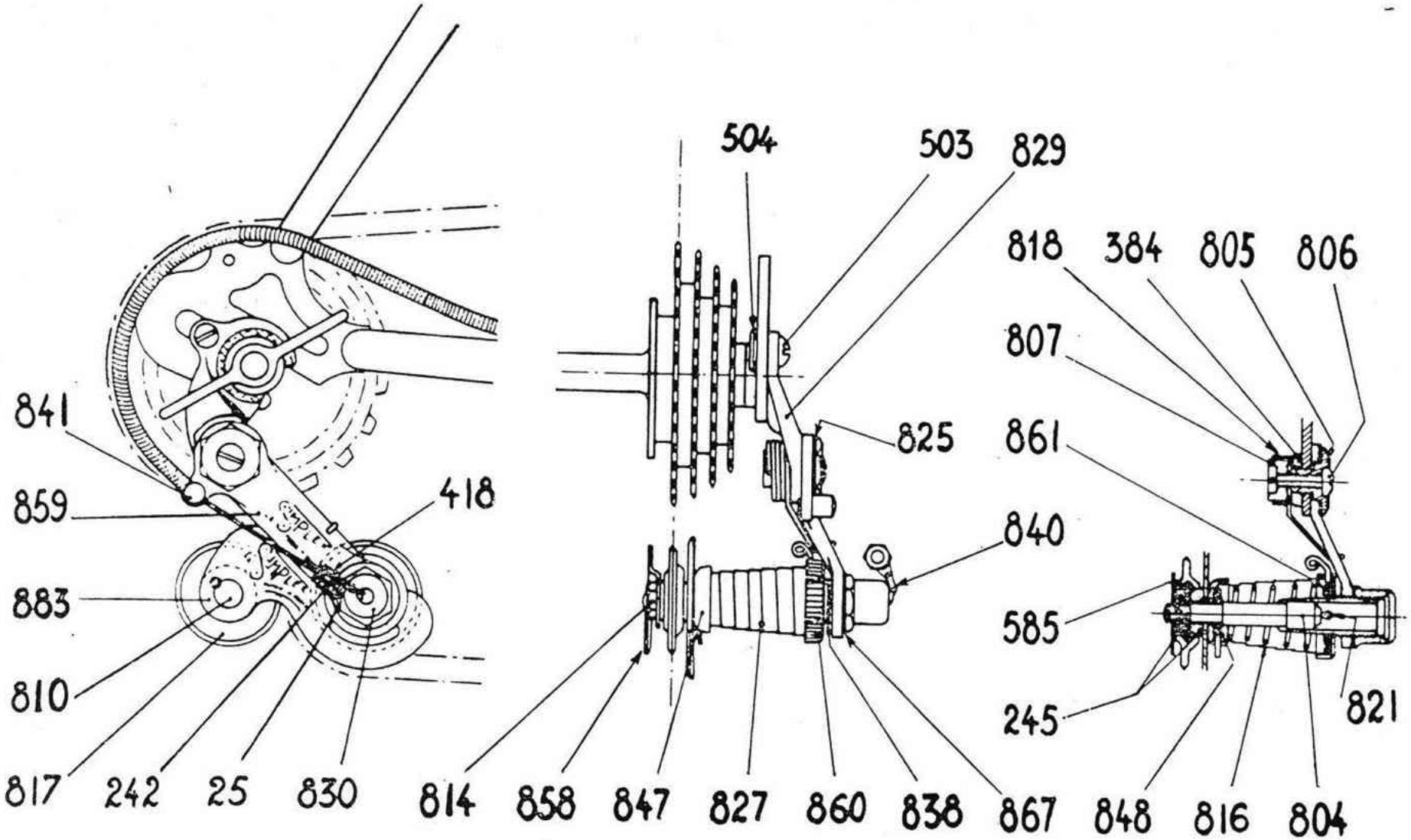
PROOF!

PROOF of the superiority of Simplex Gears is the fact that, for 1949, no less than 54 of the crack international professional teams disputing the major classic road races have chosen to fit Simplex "Tour de France" type derailleur gears. This is a greater number than all the remaining teams on various other gears put together.

Simplex gears scored right from the start of the season, being used by the winners of the opening events, Circuit de Het Volk (Belgium), Trophee Catox (France), and the Tour of Algeria, as well as the famous long-distance mountain climb, Mont Agel — all these in the first week of the international season.

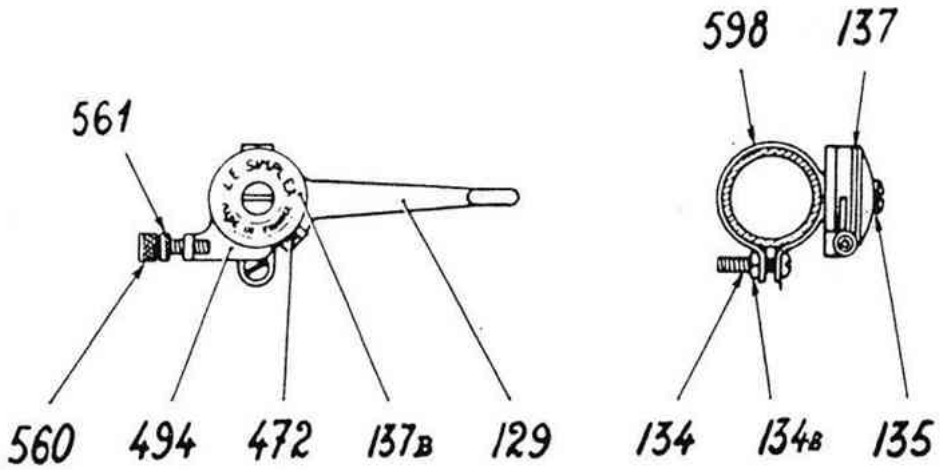
AS the season progressed, every international road classic was won on a Simplex gear, and almost invariably with a Simplex double chain-wheel, including :—

1st Tour of Italy (Fausto Coppi).
1st Tour de France (Fausto Coppi).
1st World's Road Championship (Rik Van Steenbergen).



FITTING A SIMPLEX DERAILLEUR

Spare Parts—Simplex Gears



When ordering, state type of gear, i.e., 3, 4 or 5 speed, and $\frac{1}{8}$" or $\frac{3}{32}$".

Control Lever

No.	Name	Each
—	Control lever complete with wire and casing	10/6
—	Control lever assembly	8/6
—	Inner wire	1/6
—	Outer casing	2/3
129	Control lever	3/3
134 134b	Bolt and nut for control lever clip ...	7d.

No.	Name	Each
135	Centre screw for control lever	4d.
137	Domed friction plate ...	9d.
137b	Domed outer plate ...	9d.
472	Dogged washer ...	9d.
494	Sector plate	1/9
560 561	Cable adjusting screw and nut	1/10
598	Control lever clip ...	3/–

Gear Assembly

—	Gear mechanism only, less lever and cable	23/6
242	Nut for draw bolt ...	3d.
245	Cones ... ... pair	1/6
384	Pivot screw lock nut ...	6d.
418	Draw bolt	9d.
503	Fixing screw	7d.
504	Nut for fixing screw ...	7d.
804	Shaft	3/3
805	Pivot nut	8d.
806	Pivot screw	8d.
807	Tension spring holder	1/2
810	Roller axle	6d.
810b	Roller complete (with cones and bearings)	4/6
814	Roller axle nut ...	4d.
816	Tension spring	1/8

817	Roller only	2/6
818	Traverse spring ...	1/8
825	Pivot washer	2d.
827	Dust cover spring ...	2/–
829	Fixing plate	4/–
830	Domed nut	1/8
838	Adjusting shaft sleeve	3/6
840	Toggle chain	3/–
847	Fixed cup	9d.
848	Washer...	2d.
858	Roller plate (dished) ...	3/6
859	Carrying arm	6/–
860	Knurled nut	3/4
861	Shaft locking washer ...	8d.
867	Washer for domed chain nut	2d.
838	Roller plate (flat) ...	3/6

Fitting Instructions

(for the Simplex 3, 4 or 5-speed, Tour de France type derailleur)

NOTE — Provided that the Simplex gear is correctly fitted and adjusted in the first instance, it will give thousands of miles of trouble-free riding or racing. Almost all the faults reported arise from incorrect fitting and faulty adjustment, therefore please follow these instructions carefully — a few extra minutes spent on installing the gear will save trouble later on.

1. Drop the rear wheel out, and fit the multiple sprocket fre -wheel. Note that the correct chain-line (provided the hub is intended to take a derailleur gear) is on the centre cog of a triple free-wheel, and mid-way between the second and third cogs on a quadruple free-wheel.

2. Place the fixing plate (No. 829 — see illustration on page 6) in the right-hand rear-fork end, with the shoulder nut (No. 504) on the inside, and the shoulders in the fork-end slot, and tighten up the screw (No. 503). Replace the rear wheel.

3. Bring the roller (marked No. 817 on the illustration) into line with the largest cog of the free-wheel, by slackening the domed nut (No. 830) and turning the knurled nut (No. 860). While adjusting, lift the trigger end (A) of the spring out of its notch in the knurled nut. If the derailleur mechanism is then too near the spokes, it will be necessary to fit a spacing washer between the free-wheel and the hub.

4. Check, by looking from the rear (as in centre illustration) that the rollers are then in line with, and parallel with the large cog of the free-wheel. If the mechanism has not been bent or knocked out of alignment, the rollers will be automatically parallel.

5. Fit the chain in position on the largest cog of the free-wheel, adding extra links as may be required, and allowing one extra link to give the chain enough slack for the derail action. It is important that the chain be riveted up — spring connecting links must not be used.

6. Check, by looking at the side of the mechanism (as in the illustration below) that the chain runs straight through the mechanism (as on left) and does not follow a curve (as on right). To adjust, lift the trigger (A) out of its notch in the knurled nut (860) and move it to another notch until the straight line of the chain is obtained.

7. To fit the control cable, unscrew the nut on the drawbolt at the end of the control chain (which passes into the domed nut (No. 830)) ; pass the inner cable of the control wire through the shoulder alongside nut No. 806, and then through the small hole in the drawbolt so that it passes between the end link of the control chain and the small washer. Do not tighten the drawbolt nut yet.

8. Loop the control cable along the chain-stay and up the down tube, avoiding any sharp bends (see illustration). Secure the control cable to the tubes of the frame at intervals, using short lengths of sticky tape. Secure the control lever in position on the down tube.

Fitting Instructions

9. As the control cable inner wire may stretch in time, do not use the adjustment at the lever end of the cable to make the preliminary adjustment. Put the lever right forward as far as it will go (this is the bottom gear position), pull the inner wire through the drawbolt as far as it will come without moving the mechanism, then tighten the drawbolt nut. For extra security, the projecting end of the wire can be turned back and around the drawbolt so that the wire is held twice, before tightening the drawbolt nut.

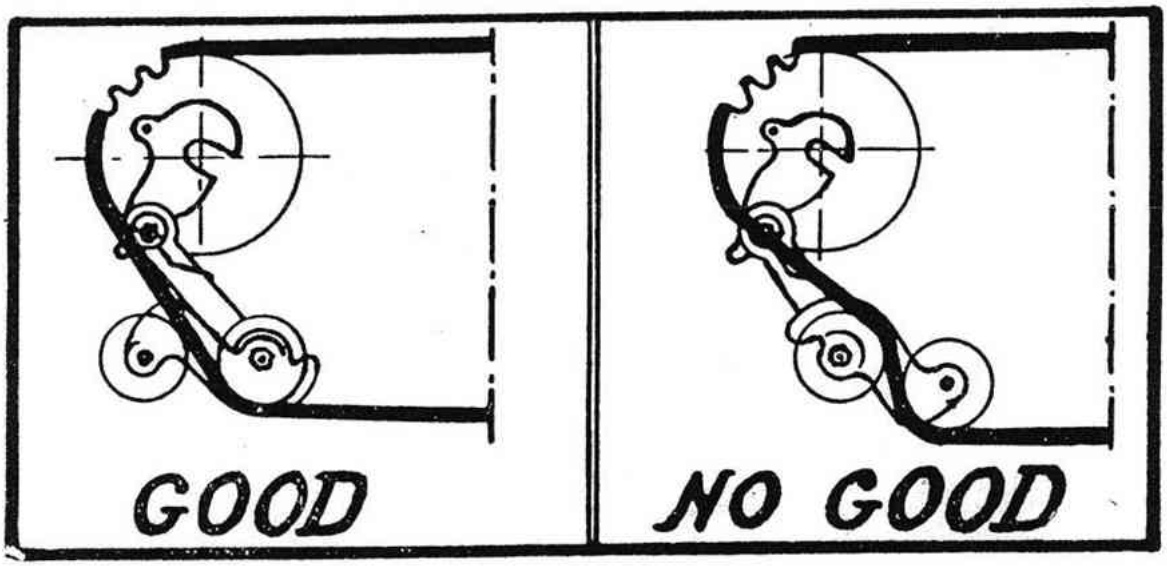
10. Check that the roller is then in line with the largest cog of the free-wheel, and adjust if necessary, using dome nut (No. 830) and knurled nut (No. 860) as before.

11. Check the tension of the pivot spring (No. 818 bis). This should be such that there is sufficient chain engaging the teeth of the cog, no matter what gear is in use. Adjustment is made by slackening the nut (No. 806) and turning the bolt on which it is mounted with a screwdriver, afterwards tightening the nut.

12. When correctly fitted and adjusted, the chain should pass in a straight line through the rollers (as illustrated below), and, when in top gear (that is, chain on smallest cog) the chain should wrap round half the number of teeth on the cog.

Maintenance — Lubricate from time to time, the inside of the spiral spring (No. 816) ; the inside of the domed nut (No. 830) through which the control chain passes ; and the cones and bearings of the two rollers. At long intervals, remove the control cable and work oil down the inner wire.

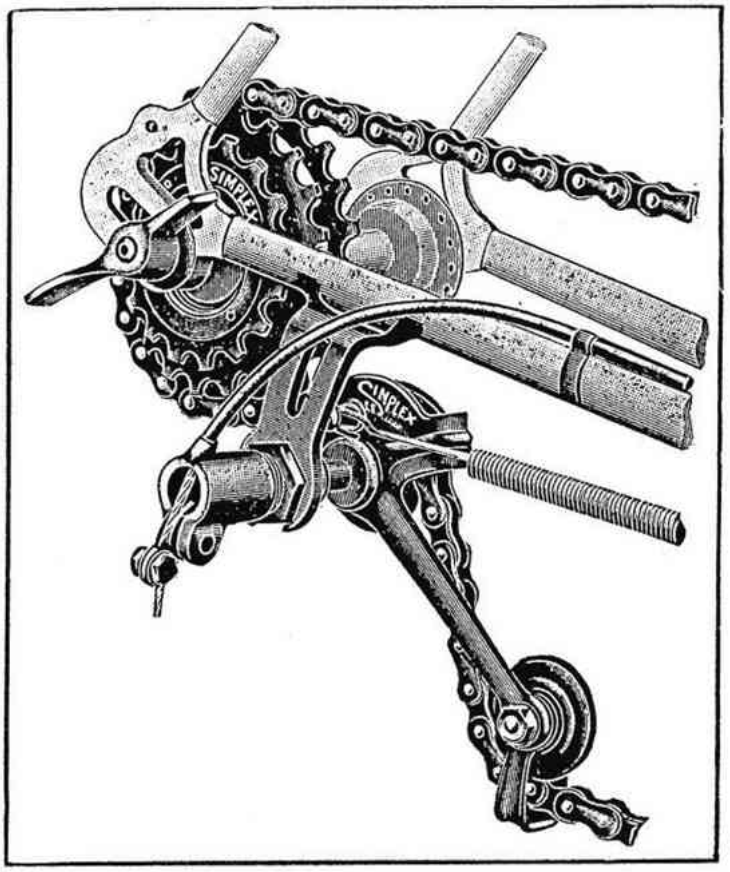
Do not lubricate the control lever action ; it is intended to work dry.



Adjust the springs to get the correct position of the mechanism, as on the left.

Simplex Gears

LIGHT TOURIST (3 or 4 speed)



THE Simplex Light Tourist derailleur gear has been designed for the tourist who requires a very widely spaced gear ratio — especially the "pass-stormer" who wants ultra-low gears for mountain climbs. The Light Tourist will accommodate gear changes varying from 14 teeth top sprocket to 28 teeth bottom — and the difference between any two adjoining sprockets can be anything within this range.

The gear is in one cluster, easily bolted on to the chain stay, just in front of the rear forkend, with the control lever on the top tube or down tube as preferred. (The model illustrated has the support arm brazed to the chain stay and this type of fitting can be supplied as an alternative). The Light Tourist, bolt-on fitting, can be secured to any standard frame without alteration.

With two jockey pulleys instead of pinions, the gear is exceptionally silent in running, and the resistance is much less. The gear complete weighs only 13 ounces.

Chains

ELIOS

A first class chain, made in Italy by the famous Elios company. Precision manufacture ensures smooth running on the sprockets, and the high grade steel, with super-hardened rollers, guarantees long life. Side plates are specially shaped to give easy gear changing on derailleur mechanisms.

$\frac{1}{2}'' \times \frac{3}{32}''$, 114 links. (For use with double chain-wheels and multiple gears of all descriptions.

$\frac{1}{2}'' \times \frac{1}{8}''$, 114 links. (For use on standard chain-wheels, single and triple free-wheels).

F.B. track chains

FOR use on $1'' \times \frac{3}{16}''$ track chain-wheels ; the track chain is of the inch pitch, block construction, specially designed to withstand the enormous strain of a sudden sprint. $1'' \times \frac{3}{16}''$, 52 links.

TOOL KIT and REPAIR OUTFIT

A "workshop in your pocket" is an apt description of the amazing MAFAC tool kit. Packed in one small tin box measuring only $3\frac{3}{4}'' \times 2\frac{1}{4}'' \times \frac{3}{4}''$, and weighing 7 ounces complete, are the following :

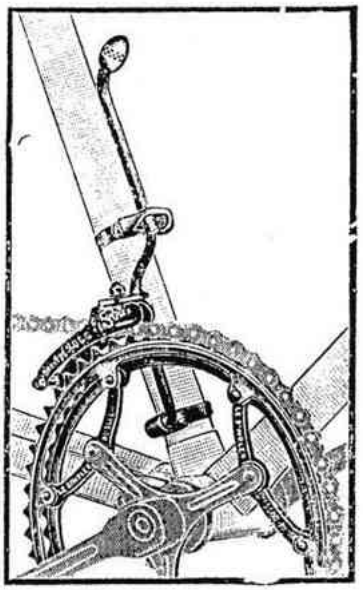
Four double-ended spanners.
Three tyre levers, shaped to a spanner at the other end.
Serrated spanner to fit all size cones, pedal spindles, etc.
Box spanner for reaching concealed bolts and nuts (such as hooded lever fixing bolts).
Nipple key (two sizes) and combination screwdriver (two sizes).
Tube of solution.
Packet of Rustine prepared patches for inner tubes, and grater for cleaning tube. Prepared canvas for fabric repairs.

Slip a MAFAC in your pocket and you are prepared for any roadside repairs.

Chain-wheel Derailleurs

SIMPLEX

"Competition"

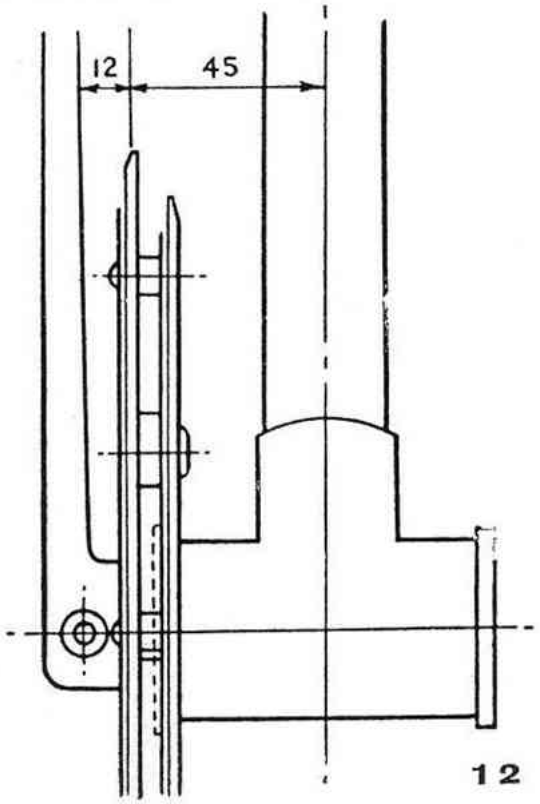


THE Simplex "Competition" chain-wheel derailleur is rapidly finding favour among the massed-start riders, and tourists in hilly districts, who need a bigger choice of gears than that provided even by the Simplex four-speed hub derailleur. By fitting a chain-wheel derailleur and a double chain-wheel, the number of gears is doubled . . . that is, eight gears in all, evenly spaced over the total range, so that the rider has the correct gear at a moment's notice for any riding condition, (If used with a five-speed Simplex, then 10 gears are obtained).

When a chain-wheel derailleur is used, it is essential to use a $\frac{3}{32}$" chain to get the necessary clearance ; the double chain-wheel (described on page 14) is the normal three-arm fixing, but it must be fitted on a crank with a slightly increased clearance (a gear-case-clearance crank will do, but the special Durax cranks for double chain-wheels are recommended) and the bottom bracket spindle naturally will have to be the gear-case-clearance type, to take the crank.

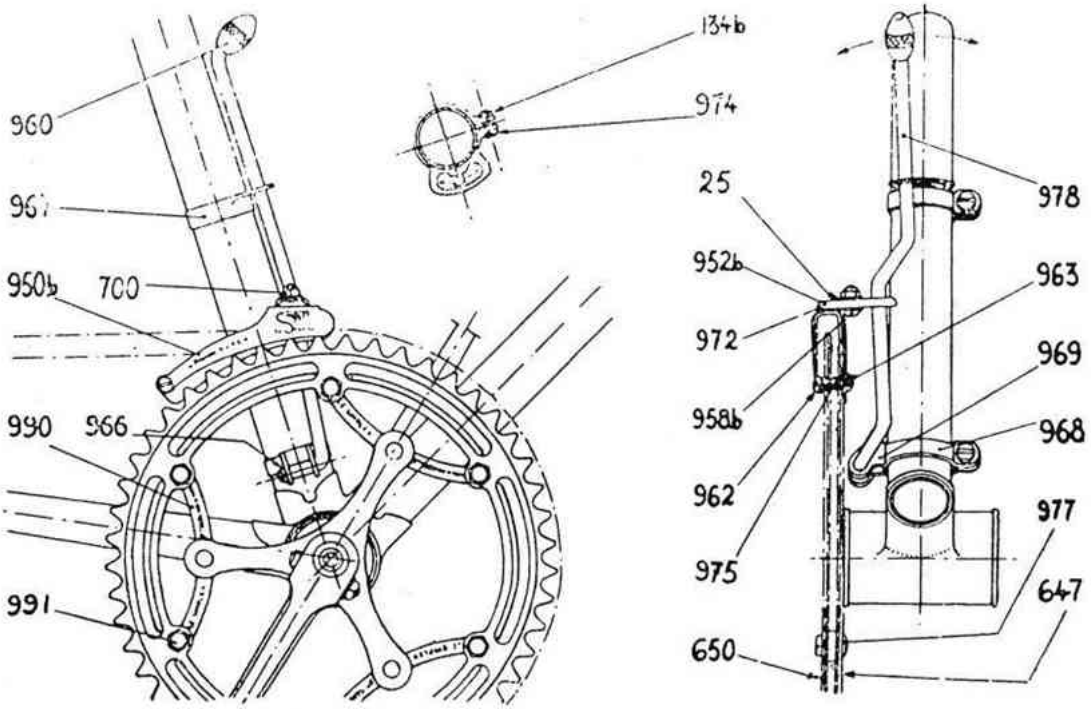
The Simplex chain-wheel derailleur mechanism is extremely simple and effective. A control lever is mounted on a pivot at the bottom of the seat tube, and operates in the "gate" of a simple bracket higher up the seat tube. Secured to the control lever is a derailling cage which spans the chain just before it turns over the top of the chain-wheel, and a simple movement of the control lever from one side of the gate to the other derails the chain from one chain-wheel to the other.

The action is even swifter and more positive than the hub derailleur, and racing men find it invaluable for a sudden switch into a bigger gear for a finishing sprint in a massed-start race — or for the quick drop into a lower gear on the last few yards of a hill when a breakaway is intended.



Left.—Sketch showing the essential clearances for fitting chain-wheel derailleur (dimensions in millimeters).

Chain-wheel Derailleurs



Details of the Simplex "Competition"

Fitting Instructions

Before fitting the Simplex chain-wheel derailleur, remove the chain from the chain-wheel and check that the double chain-wheel and crank offer the necessary clearance. The distance between the inside face of the crank and the points of the teeth of the outer (bigger) chain-wheel, must be at least 12 mm. The distance between the points of the teeth of the outer chain-wheel and the centre line of the seat tube should be 45 mm.

Fit the pivot collar (No. 954), which carries the foot of the control lever, around the seat tube.

> **Note** — Do not spring open the collar too widely, otherwise it will be difficult to bring the ends together to take the bolt. Open only very slightly, and then push into place on the seat tube, and secure as near the bottom bracket lugs as possible.

Fit the derailling cage (No. 950) on the underside of its support plate (No. 952) and check, by moving the control lever from side to side, then the cage can be moved across the teeth of the larger chain-wheel, without touching the teeth. Raise or lower the collar (No. 954) as necessary.

The mechanism is designed for all normal frame angles, and the derailling cage will follow the circumference of the chain-wheel (see illustration). But if the seat tube is exceptionally upright, or laying back, it will be necessary to bend the support plate (No. 952) to bring the cage concentric with the chain-wheel. Use an adjustable spanner, tightened on to the support, and twist gently but firmly, until the cage is correctly lined up.

Detach the gate (No. 956) from the gate collar (No. 957) and fit round the seat tube as shown. With the control lever in the right-hand end of the gate, slacken the nut securing the derailling cage to its support plate, and slide the cage until it is directly over the outer (bigger chain-wheel), then tighten the nut.

(Continued at foot of next page).

Double Chain-wheels

Simplex Double Chain-wheels

SIMPLEX double chain-wheels, for use with the Simplex chain-wheel derailleur, are available in combinations of 46–49 teeth, or 47–50 teeth (both $\frac{1}{2}'' \times \frac{3}{32}''$). As will be seen from a study of the gear chart on page 15, the three teeth difference enables the racing man to build up a carefully balanced range of gears.

The two chain-rings are joined together by three crosspieces and six specially shaped nuts and bolts, and are carefully tested so that the two rings are parallel and concentric. If the chain-rings are forced out of true following a crash, it will usually be found that the distortion is in the crank arms, and not in the rings, which naturally support each other. To correct, use a large adjustable spanner tightened down on to the appropriate one of the three arms on the crank, and lever into position.

The outer (larger) chain-ring is chromium plated, and the inner ring finished dull black. (See illustration on page 12).

Durax Cranks (For Double Chain-wheels)

Although the Simplex double chain-wheels have a normal three-arm fixing, it is necessary to fit them on a right-hand crank which has the extra clearance away from the chain-stay, to allow for the front derailleur mechanism to operate. An ordinary gear-case-clearance crank will do, but we strongly recommend using the Durax cranks for double chain-wheels, the right hand of which has the exact clearance required.

Note—gear-case-clearance cranks need to be fitted on a gear-case-clearance bottom bracket axle.

STELLA DOUBLE CHAIN-WHEELS and CRANKS

STELLA Double Chain-wheels, complete with cranks (which have the necessary extra clearance) are for use in conjunction with Simplex chain-wheel derailleurs.

The two chain rings are mounted on a three arm crank, and secured by bolts and nuts. Crank lengths are $6\frac{1}{2}$ inches, and chain-wheels are available in combination of 46–49 or 47–50. All chromium plated.

Fitting Instructions. (Continued from Page 13).

Check, by operating the control lever, that the cage moves across to the inner (smaller) chain-wheel. If the cage has too much movement from side to side, raise the gate collar (No. 957) slightly ; if too little movement, lower the gate collar.

Fit the chain over the chain-wheel by removing the rubber-covered bolt in the end of the cage and passing the chain round the appropriate chain-wheel, then refit the rubber-covered bolt.

Check, by operating the control lever, that the chain moves smoothly from one chain-wheel to another.

If the derailling cage drags on the top of the chain, adjust for clearance by raising the pivot cage slightly up the seat tube. Adjust the side movement of the cage as required by raising or lowering the gate collar on the seat tube. When adjustments are complete, check that all nuts and bolts are secure.

Gear Table *for double chain-wheels*

WHEN using a Simplex double chain-wheel, a careful selection of the sprockets on the free-wheel should be made, in order to avoid duplication of certain gears. For example, free-wheel sprockets should be two or more teeth different, (say 14–16–18–20, or 15–17–19–21). If there is only one tooth difference in the sprockets, then there will be duplication of gears, for a change of three teeth up on the chain-wheel (46 to 49) approximately cancels out a change of one tooth down on the free-wheel. Thus, a if 14–15–16–17 free-wheel were used, 46 × 14 gives a gear of 88·7, while 49 × 15 gives almost the same, 88·2, which is a waste of a gear. The same remarks apply when using a five-speed free-wheel.

Note —the following gears apply to 27 inch wheels only.

46–49 chain-wheels, all cogs 14 to 24.			47–50 chain-wheels, all cogs 14 to 24		
46 —	chain-wheel	— 49	47 —	chain-wheel	— 50
Cog	**Gear**	**Cog**	**Cog**	**Gear**	**Cog**
	94·5	14		96·4	14
14	88·7		14	90·6	
	88·2	15		90·0	15
15	82·8		15	84·6	
	82·7	16		84·4	16
	77·8	17		79·4	17
16	77·6		16	79·3	
	73·5	18		75·0	18
17	73·0		17	74·6	
	69·6	19		71·0	19
18	69·0		18	70·5	
	66·1	20		67·5	20
19	65·4		19	66·8	
	63·0	21		64·3	21
20	62·0		20	63·5	
	60·1	22		61·4	22
21	59·1		21	60·4	
	57·5	23		58·7	23
22	56·4		22	57·7	
	55·1	24		56·3	24
23	54·0		23	55·2	
24	51·7		24	52·9	

Recommended Ranges

The best balanced range of gears is obtained by using a combination of free-wheel sprockets two teeth apart.

Useful ranges are :—

46–49 chain-wheel, 14–16–18–20 free-wheel, gives gears of :—
94·5, 88·7, 82·7, 77·6, 73·5, 69·0, 66·2, 62·0

46–49 chain-wheel, 15–17–19–21 free-wheel, gives gears of :—
88·2, 82·8, 77·8, 73·0, 69·6, 65·4, 63·0, 59·1

47–50 chain-wheel, 14–16–18–20 free-wheel, gives gears of :—
96·4, 90·6, 84·4, 79·3, 75·0, 70·5, 67·5, 63·5

47–50 chain-wheel, 15–17–19–21 free-wheel, gives gears of :—
90·0, 84·6, 79·4, 74·6, 71·0, 66·8, 64·3, 60·4

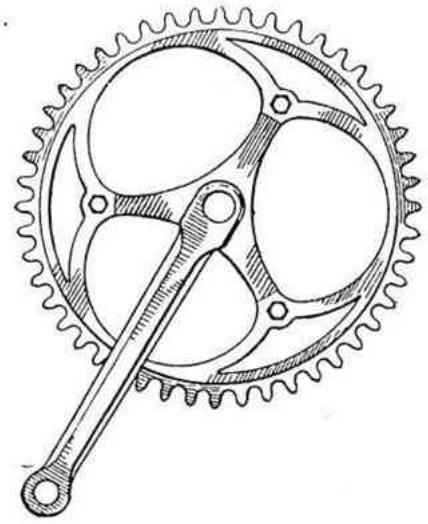
Chain-wheel Sets

DURAX

The Durax chain-wheel set, (three-arm fitting) comprising the pair of cranks and the chain-wheel, is the finest manufactured in France ; it is fitted as standard to most of the high grade racing machines, and is used by almost every one of the professional racing teams.

Of nickel-chrome steel, the cranks are tremendously strong, but being scientifically fluted on all four sides to remove excess metal without weakening the cranks, the weight of the complete set is only 24 ounces.

Three-arm fitting.
Crank length 6¾". Teeth 46, 47 or 48.
(In ⅛" or 3/32").

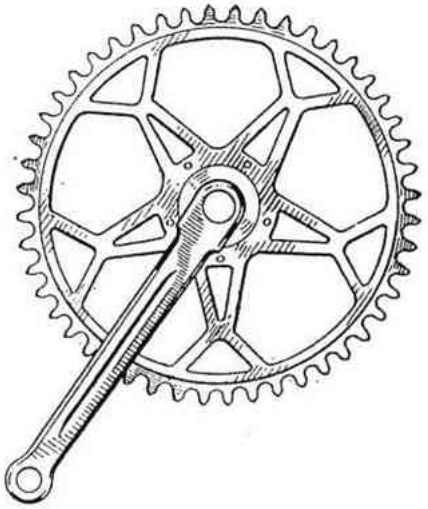


Durax three-arm chain-wheel

Five-pin fitting

The Durax chain-wheel set with five-pin fitting is similar to the three-arm, but the cranks are fluted on their front faces, and the weight of the complete set is 29 ounces

Crank length 6¾". Teeth 46 or 48.

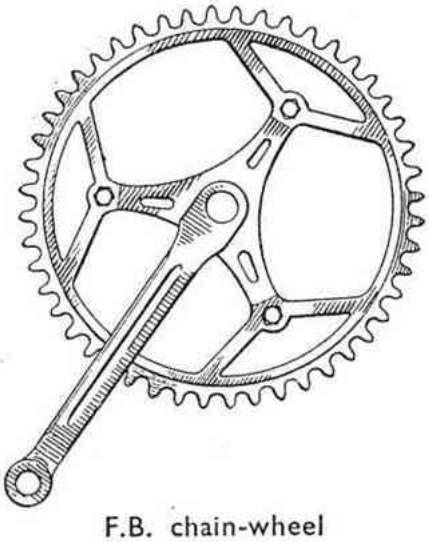


Durax five-pin chain-wheel

F.B. (Fratelli Brivio)

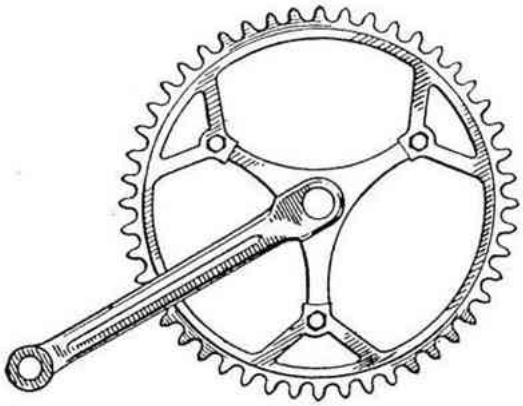
The F.B. chain-wheel set (three-arm fitting) is the finest all-steel set of chain-wheel and cranks on the market today. Made in Italy, from high grade nickel-chrome steel, chromium plated the F.B. has a very attractive design of chain-wheel, and the cranks are fluted down their faces. The weight of the complete set is 26 ounces.

Crank length 6¾". Teeth, 48 only.



F.B. chain-wheel

Chain-wheel Sets



STELLA (three-arm)

The Stella chain-wheel set (three-arm fitting) is of robust construction, in nickel-chrome steel, chromium plated, but weighs only 27 ounces the set.

The cranks are fluted along their faces, and the chain-wheel pattern is exceptionally neat.

Crank length $6\frac{1}{2}''$. Teeth, 46, 48 or 50.

All the fore-going chain-wheels have standard $\frac{1}{2}'' \times \frac{1}{8}''$ pitch teeth.

F.B. "INCH-PITCH" CHAIN-WHEEL SETS

OF the same high-grade quality as the F.B. half-inch pitch chain-wheel, the track set, with $1'' \times \frac{3}{16}''$ teeth, meets the exacting demands of the sprinter. Chain-wheel pattern is similar to that shown at the foot of page 14.

Crank length $6\frac{3}{4}$ inches, chain-wheels in 23, 24, 25, and 26.

Inch pitch cogs, for use with F.B. track set, in $1'' \times \frac{3}{16}''$ pitch teeth, in 6, 7 or 8 teeth.

(For inch pitch chains, see page 11).

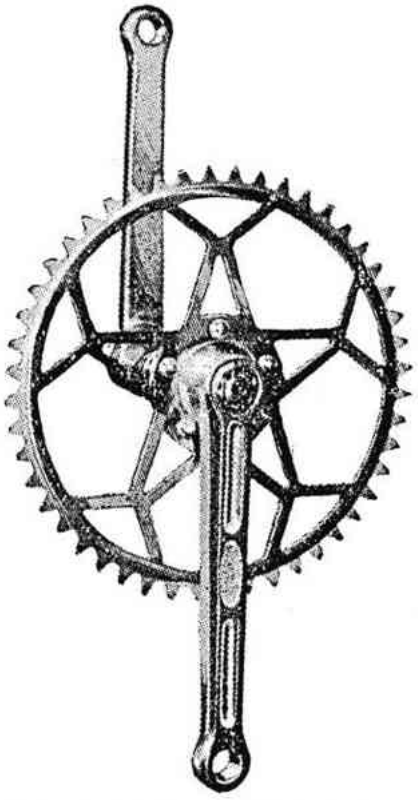
Stronglight Chain-wheel Sets

THE FAMOUS COTTERLESS TRANSMISSION

THE world-famous Stronglight cotterless chain-wheel and crank sets are the last word in modern transmission on racing and touring bicycles. A set includes all the fittings and tools necessary to convert any standard frame to a cotterless drive, abolishing forever the crudity of cotter pins and the irritating punching out and hammering home of the cotters, with the ever-present risk of damaging the machine — and the fingers.

Each set (packed in an attractive card box) comprises the special bottom bracket axle, bracket cups and lock ring, chain-wheel and crank set, and the special fitting tools.

The special bottom bracket axle has its ends shaped to a tapered square. The cranks slide on to the squared ends, and are pulled up tight on to the tapers by a strong steel set-screw with hexagonal head. A special tool is supplied so that the set screws can be pulled up dead tight.



No. 32. Stronglight Single.

A small alloy dust cap then screws into each crank, to mask the set screw. After the first 50 miles of riding, the cranks will have bedded down on to the axle, and the set screws must be tightened again. They should not then need any further attention.

Complete fitting instructions are provided with each set, and a special removing tool which pulls the cranks off without damage, when it is required to remove them.

STRONGLIGHT SINGLE. No. 32

A single chain-wheel set, with cranks and chain-wheel in super strong duralumin. Bracket axle in chrome nickel steel.

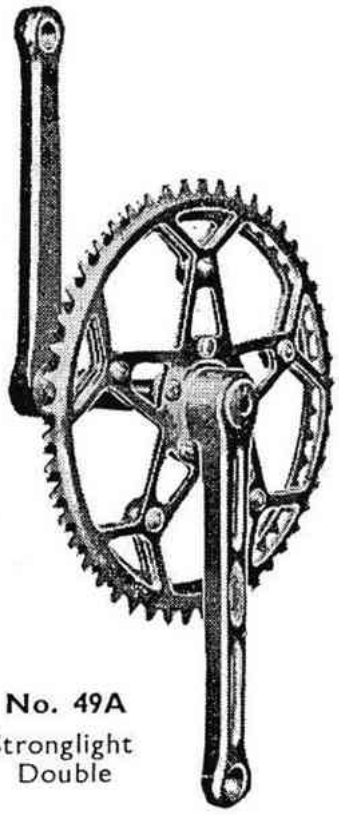
Chain-wheel in 46, 47, or 48 teeth, $\frac{1}{2}'' \times \frac{1}{8}''$ or $\frac{3}{32}''$. Crank lengths, $6\frac{1}{2}''$ or $6\frac{3}{4}''$.

STRONGLIGHT DOUBLE. No. 49A

A double chain-wheel set, with the two chain-wheels in duralumin (bolted together), and the cranks in steel (we do not recommend alloy cranks with a double chain-wheel set).

Chain-wheels 46 and 49, or 47 and 50, $\frac{1}{2}'' \times \frac{3}{32}''$. Crank length, $6\frac{3}{4}''$.

Stronglight Chain-wheel Sets



No. 49A
Stronglight
Double

STRONGLIGHT SPARES

Chain-wheels

Single. 46, 47, 48 ... ...

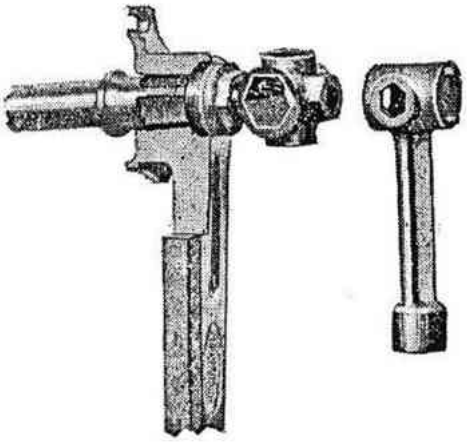
Double. (Outer ring only).
49 or 50 ... ...

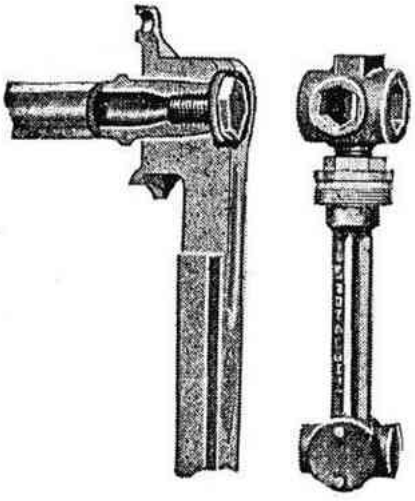
Double. (Inner ring only).
46 or 47 ... ...

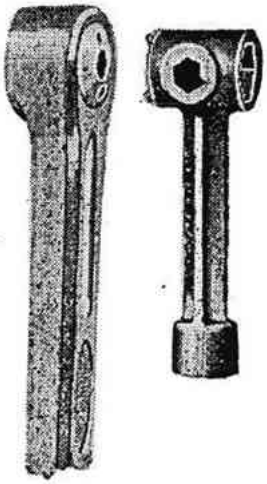
Chain-wheel–to–crank bolts and nuts, per set of 5 ... ...

Double chain-wheel bolts, nuts and collars, per set of 5 ...

Bottom bracket axle ... ...







Using the Stronglight tools

Top left ; using the special spanner to tighten the set screws and pull the cranks down on to the bottom bracket axle.

Top right ; using the removing tool to pull the crank off the axle.

Right ; fitting or removing the dust caps.

Free-wheels

MULTIPLE free-wheels, three, four or five speed, of best quality French manufacture, specially designed for use with derailleur gears, with the flat-topped tooth formation. Easy running, with continuous circle of ball bearings, and super-hardened cogs.

3-speed, flush type, for $\frac{1}{8}''$ chains. (Ref. F3F)

Available in :—16–18–20 ; 16–19–22 ; 16–20–24.

3-speed, boss type, for $\frac{1}{8}''$ chains. (Ref. F3B)

Available in :—14–16–17 ; 14–16–19 ; 14–16–20 ; 15–16–17 ; 15–16–19 ; 15–17–20.

4-speed, boss type, for $\frac{1}{8}''$ chains. (Ref. F41)

Top cog can be 14 or 15, second cog (fixed to block), 16 or 17, and remaining cogs up to 24 teeth.

4-speed, boss type, for $\frac{3}{32}''$ chains. (Ref. F43)

Top cog can be 14 or 15, second cog (fixed to block), 16 or 17, and remaining cogs up to 24 teeth.

5-speed, boss type, for $\frac{3}{32}''$ chains. (Ref. F53)

Top cog can be 14 or 15, second cog is 17 and fixed to the block, and remaining cogs up to 24 teeth.

FREE-WHEEL REMOVERS

SPECIAL free-wheel removers should be used when it is required to detach a multiple free-wheel — do not use a hammer and punch, as this may damage the free-wheel. Removers consist of simple U-shaped plate, which is fitted over the hub spindle, so that the dog ends engage in the slots of the free-wheel, and tightened down, using an ordinary wing-nut. A large spanner can then be applied to the sides of the plate, and the free-wheel unscrewed.

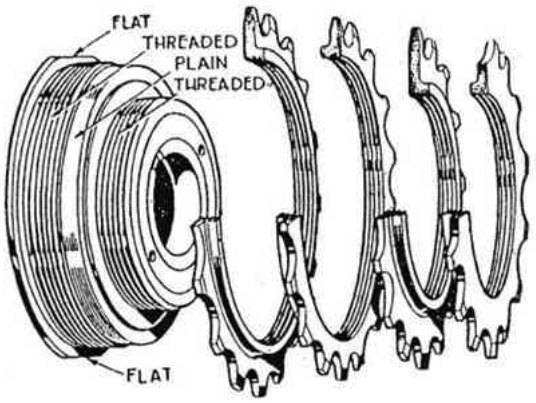
Eureka Free-wheel removers, boss type

Moyne Free-wheel Removers, boss or open type

EUREKA-4

THE Eureka four sprocket free-wheel is the finest multiple free-wheel on the market today. Every sprocket is precision cut, the teeth form being specially shaped, with flat tops, to suit the derailling action of change speed gears.

The body of the free-wheel is accurately machined and threaded so that all four sprockets are concentric and parallel — an important point if quick, easy gear changes are to be made. Easy rotation is assured by a double row of continuous ball bearings.



An exploded view of the Eureka-4

As will be seen from the illustration, all four cogs are detachable, enabling any combination to be built up from 14 teeth top gear to 24 teeth bottom gear (with the one exception that it is not advisable to fit a 15 teeth second sprocket when 14 teeth is the top, as there is not quite sufficient clearance for the chain. If 14 top is used, then 16 should be the next sprocket.

When fitting, the two largest sprockets are fitted shoulder to shoulder on the free-wheel body, and then the two smaller sprockets, also shoulder to shoulder, on the boss.

The Eureka free-wheel is available in either $\frac{1}{2}'' \times \frac{1}{8}''$ or $\frac{1}{2}'' \times \frac{3}{32}''$ sprockets.

EUREKA-5

THE Eureka five sprocket free-wheel is of the same high quality as the "four," with all five sprockets detachable. The bottom two sprockets screw on to the body, as in the four, and then the middle sprocket on to the boss. Then the top sprocket screws into the next-to-top, and this pair of sprockets screws on to the boss of the free-wheel body. Sprockets are available from 14 teeth to 24 teeth, and any combination can be made up. Available in $\frac{1}{2}'' \times \frac{3}{32}''$ only.

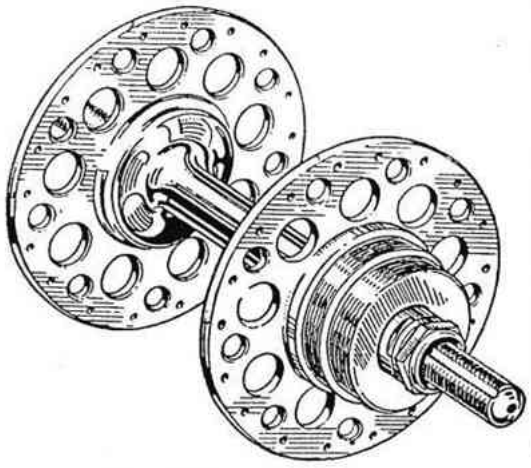
EUREKA SPROCKETS

Sprockets can be changed on the Eureka 4 and 5 to give any of the following combinations :

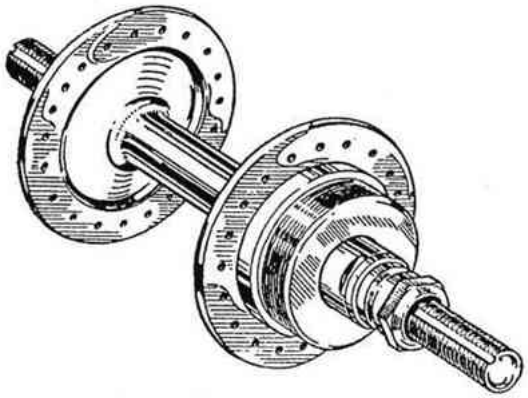
On the Boss (small diameter)	On the Body (large diameter)
14 to 19 inclusive	17 to 24 inclusive

Note that the 17, 18 and 19 teeth sprockets can be had in two sizes, to fit either the Boss or the Body. Please specify when ordering spares.

Hubs



The F.B. wide-flange



The F.B. normal flange

F.B. HUBS

THE F.B. dural hubs are the finest Italian-made hubs obtainable. Precision engineering unites the great strength of an all steel, pencil-thin barrel with the lightness of the alloy flanges. The cups and cones are accurately hardened and ground, to ensure easy running and long wear. Flanges are correctly drilled for English spoking systems (32–40).

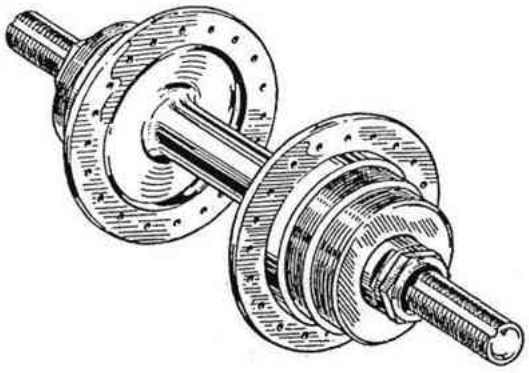
The wide-flange, superluxe hubs (as illustrated on the left) are ideal for racing. The rear hub is supplied in single or double sided, the single sided being threaded to take either a fixed wheel or a multiple free-wheel ; and the double sided, either fixed wheel one side and free-wheel the other, or both free-wheels.

THE F.B. normal flange hubs are similar to the wide flanged hubs described above, except that the diameter of the flanges is less (as illustrated on the left).

BETA HUBS

THESE hubs (shown on the right) are all-alloy, one-piece duralumin hub shell and flanges, with hardened steel spindle cups and cones. Of French manufacture, the alloy shell is specially toughened so that the spoke holes cannot pull out, and the bearings are hardened and ground for easy running. Drilled for English spoking, 32–40.

Rear hub in single sided (for free-wheel), or double sided (fixed and free-wheel, or double free-wheel).



Beta hubs

EXCELTOO HUBS

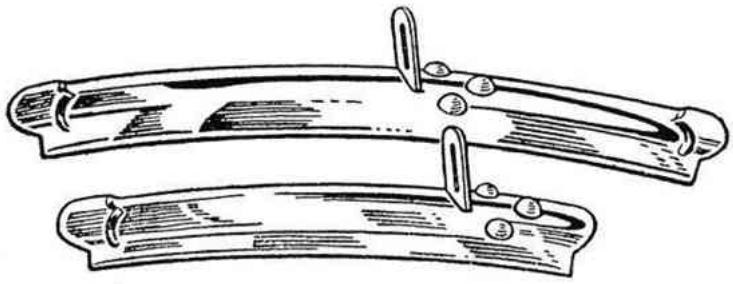
No. 1030. Steel, single or double-sided rear.

No. 250. Dural, single or double-sided rear.

No. 350. "Competition," dural, single or double-sided rear. A fine racing hub.

Large Flange. Dural, single or double-sided rear. The really super-luxe racing hub.

MAVIC GUARDS AND EXTENSIONS



LIGHTWEIGHT detachable front extensions for racing use, in high quality duralumin, for fitting on the front brake bolt. In two sizes, 9″ or 12″, the latter extending 5½″ behind the forks.

The long extension can also be fitted to the rear brake bolt, to serve as a rear racing mudguard.

MAVIC MUDGUARDS

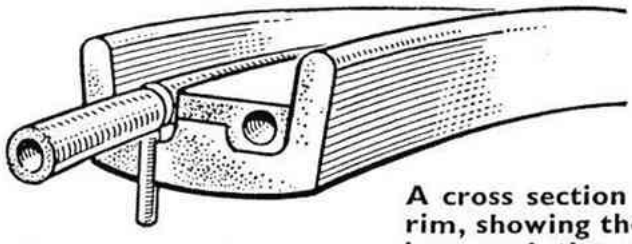
THESE brilliantly polished duralumin mudguards will make a distinctive feature on your bicycle. A deep U-section (similar to extensions shown above) provides complete protection against rain and mud. A strong one-piece stay (in dural) gives a rigid fixing, with freedom from rattles. Stay-fits over the top of the mudguard, secured by two eyebolts, and stay-ends fit into eyebolts in the fork-ends. Supplied complete with the 8 eyebolts, washers, etc.

WING NUTS (Sova)

THE Sova (alloy) wing nut has been specially designed for use in conjunction with Simplex gears, the wings are set out so that there is ample clearance on the rear wing-nuts for the gear, cable, etc. Made in specially toughened alloy, to fit British size spindles.

Fox Rims (wired on)

The sensational new rim — tyres on and off by hand alone



A cross section of the Fox rim, showing the deep well base and the rubber rim tape and detachable ring.

THE Fox rim, introduced for the first time into this country, is a sensational new development in wired-on rims. The bug-bear of removing and replacing a wired-on tyre, with the need to use tyre levers, and the risk of nipping the inner tube, *is abolished for ever.*

With a Fox rim, the tyre and tube can be removed by hand, without effort, and replaced just as easily.

As will be seen from the illustrations, the Fox rim has a deep well base, which gives sufficient extra depth to allow the wired edge of the tyre to sink in, allowing that much extra clearance on the other side of the rim, so that the tyre can be lifted off with the fingers.

The well base is filled with a double rubber rim tape. One tape is shaped to fit the base and one well, and fully protects the inner tube against projecting nipple heads and spoke ends. The other rim tape is in the form of a rubber ring, which is detached first, to give the necessary clearance for the tyre to be removed easily.

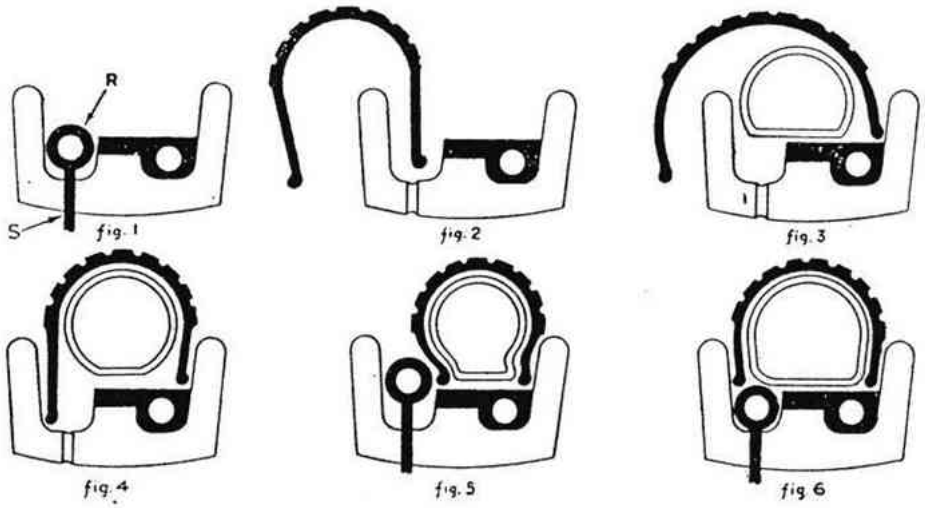
The rim itself is perfectly round, the exact circle being dead true in the vertical plane, and perfectly balanced, because the rim, after manufacture, is machine-turned to exact diamond-cutting perfection.

The rim is very rigid, robust, light and lively, because of the high quality of the duralumin alloy used, the large sides of the rim, and the central stiffening web. Another refinement is the special washer under each nipple, which transforms the nipples into true ball-and-socket joints, so that, when the spokes are tightened up, no unequal strain is thrown on to the rim.

The sides of the rim are machined dead flat and true, to give the greatest possible braking area.

The Fox rim is available in size 27″ × 1¼″, drilled 32 - 40 for English spoking.

Fox Rims (wired on)



Instructions.

To fit a tyre, first remove the rubber ring (R) by pushing upwards on the stud (S) until it is clear of the rim, and then stretching the rubber ring until it pulls clear of the rim (Fig. 1).

Fit the outer cover, with one edge resting in the well base left empty by removing the rubber ring (Fig. 2).

Then, when one edge of the tyre is fully on the rim, push it over to the far side (fig. 3), and fit the inner tube in the normal manner.

Pass the remaining edge of the tyre over the rim so that it drops into the well base (fig. 4), and when the cover is completely on, push the tyre edge across to the middle of the well base (fig. 5).

Refit the rubber ring, entering the stud (S) first into its hole in the rim, using the right hand, and with the left hand squeezing the tyre between finger and thumb, travel around the rim, fitting the rubber ring back into the well base. When it drops into place, the tyre will then take up its normal position (fig. 6) and can be inflated.

To remove a tyre, when deflated, squeeze the tyre together with the left hand, and with the right hand push out the stud (S) and detach the rubber ring. The edge of the tyre can then be lifted out of the well base left vacant, and the tyre and tube removed without using tyre levers.

SIMPLEX FORWARD

A new high-pressure (wired-on) tyre

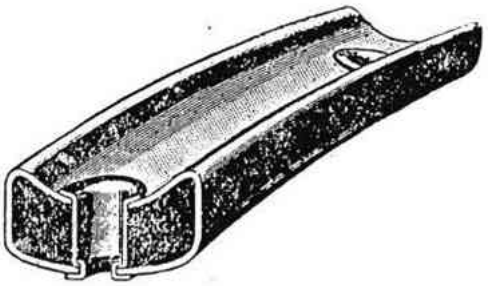
A very light and lively tyre for wired-on (high-pressure) rims, in 27″ only. Tread is of translucent amber rubber, with centre file for fast riding, and prominent non-skid side pattern. Walls are covered with very thin layer of pure white rubber, wet resisting and very smart in appearance.

Complete with inner tube to match.

Rims (Sprint)

MAVIC

THE Mavic racing rim (for tubular tyres), was created in 1934, after long researches to bring it to perfection, and it is now used in all the great international races. It is lighter than a wood rim of the same dimensions, weighing only 9 ounces.

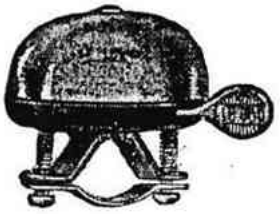


The Mavic rim, showing the patent ferrules which provide extra strength just where it is needed.

The Mavic is an exceptionally strong rim, partly because of the high-resistance duralumin alloy used, and also because of the patented system of ferrules at the spoke holes, which make a solid join between the top and bottom faces of the rim. The ferrules are water-tight, and water and mud cannot penetrate inside the rim. The sides of the rim are flat, giving perfect braking surface.

Suitable for either track or road racing ; drilled 32–40 holes for English spoking (no washers required). 27″ only.

LE COQ BELLS (Alloy)



A brightly polished bell, in duralumin, and weighing only 1¼ ounces. Gives a good, clear ring.

RIM TAPES (Boyeol)

TUBULAR tyres, when used for road work, must be fitted over a sticky rim tape to secure the tyre to the rim. This holds the tyre in position, even when flat after a puncture, but the tyre can still be peeled off to make a change. Follow the lead of " the heads " and use Boyeol sticky tape.

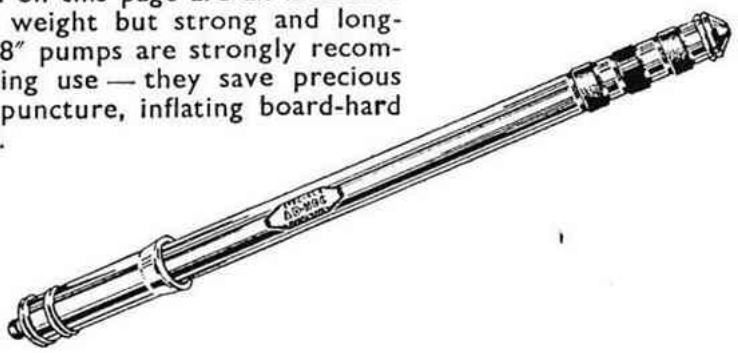
Each box contains enough tape for a pair of wheels.

(Also in display boxes, 1 doz. rolls.

Pumps, etc.

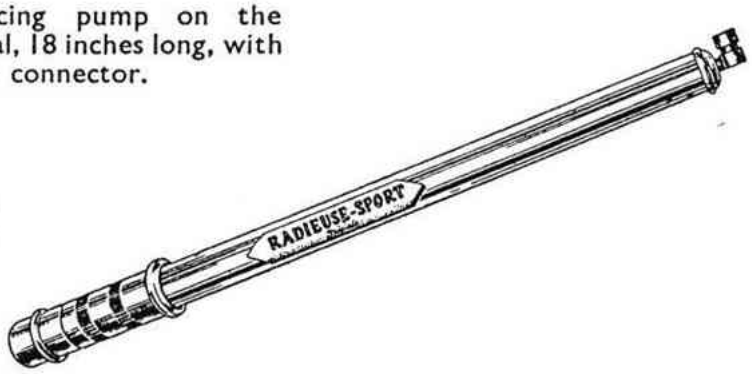
A good bicycle demands a good pump — the range listed on this page are all first-class pumps, light in weight but strong and long-wearing. The 18″ pumps are strongly recommended for racing use — they save precious seconds after a puncture, inflating board-hard in half the time.

AD HOC



The finest racing pump on the market. In dural, 18 inches long, with braided cotton connector.

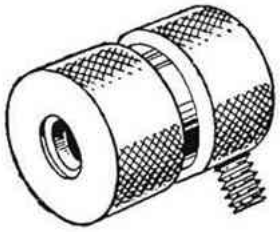
RADIEUSE



Available in two lengths, 15″ or 18″. In dural, with push-on adaptor for instantaneous connection to the valve.

PUMP CLIPS (STAR)

Light and durable, with long pegs to hold the pump secure against jumping out on bumpy roads.



PUSH-ON ADAPTOR (FLECTOR)

Converts a pump into a quick-acting racing pump. Screws into the pump end and remains there, ready for action at all times, obviating the need for a loose connector.

(Spare rubbers can be supplied).

Wolber Tubular Tyres

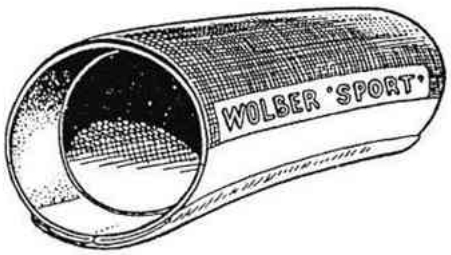
MOST famous of all French tubular racing tyres, "Wolber" have been used for the past fifty years by the winners of the major international classic road and track races. There is a Wolber tubular to suit every condition of riding, from a heavy fully rubbered training tyre for rough winter use, to the lightest possible track racing tyre. In 27" only.

All Wolber tyres are of the "sewn-up" type, and punctures can quickly be repaired by cutting the stitching along the base in the area of the puncture, pulling out a short section of the inner tube, repairing in the normal manner, and re-stitching the base.

SPORT BLUE

A smart tubular for all round racing; weight 15 ounces, linen impression tread offers no road resistance, and yet is non-slipping in the wet. The rubber tread is a light blue, giving a colourful appearance to the tyres.

Suitable for time trails, massed start racing and general touring.



Sport Blue

TOUR DE FRANCE

As its name suggests, a racing tyre specially developed to meet the gruelling demands of the month long, 3,000 miles Tour de France race. As nearly un-puncturable a tyre as can be made. consistent with retaining a light and lively fabric and tread.

Weight is 16 ounces, tread is black, file pattern, very fast and non-skid. Fabric is very fast and light, the extra weight going into the tread. Recommended for the rider who wants a tyre to stand up to every type of racing, from 25 miles to 24 hours, and massed start racing even on the worst surfaced of circuits.

Tour de France

W.5

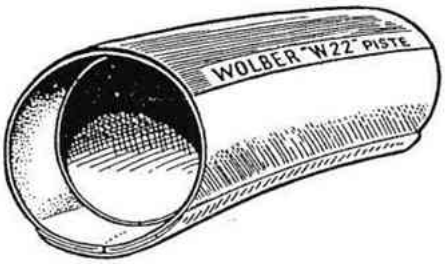
The ideal tyre for fast, short-distance work on the road, weighing only 12 ounces, with an exceptionally fast and lively fabric. Tread in black, linen-impression for non-skid.

W.3

A similar tyre to the W.5, but slightly heavier to stand up to longer distance work, or inferior roads. Weight 14 ounces.

W.22 (track)

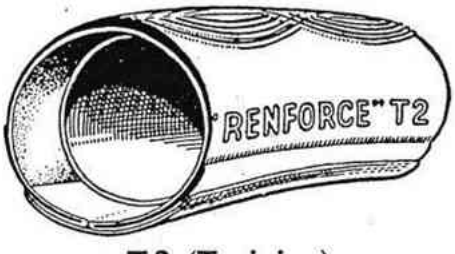
Specially designed for racing on hard tracks, such as Herne Hill or Fallowfield. Weight only 9 ounces, with narrow section smooth red band on an ultra-light fabric, with thinnest possible inner tube.



W.22 (Track)

T.2 (training)

A sturdy, fully rubbered tubular tyre for the cyclist who likes to ride all the year round on tubulars. Weight is 20 ounces, a sturdy fabric being fully covered with rubber, the tread having a special non-skid design. Will stand up to the roughest roads, and, being fully rubbered, is fully resistant to the wet. Note, this tyre must NOT be stuck to the rim. Use only a sticky tape.



T.2 (Training)

T.4 (training)

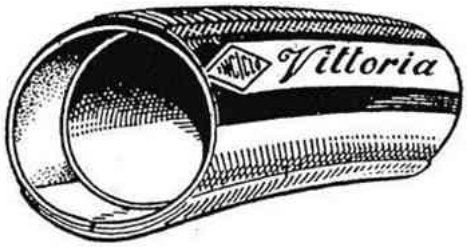
A substantial tubular for training or rough-stuff races, open sided for speed, but with sturdy tread for rough going. Weighs 18 ounces, with black, linen impression tread.

Inciclo Tubulars

THESE Italian tubular racing tyres are made to a very high standard, with lightest possible inner tubes and carcass, and highly resistant rubber treads. Available in 27″ only.

VITTORIA

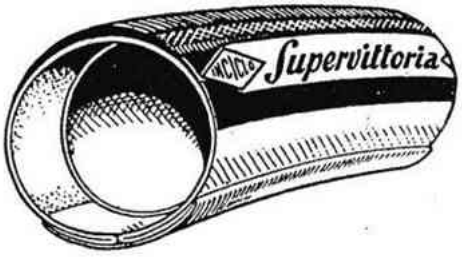
A fast tubular for road racing over all distances, and massed start racing over bad roads. Weight 12 ounces, black, file pattern tread of a special non-skid design.



Vittoria

SUPERVITTORIA

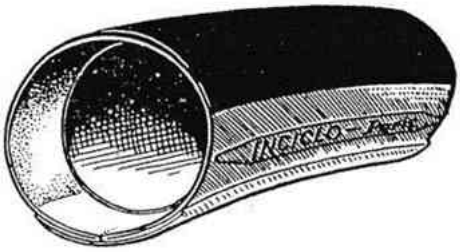
Similar to the Vittoria, but with lighter fabric, thinner inner tube and faster tread. Weight only 10 ounces. Intended for use in short distance time trails and massed start racing on good circuits, the Supervittoria however, has been successfully used in such races as 24 hours time trails, Isle of Man international massed start, world's championship, etc.



Supervittoria

PARIS TRACK

A super light tyre for racing on hard tracks, Herne Hill, Fallowfield, etc. Weight only 6½ ounces, with super light inner tube giving maximum speed, lightweight fabric, and thin, narrow section, black tread.



Paris Track

GARDIOL TUBULARS

THE very finest quality Italian racing tyres, as used by Reg. Harris (world's champion) Gino Bartali, Elio Frosio (world's champion), Louis Gerardin, Jean Robic, Jeff Scherens, etc., etc.

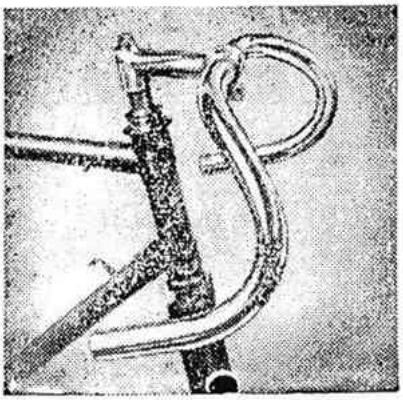
Mille Miglia — a sturdy all-purpose tubular, weight 16 ozs. Suitable for training, rough stuff, etc., but still fast enough to be used for time trials, massed start, etc.

Milano — a hand-made racing tubular, for all types of road work. Weight 13½ ozs. Cotton fabric, black non-skid tread.

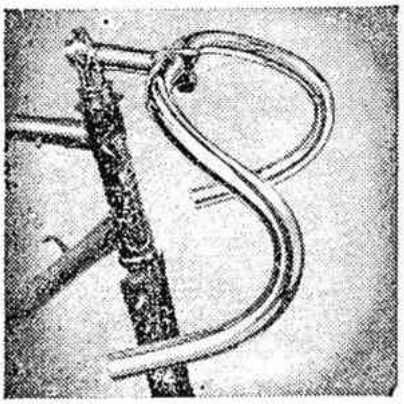
Campionato—the perfect speed tubular for road work, weighing only 10 ozs. Extra light cotton fabric, side walls treated to resist wet, black non-skid tread.

Invincible (track) a super-fast tyre for hard tracks. Weight 7¾ ozs. Finest light cotton fabric, black tread.

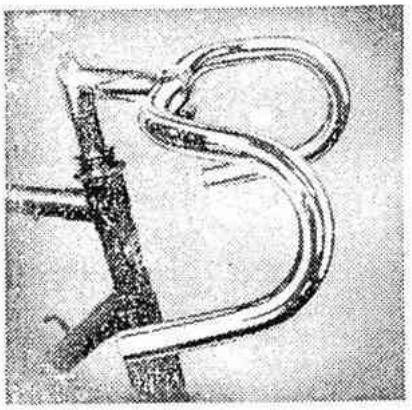
Handlebar Bends and Stems



AZUREEN Bend



PELISSIER Bend



CRITERIUM Bend

AVA

WE can now supply the genuine AVA duralumin handlebar bends and stems of world-wide renown. Bends (of $\frac{15}{16}$" diameter) are specially strengthened at the centre, where strain is greatest, and with an increased section to 1" to fit the stem clip without using a packing piece.

The AVA stem has a 3" forward extension, with a long lapped lug giving greatest possible strength, and expander bolt fitting.

AVA are available from stock in the following patterns :—

AZUREEN, for path or massed start, 15½" wide × 6" drop.

PELISSIER, for path or massed start, 14½" wide × 7" drop.

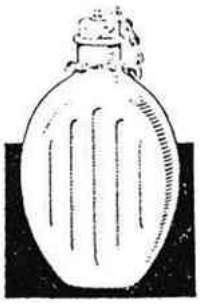
CRITERIUM, for general purposes (long, flat "top" makes it a good touring bar), 15" wide × 5¼" drop.

TIGRA handlebar stems

A smart duralumin handlebar stem, of girder pattern construction, 3" forward extension, expander bolt fitting. Available in plain, (self coloured), or with extension coloured red or blue.

Feeding Bottles and Cages

FEEDING bottles and cages are now available in pre-war quality, made from highest grade duralumin alloy. Bottles are specially treated so that they will not corrode, and contents always taste fresh.



The Pocket Flask

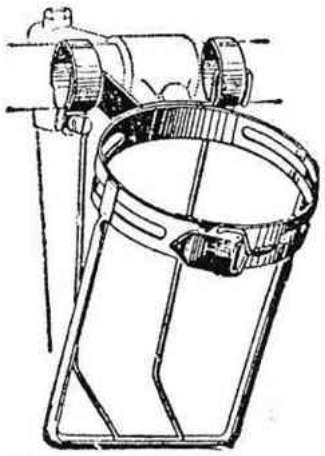
BOTTLES

"Emesse" feeding bottles, standard size, horizontally ribbed for extra strength.

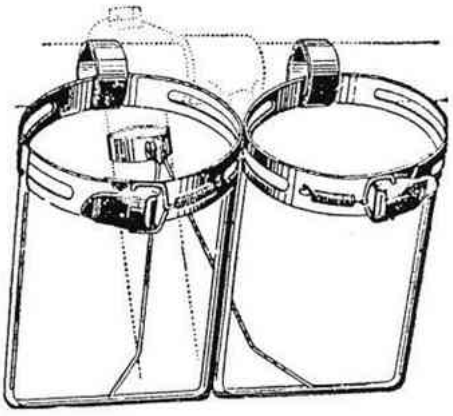
POCKET FLASK

"Emesse" pocket flasks, to fit into the racing jersey pocket. Contents approx. 1/3rd pint, sealed with a cork.

"Emesse" Bottle



V. & W. Single Cage



V. & W. Double Cage

V. & W. CAGES

Strongly made in flat strips of duralumin, with special spring-loaded safety catch to retain bottles in position. Catch can be flicked open in a second to release bottle. Available to take one or two bottles.

SIMPLEX CAGES

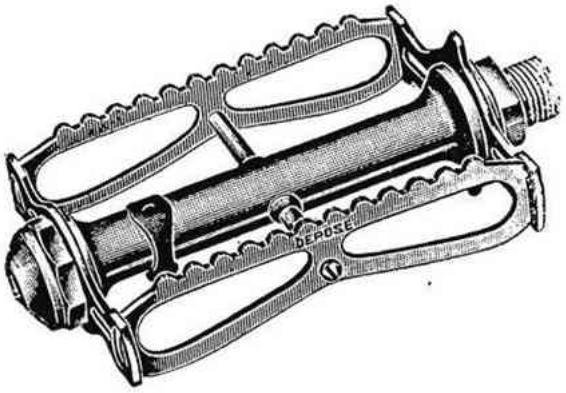
The famous Simplex bottle cages, of wire construction. The special design of wire cage holds the bottles securely, and without rattle.

Available to take one or two bottles.

Lyotard Pedals

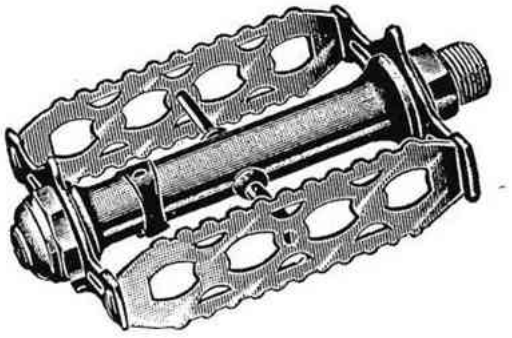
THE "Lyotard" pedals illustrated on these pages are the product of the biggest manufacturer of pedals in the world. Pierre Lyotard, the original designer of the world-famous Quill pedal, makes nothing but the best, and each of the pedals listed is specially designed for its particular purpose, and of a quality that ensures long life and easy running.

No. 15 S
"FAUCHEUX"



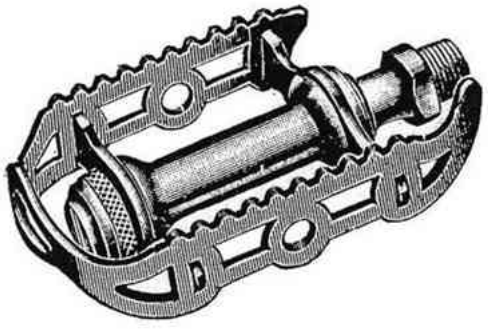
THIS is the most popular of the all-steel racing pedals, and it is ideal for the rider who mixes track and road work. Single sided, of a very neat design, hollow spindle, solid centre barrel. Chromium plated throughout. Width 3½", weight 6½ ounces.

No. 15 B
"TOUR de FRANCE"



AS its name indicates, originally designed for use in the month-long Tour de France, the toughest cycle race in the world. Double sided, all steel, hollow spindle, solid centre barrel. Chromium plated throughout. Width 3½", weight 7½ ounces.

No. 45 B
"QUILL" (Steel)



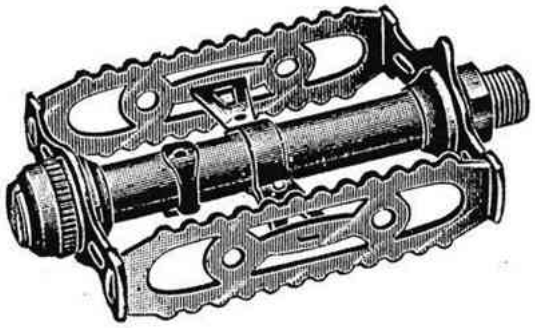
A favourite with the all-round rider, and especially with those who tour and race on fixed wheels, for the special Quill design makes cornering much safer, the curved-up outer plate preventing the pedal touching the ground when cornering at speed. Single sided, hollow spindle, solid centre barrel. Chromium plated throughout, weight 6¼ ounces.

Lyotard Pedals, etc.

No. 45 ter "QUILL" (Alloy)

A similar pedal to the Quill described above, but with Duralumin alloy barrel and frame, on a hardened steel spindle. Weight only 4¼ ounces.

No. 240
"RACING" (wide)

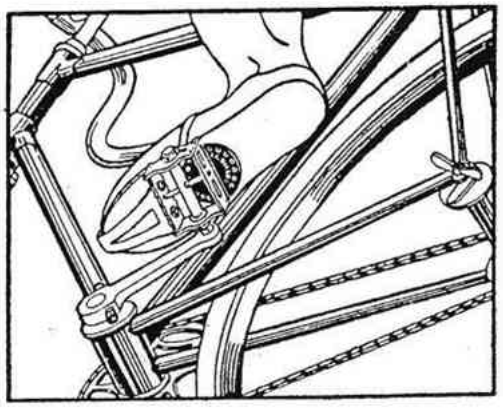


A lightweight, double-sided racing pedal, also ideal for long distance touring. Duralumin frame and barrel on hardened steel spindle. Width 4″, giving a very comfortable foot position for the bigger rider. Weight 5½ ounces.

No. 460 "RACING"

SIMILAR to the wide racing pedal described above, but slightly narrower across the frame, 3½″. Weight 5½ ounces.

SIMPLEX
Shoe Plates

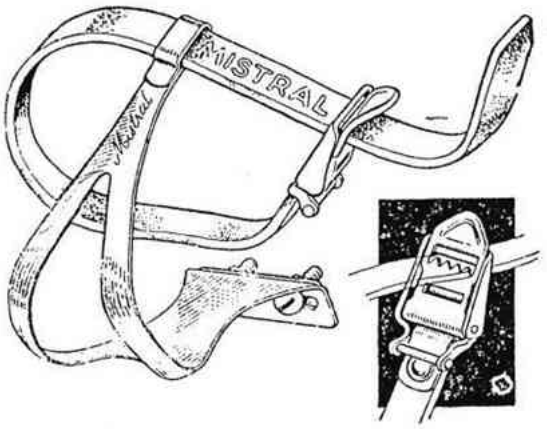


THESE easy-to-fix shoe plates are in special hard rubber, so that the plate does not hurt the foot when walking. The two slots in the face give a choice of positions on the pedal.

Also supplied on a card of six pairs.

Toe-clips and Straps

MISTRAL

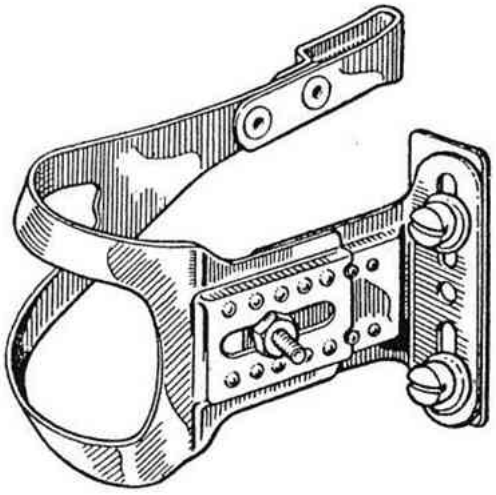


A first-class combination of spring steel toe-clip and chrome leather strap (of finest French manufacture) which will stand up to all conditions of racing. The straps are specially treated to resist wet and mud ; the patent quick-release buckle has no springs to rust and break, and can be released instantly.

When tightened, the strap grips the foot and cannot possibly slip, even under the most vigorous sprinting. The clips are of spring steel, rustless, and specially shaped for foot comfort.

AUTOMATIC

(Adjustable)



A toe-clip adjustable for length, to fit any size foot. The two parts are secured by a nut and bolt, and the overlapping portions are prevented from slipping by interlocking studs giving a choice of five separate and positive positions.

In best quality spring steel, chromium plated.

SCHERENS

THE celebrated Scherens toe-clips, as used by the seven-times world's sprint champion. In super-quality spring steel, chromium plated.

MADAME

A spring steel toe-clip specially designed for the lady rider. Chromium plated all over. Can also be supplied with leather protection round the bend of the clip, to prevent chafing the shoes.

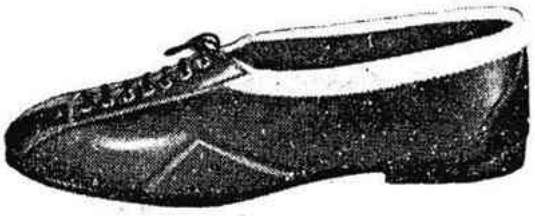
SCHERENS

AN extremely comfortable cycling shoe, with lacing carried well up the instep, giving a very snug fit. Padded with suede around the top to prevent chafing. In chrome willow calf, medium tone of brown.

Scherens

AERTS

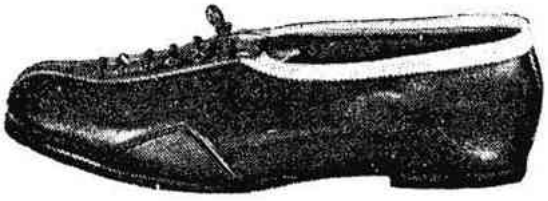
A very hard-wearing shoe, with best quality leather soles and box calf uppers. Very popular for racing, being light and comfortable, with rigid sole. Black with white piping round top. As used by Jean Aerts, former world's road champion.



Aerts

MAES

A very smart shoe, with strong leather sole and box calf uppers. Light and comfortable. In tan, with white piping round top. As used by Sylvere Maes, the great Belgian champion.



Maes

SCHOTTE

SPECIALLY designed by Brik Schotte, 1948 world's road champion for his own use. The reinforcing patches on the sides are carried higher than usual, to give full protection against the pull of the toe strap, and the toe patch is wider than usual, so that the toe-clip cannot chafe the upper. In medium tone of brown, with darker brown side and toe patches.

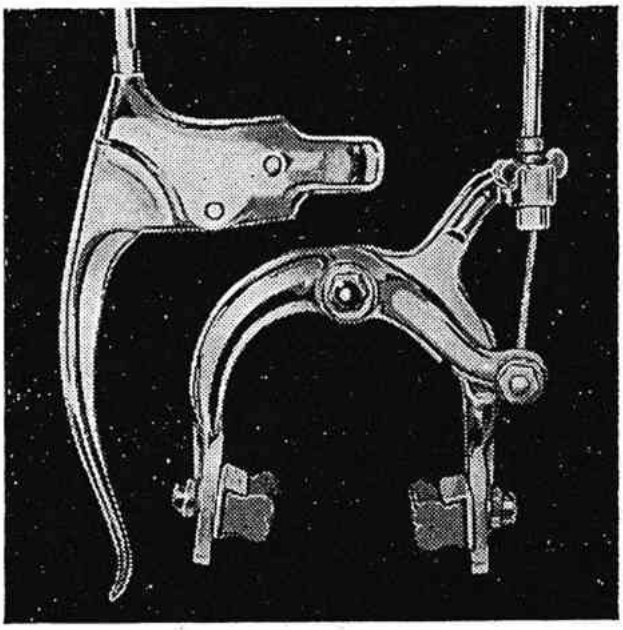
PELISSIER

THE very latest cycling shoe, for track or road work. In black glace kid, lacing high up the instep. Very light, comfortable, and exceptionally supple for easy pedalling.

Brakes

The ALP

(Champion de France)

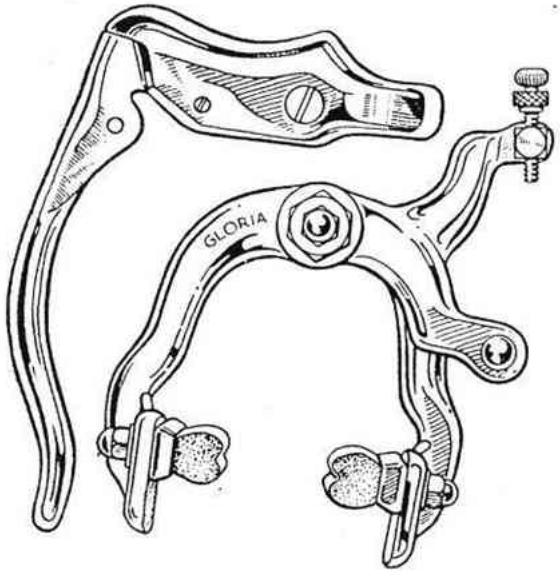


THE very latest caliper brake incorporating all the refinements demanded by the racing man and hard-riding tourist. A unique feature is the quick-release cam action on the cable stop, which allows the brake to be instantly slackened off, to provide the extra clearance required when removing or replacing a wheel.

The brake is made in specially toughened duralumin, the brake stirrup being of ge..erous proportions for maximum strength and clearance over mudguards.

The hooded lever is beautifully shaped to the hands, and has a strengthening rib on the underside. The lever is secured to the handlebar bend with a single, easily accessible, screw. Outer cables are covered with waterproof plastic, coloured silver, and "La Vipere" studded brake blocks are fitted to both front and back brakes. Sold only in pairs.

The GLORIA (Tour de France)



THE Gloria has been the most popular caliper brake for many years, and is widely used both by Continental and British racing men. It is of simple, but robust construction, in toughened duralumin, with a strong double coil spring, giving smooth action and a positive release.

The front stirrup is of the shallow pattern, to reduce the strain on the crown when braking hard, and the rear stirrup is the deep pattern.

The levers are the popular hooded-lever pattern, giving a comfortable grip round the clip when riding "on the tops," and with a gracefully curved lever to fit the hand. A single screw, out of sight under the clip, secures to the handlebars, a wedge on the screw giving a very rigid fixing.

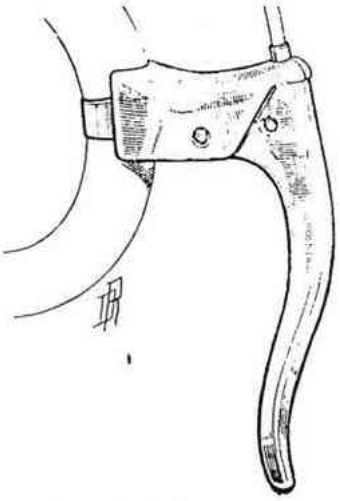
Brake-levers etc.

HOODED LEVERS

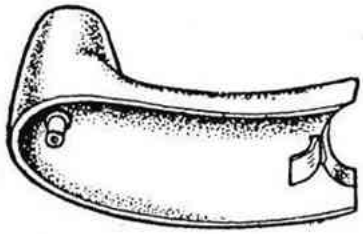
CONVERT your brakes to the modern, hooded lever pattern. Hooded levers give a more comfortable grip when riding "on the tops," with fingers looped round the lever clip, and the shaped levers are much more comfortable when braking action is wanted. "Mafac" levers are sold singly, but "Alp" levers only as a pair, being made right and left-handed.

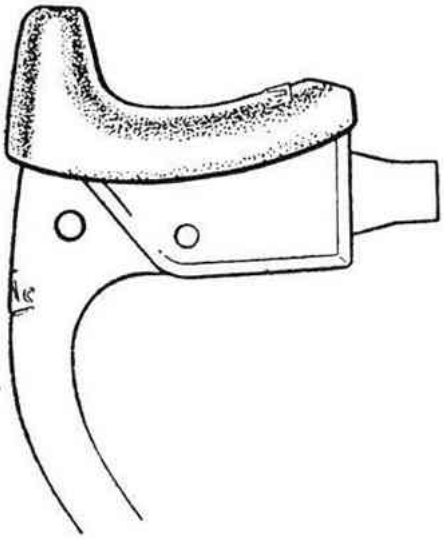
MAFAC. (As illustrated on right).

ALP. (As illustrated, page 36).



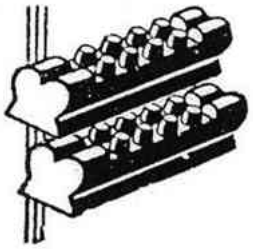
MAFAC LEVER





HOODED LEVER PADS

ABOLISH hand fatigue on long runs by fitting the Mafac rubber pads over your Mafac hooded levers. As will be seen from the illustration, the pad slips over the top of the lever, to provide a shock-absorbing cushion when riding "on the tops." Supplied with our Mafac levers, or separately for fitting to your existing Mafac levers.

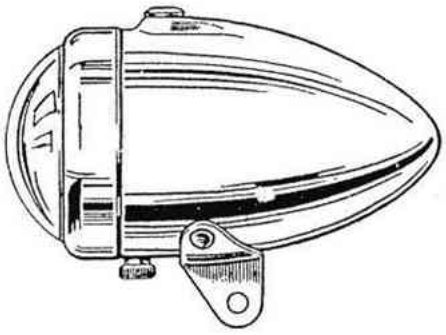


La Vipere Brake Blocks

THE studded brake block that gives complete braking, under ALL conditions. Come rain, come mud, the rounded studs of the "Vipere" block grip the rim, be it alloy, steel or wood, and bring you smoothly to a standstill.

(Supplied on a Card of 12 pairs).

JUX Dynamo Sets

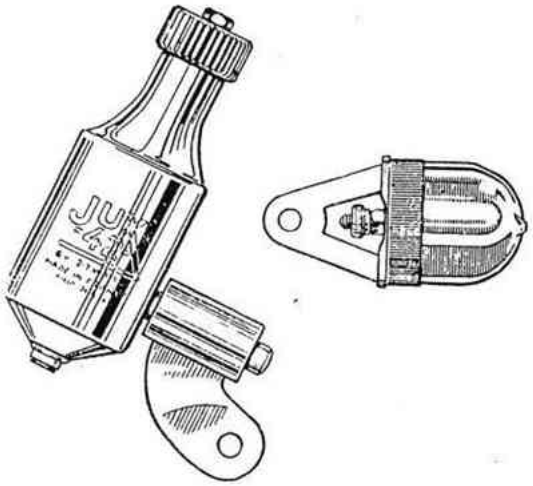


Complete with all wiring and fixing brackets.

THE world-famous JUX dynamo lighting set is one of the lightest, in weight, on the market. Thanks to its alloy construction, the complete set of dynamo, headlamp, tail lamp, brackets and wiring weighs only 15 ounces.

The dynamo, of robust construction, gives the minimum of drag ; the light is sufficient even at the slowest speeds, and the bulbs are fully protected against burning out at high speeds.

The headlamp, of a pleasing torpedo-shape design, has a highly polished reflector, and an indicator lens let in the top, so that at the slowest possible speeds the rider can check that his front lamp is alight.

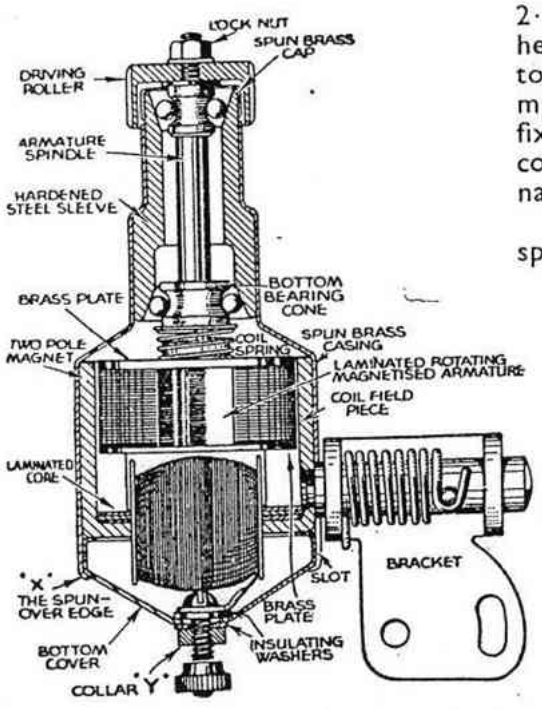


The tail lamp, of plastic construction, gives an all-round glow, so that the rider is fully protected, and moreover can see the glow on the road without turning fully around.

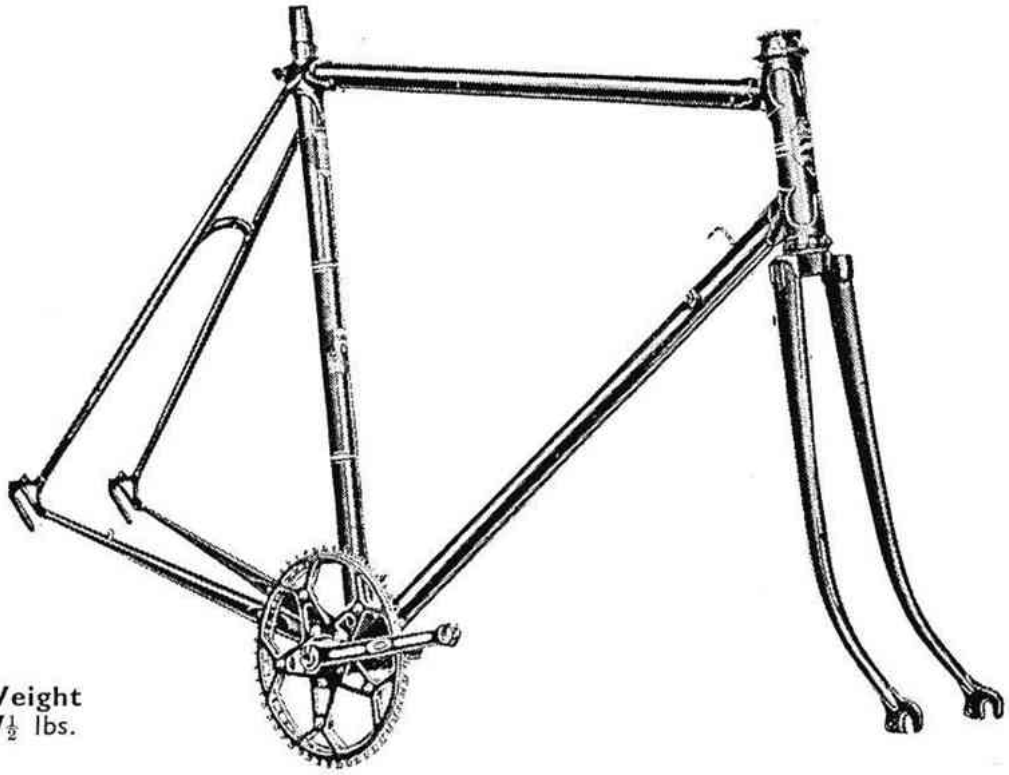
The dynamo has an output of 2·7 watts, 6 volt 0·35 amps. to the headlamp, and 6 volt 0·04 amps. to the tail lamp. It has a revolving magnet (anti-clockwise), with fixed armature, dispensing with collector and carbon, so eliminating the risk of a short circuit.

The magnet is made of a special alloy, superior to the best cobalt steel, rendering demagnetization impossible. The bearings are special large balls of 4 mm. diameter, with an arrangement of grease lubrication, rendering periodic lubrication unnecessary. Absolutely silent, with automatic take-up of any wear.

Spare bulbs can be obtained from any cycle dealer.



Sterling Frames



Weight
7½ lbs.

A FIRST-CLASS Continental frame, specially designed for massed start racing, with the modern "square frame," but with 74 degree head for those who prefer an "upright" frame.

The top tube matches the seat tube for length, and this, combined with the 74 degree head, gives a machine which has instantaneous steering response under all conditions of racing.

All such fittings as gear lever boss, brake and gear cable eyes are brazed on, so that the latest bare wire technique can be used, saving the weight of control cables, and ensuring more efficient operation.

Specification

Frame — of the famous "808" super-quality steel tubing, with beautifully cut-away lugs, with long tapering spear-points.
Frame height — choice of 21, 21½, 22, 22½ or 23 inches.
Frame measurements — (for 22½", others in proportion). Wheelbase, 41". Seat tube, 22½". Top tube, 22". Bracket height (with 27" wheels), 10¼". Chainstays, 17⅛".
Forks — oval to round, with smart cut-out crown.
Pump pegs — on down tube, to take 18" pump. Gear lever boss, brake and gear cable eyes all brazed on, for modern bare wire assembly.
Mudguard eyes — incorporated in fork-ends, front and rear.
Frame angles — 74 degrees seat and head tubes.
Head fittings — Stronglight, to take expander bolt handlebar stem.
Finish — red, green or blue flamboyant, with red-white-blue transfers and metal "Sterling" shield on head.

With STRONGLIGHT cotterless alloy double chain-wheel (46-49 or 47-50)
With STRONGLIGHT steel double chain-wheel (46-49 or 47-50)
With STRONGLIGHT steel single chain-wheel

Gloria Frames

HERE is a first-class racing frame, at a very moderate cost. The frame design is the same as that used by the famous VCL team from Paris, for their successful rides in the Isle of Man International road race. Frame angles are 71½ deg. parallel. Long top tube ensures steady steering at all speeds, making the machine a delight to handle under all racing conditions.

For an all-purpose club machine, you cannot do better than start off with a Gloria frame, and add the equipment of your choice.

Specification

Frame — of highest grade steel, with beautifully cut-out lugs.

Frame height — choice of 21, 21½, 22, 22½ or 23 inch.

Frame measurements (for 21½″ frame, others in proportion). Wheel-base, 40½″. Seat tube, 21½″. Top tube, 22″. Bracket height (with 27″ wheels), 10½″. Chainstays, 17¼″.

Forks — Oval to round, with forged steel crown, cut-away down fork blades.

Pump pegs, etc. — brazed on to down tube, for 18″ pump. Gear lever boss, brake and gear cable eyes brazed on, permitting modern bare wire assembly technique.

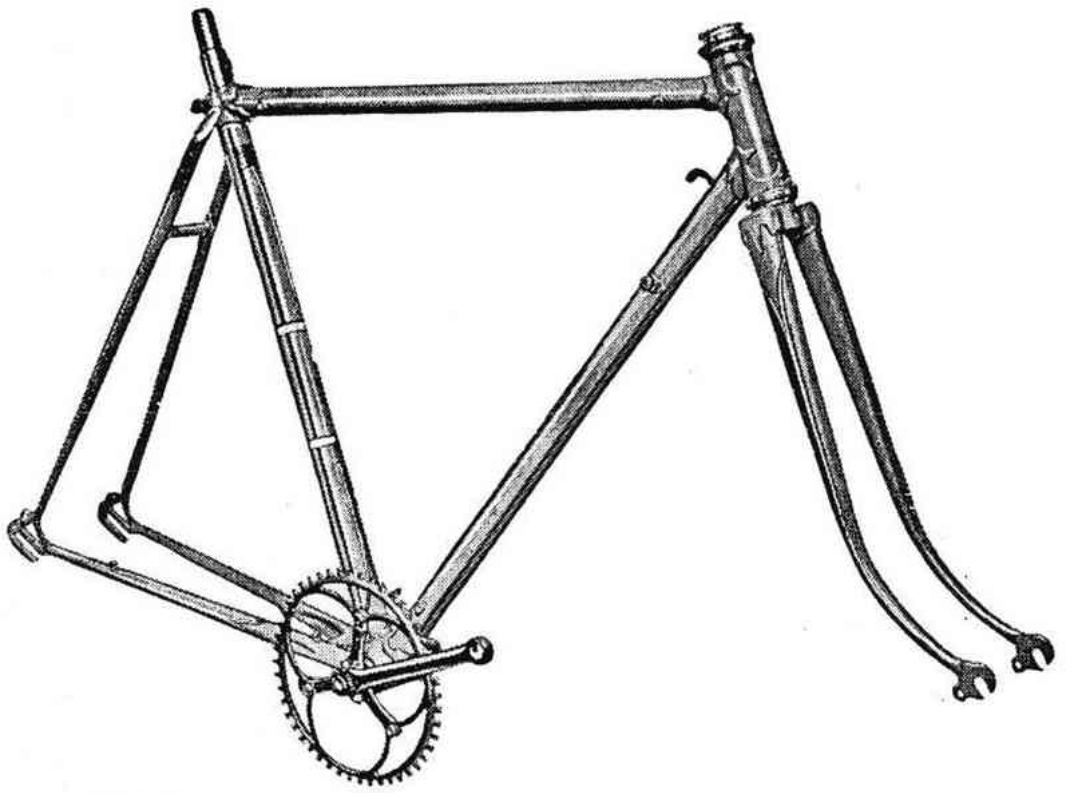
Mudguard eyes — incorporated in front and rear fork-ends.

Frame angles — 71½ deg. head, 71½ deg. seat.

Chain-wheel set — Durax Chain-wheel and cranks. 48 teeth, $\frac{3}{32}$″, and 6¾″ cranks.

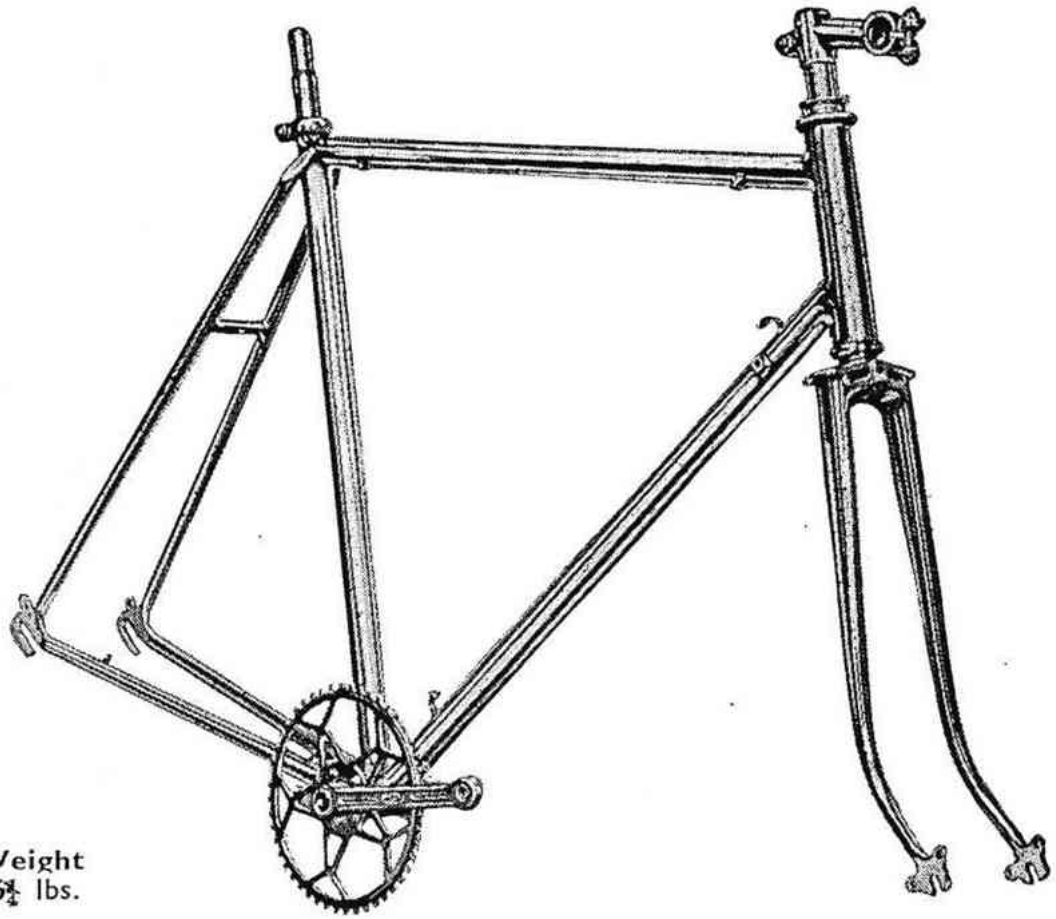
Head fittings — Gloria pattern, to take expander bolt handlebar stem.

Finish — Enamelled red, green, blue or white.



Weight
8½ lbs.

Fontalloy Frames



Weight
6¼ lbs.

A UNIQUE frame, completely in duralumin, and weighing only 6¼ lbs. complete with chain-wheel set and handle-bar extension ! The frame tubes are joined by an entirely new electrical welding process, making, in effect, a one-piece frame, without lugs.

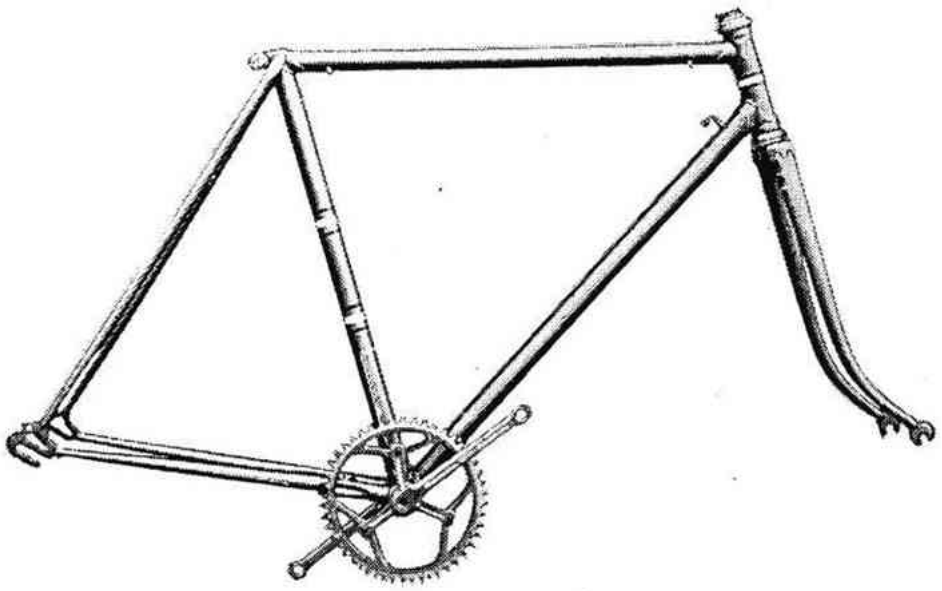
Design is the very latest, with the" square frame " — that is, seat tube and top tube equal, giving a comfortable riding position, without the need for an over-long handlebar extension.

All such parts as gear lever boss, brake and gear cable eyes are welded on, permitting the latest bare wire technique of assembly (lighter and more efficient than the usual full run of cables).

Specification

Frame — of highest grade duralumin tubes, electrically welded.
Frame height — choice of 21, 21½, 22, 22½ and 23 inches.
Frame measurements — (for 23″ frame, others in same proportion). Wheelbase, 42″. Seat Tube, 23″. Top tube, 23″. Bracket height (with 27″ wheels), 10¾″. Chainstays, 17½″.
Forks — Oval to round section, special girder type crown.
Pump pegs — on down tube, to take 18″ pump.
Mudguard eyes — incorporated in fork ends, front and rear.
Frame angles — 72 deg. head, 72 deg. seat.
Chain-wheel set — Stronglight cotterless, all-alloy. 46 teeth chain-wheel (47 or 48 to order). Cranks, 6½″ or 6¾″.
Handlebar extensions — 3″ forward, to take 15/16″ bends, with 1″ centre.
Head fittings — Stronglight De Luxe.
Finish — natural duralumin, highly polished.

La Coste Frames



A first-class frame, suitable for either racing or touring, and built with British-made, Reynold's 531 tubing. Head angle is the now popular 73 degrees, and the frame bu ilds up into a machine which is a delight to ride and race.

Specification

Frame — In Reynold's 531 British tubes, brazed-up construction, with attractive cut-away lugs.

Frame height — choice of 21, 21½, 22, 22½, 23, or 23½ inch.

Frame angles — head, 73 degrees. Seat 71 degrees.

Head fittings — Stronglight, chromium plated.

Chain-wheel set — extra light steel chain-wheel, 46 teeth, three-arm fitting, and Stronglight fluted cranks. Crank length 6¾″. Double chain-wheel (47–50 or 46–49) if preferred.

Fittings — pump pegs brazed on down tube, to take 18″ pump. Derailleur gear control lever boss, gear and brake cable eyes all brazed on, to take bare-wire assembly.

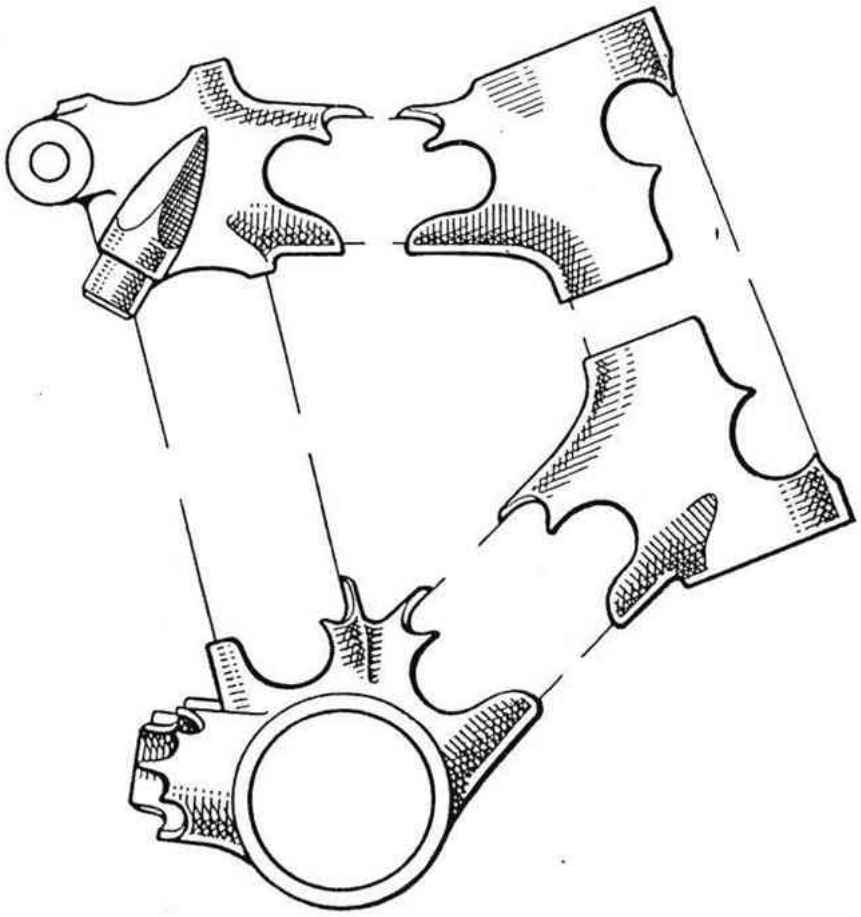
Frame measurements — bracket height (27″ wheels), 10¾″ ; wheelbase, 40¾″.

Forks — oval to round, chrome crown.

Mudguard eyes — incorporated in fork ends.

Finish — Enamelled light red, dark red, green, ivory, white, or yellow. Lustre — blue, green, grey, beige, or violet.

Lugs and Spokes



U F D FRAME LUGS

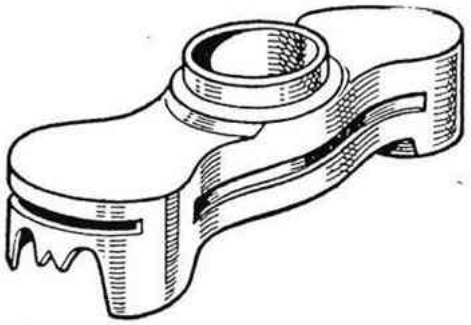
A set of cast lugs, guaranteed to conform to standard British sizes to build up frames with head angle of 73 degrees, and seat angle of 71 degrees. Set comprises bottom bracket, seat cluster (with stay eyes), top and bottom head lugs. Supplied in plain (for cutting out to any desired pattern), or cut-away as illustrated above.

SPOKES AND NIPPLES (Etoile)

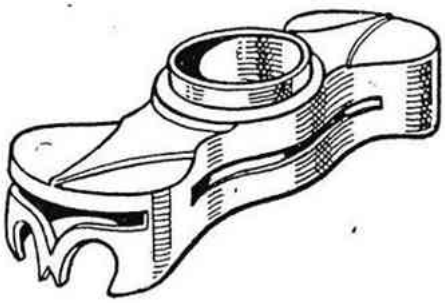
BEST quality French-made spokes, double butted with nipples and washers. Spoke lengths : 11¼″, 11⅜″, 11½″, 11⅝″, 12″ and 12⅛″. In one gross packets.

Fork Crowns

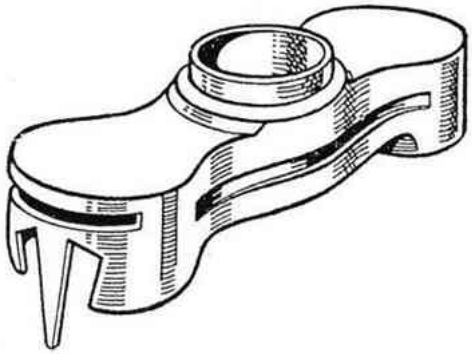
A choice of six high grade fork crowns, to suit various type of fork blades, and with alternative designs. Drop forged, in best quality steel, guaranteed correct to British sizes.



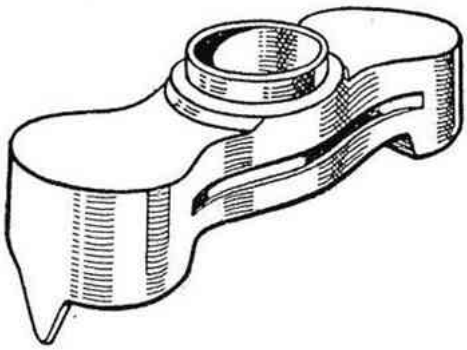
Ekla Oval



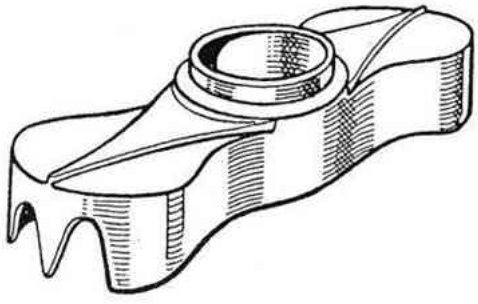
Ekla Extra Light (Oval)



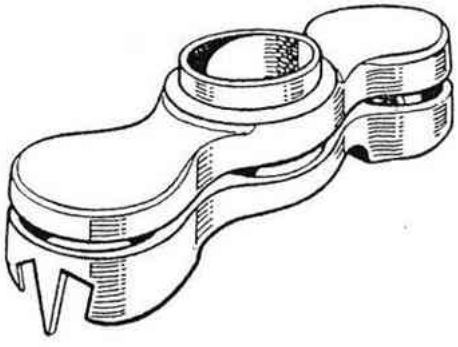
Ekla "D"



Ekla Plain "D"



"H" Crown (Oval)



Ekla Round

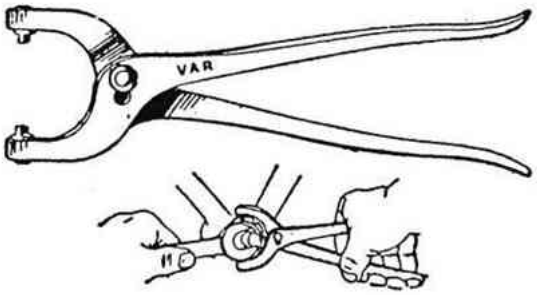
VAR Tools

Speed up all dismantling and assembling operations which normally call for the crudity of the hammer and punch — now abolished for ever.

Parts worked on remain like new — no burred-over holes or damaged slots in such parts as locking rings, free-wheels, etc., which are frequently removed or adjusted.

No. 1

GRIP SPANNER



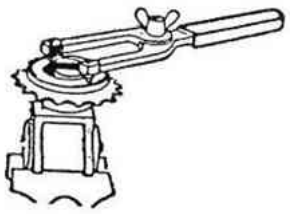
FOR notched locking rings on bottom bracket and steering head. The only tool with which you can tighten or slacken at will, notched locking rings, without reversing the tool, without changing hands, and without damaging the notches on locking ring.

Any bearing adjustment — as fine as a hair — can quickly be made by using the tool as shown in the accompanying illustration.

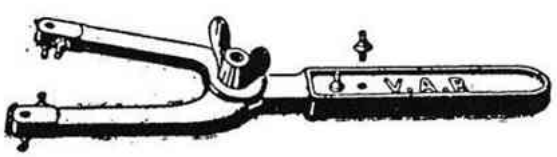
The dogs, which are detachable, are in cyanised steel. The grip spanner pivots in two alternative positions, on a countersunk axle bolt of specially treated steel.

No. 4

PIN SPANNER



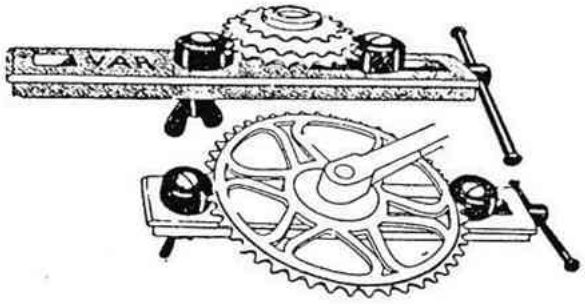
SPECIALLY designed for tightening and slackening locking rings, etc., which have holes, either on their faces or on their edges. Can be used on free-wheels, head-rings, hub face-plates, etc.



The jaws pivot on an axle bolt to any desired position, and can be instantly locked in position by tightening the wing nut.

Supplied with two spare pins, in special high resistance steel, screwed into the handle to avoid loss.

No. 9 FREE-WHEEL AND CHAIN-WHEEL VICE



A simple bench tool which can be used for a variety of jobs — repairing and adjusting free-wheels, changing sprockets, removing and replacing the chain-wheel from its crank, etc.

The holding studs engage firmly with the teeth form, securing the free-wheel or chain-wheel rigidly, without damage to the teeth, and a steel washer on top of each stud prevents the sprocket jumping out under the strain of removal.

Quickly adjusted to take any teeth from 14 to 52.

No. 10 FREE-WHEEL COG REMOVER

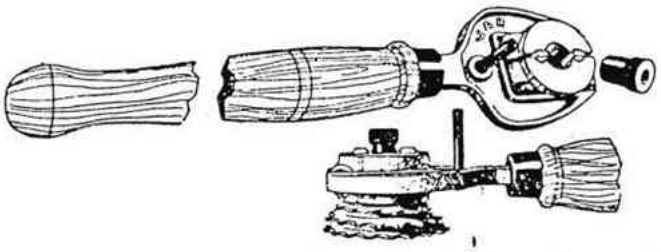
WITH the free-wheel held in the No. 9 vice, the cog remover is quickly adjusted to fit the sprocket which it is desired to remove ; the engaging dogs are shaped to the teeth form, and cannot damage the teeth. The long levers enable the most stubborn cog to be removed quickly and easily.

No. 3 FREE-WHEEL HOLDER

HOLDS firmly all makes of free-wheels while dismantling, simply by tightening up in a vice.

The free-wheel is dropped into position on the tool, which is then placed in the vice. Tightening the vice forces open the jaws of the tool, holding the free-wheel rigidly in position. A special soft metal band at the point of contact prevents damage to the free-wheel threads.

No. 5 UNIVERSAL FREE-WHEEL REMOVER



A tool which will remove any type of free-wheel, ordinary or boss pattern.

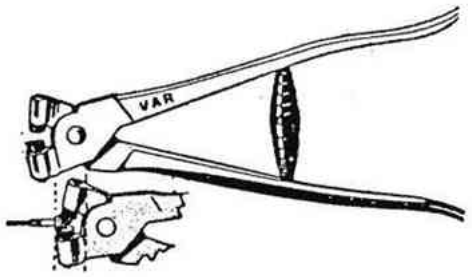
The body of the tool carries a pair of double-ended dogs, one pair of dog ends fitting into the notches of an ordinary type free-wheel, the other pair fitting the notches of a boss-pattern free-wheel.

To use the tool, the body is passed over the hub spindle end, so that the correct pair of dog ends engage in the free-wheel notches. The plug is screwed on to the spindle end, to lock the body into position.

The handle is then used as a spanner, the jaws being passed into the two flats provided on the body. The long sturdy wooden lever of the handle enables even the most stubborn free-wheel to be removed with ease.

When not in use, the body is carried on a stud on the handle, and secured by the plug to prevent loss.

No. 2 SPOKE-END CUTTER



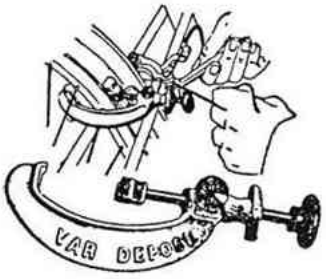
SPOKE-ENDS projecting through the spoke nipples are smoothed off, in one simple operation, without leaving any burrs requiring subsequent filing down.

A comfortable tool to handle, thanks to the long levers and their shaped-to-the-hands contour. The projecting studs are off-set, and in use, one stud is pressed against the nipple head, when closing the tool shears off the projecting spoke "as clean as a whistle." The studs are detachable, and are in special high-resistance steel.

No. 11 BRAKE SHOE CLAMP

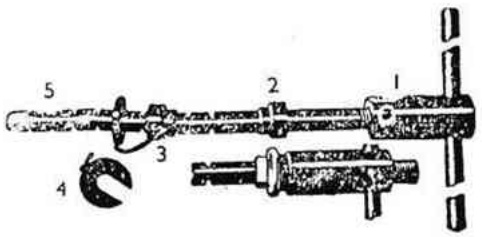
SIMPLIFIES that irritating job of attaching the brake cable. Holds the brake shoes in position. leaving both hands free — one to insert the inner cable end, and the other to tighten the holding nut.

The holding clamp is pushed into the required position, with the brake blocks at the required clearance from the rims, and the set-screw tightened.



No. 6

HEAD-CUP PRESS TOOL



A neat and efficient tool, which, in one simple operation, presses the upper and lower ball cups into the head tube of a frame, leaving them firmly seated home, and **parallel.**

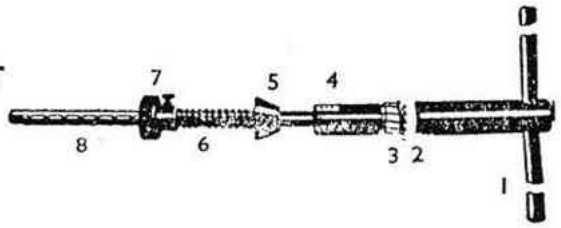
1. End block, with levers.
2. Collar for upper ball cup.
3. Collar for lower ball cup.
4. Slotted retaining plate.
5. Stem, with slots at 20 mm. intervals.

Remove the parts from the stem and fit the upper ball cup in position under the upper collar (No. 2). Insert the stem into the head tube, fit the lower ball cup, then the lower collar (No. 3), with the slotted plate (No. 4) in the most convenient groove on the stem, and with the serrated face of the plate against the lower collar.

Screw down the end block until the cups are home.

No. 8

HEAD AND BRACKET REAMER



A dual-purpose tool, quickly converted for use either on the head tube or the bottom bracket shell.

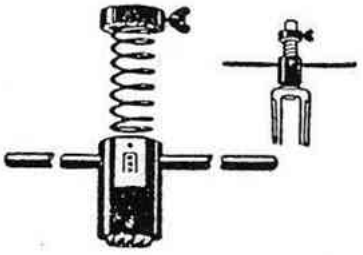
When used on the head tube, in one operation it cleans off all surplus metal from inside the tube, and dresses the edges of the tube ready to receive the ball cups.

1. End block.
2. Edge reamer, 16 teeth.
3. Internal reamer.
4. Pilot block.
5. Centralising cone.
6. Spring.
7. Securing collar.
8. Stem.

When used on the bottom bracket, the reamer No. 3 is removed, and the tool then used to dress off the edges of the bracket shell.

No. 7 FORK CROWN REAMER

A simple but robust tool which slips over the fork column, and removes all surplus metal after brazing column to crown. Leaves a perfect surface to receive the fork race. Reamer is double-ended, to suit either British or metric tubes.

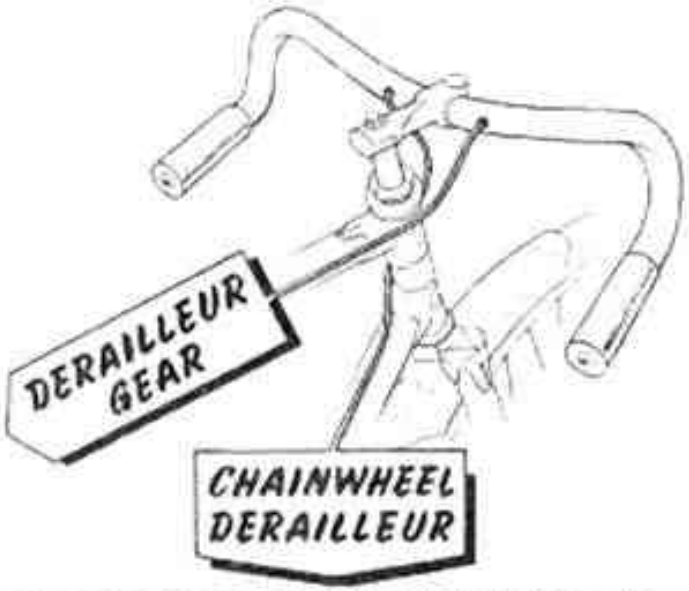


FONTEYN & Co. Ltd
14, PERCY ST.
LONDON W.1.
(Museum **8494**)

SUPPLEMENT TO 1950 CATALOGUE

Simplex Twist Grip

change gear from the bars

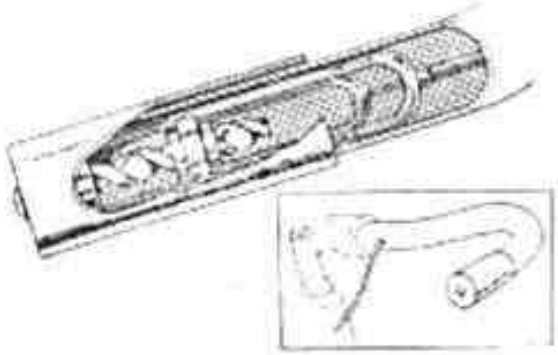


THE Simplex twist grip can be fitted to any type of handlebar bend, and enables the rider to change gear without letting go of the handlebars — a great advantage in crowded conditions, whether of traffic or racing.

A twist grip can be fitted into one end of the bar to operate the rear derailleur (up to 5 speeds), or by fitting two twist grips, one in each end of the bars, the rider can change gear with one hand and change chain-wheels (if a front derailleur is fitted) with the other.

No alteration in the rear derailleur is required, the cable supplied with the twist grip connecting up in the usual way. For the chain-wheel derailleur, the cable-operated Simplex chain-wheel derailleur (see page 52) must be fitted.

The twist grip consists of a short metal sleeve mounted on the end of the bar, which, when turned, operates a ramp inside the bar, moving an operating block backwards and forwards. The inner wire of the control cable is connected to this (the cable runs through the inside of the bar) and operates the gear mechanism.

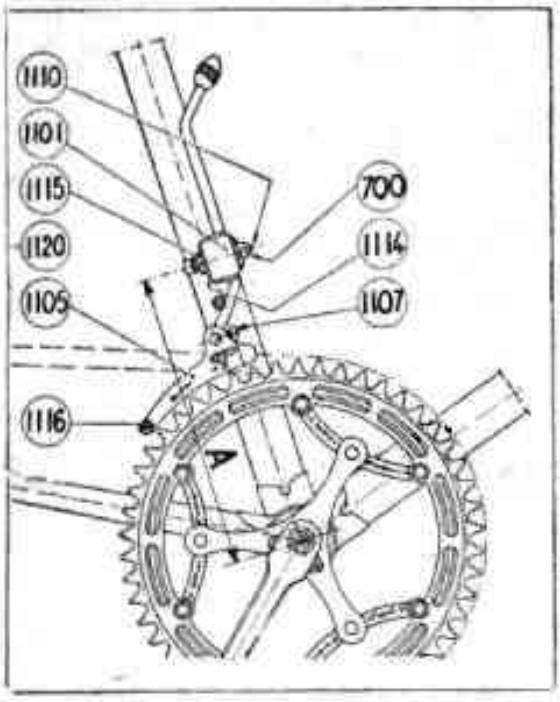


Sectional view of the twist grip.

To fit a twist grip, it is only necessary to drill a $\frac{5}{32}$" hole in the bar, $\frac{1}{2}$" from the end, to take the countersunk locking screw, and another hole $\frac{1}{4}$", to admit the cable. The cable hole can be close to the stem, (as illustrated), or beneath the brake lever if preferred.

Simplex Chain-wheel Derailleurs

1950 MODELS



THE Simplex chain-wheel derailleurs for 1950 are similar in principle to the pattern described on page 12, but with a simplified method of attachment to the frame.

Competition, 1950

Designed for use on close-ratio chain-wheels, will operate over any two chain-wheels between 50 and 45 teeth.

Touring, 1950

Designed for use on wide ratio chain-wheels, with an extended derailling cage which will carry the chain across any two chain-wheels, between 50 and 28 teeth.

The double chain-wheel set recommended for use with this model is the Stronglight No. 38 "Cyclotouriste" cotterless set. For $\frac{1}{2}$" chains only, in combinations of 44-28, 44-32, 46-28, 46-32, 48-28, 48-32.

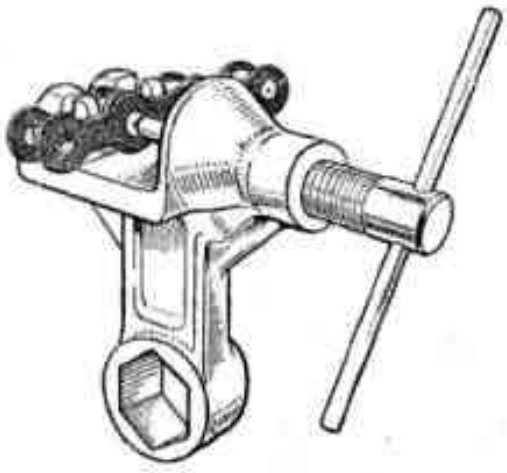
Cable-operated Models

Both the Touring and Racing models can be supplied converted for use with a Simplex twist grip, the necessary cable end stop and inner wire anchorage being added to the lever.

With combined chain-guard

All the above chain-wheel derailleurs can be supplied with a combined derailling cage and chain-guard. The cage (1105) is extended forward to overlap the front portion of the chain-wheels, giving complete protection from the chain.

Fifon Rivet Extractor

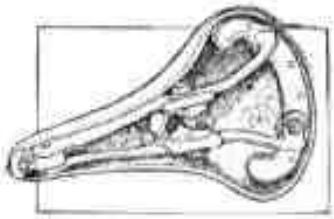


A handy workshop tool, but which is small and light enough to be carried in the touring bag. Although the occasions when you need a rivet extractor for a chain repair by the roadside are fairly rare — such a tool as the Fifon is indispensable when it does happen.

The chain is slipped into the holding claws, and the tommy bar turned to force out the rivet required. Alternatively, can be used to fit a rivet, as when connecting up a chain.

Weighs only 2$\frac{1}{2}$ ounces, finished in yellow-bronze.

Ideale Saddles



THESE French saddles have been specially designed for the hard riding tourist and the long distance racing man. The leather tops are perfectly shaped for comfort, and being one-piece tops, will always retain their rounded shape.

The saddle frame is in duralumin, of very sturdy, but light construction. The adjusting nut under the peak of the saddle can easily be reached with a spanner, but also has holes to take a tommy bar.

IDEALE 59TB

As illustrated, with a dark brown leather top, specially treated to provide absolute weatherproofing. This is a saddle that needs no breaking in, it is already supple, thanks to the special treatment, and gives perfect comfort right from the very first mile. Particularly recommended for long distance racing.

IDEALE 59FT

Similar to the saddle shown, but in a light brown leather, with a row of holes drilled along the lower edge of the leather top. The light brown top gives a very smart appearance.

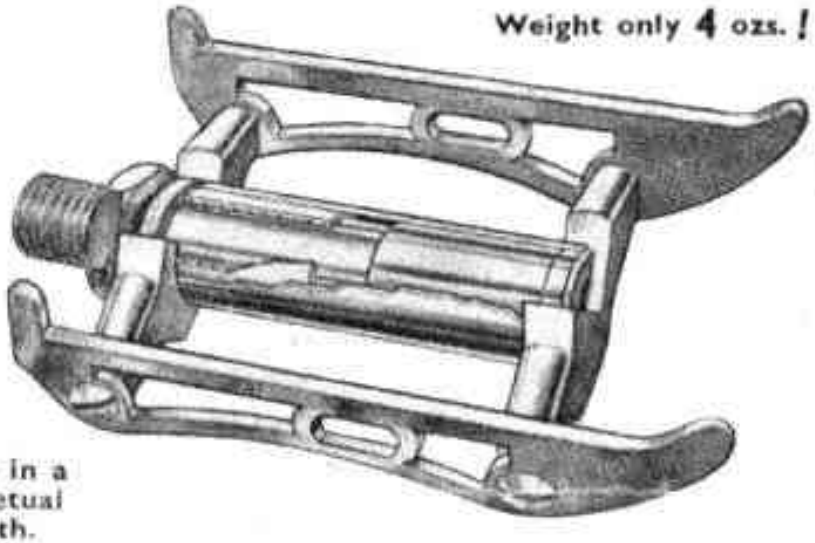
Dynamo Pulley Cap

THE dynamo pulley cap can be fitted to any make of dynamo, being a ribbed rubber cap which fits tightly over the operating pulley of the dynamo. This gives a rubber-to-rubber contact with the tyre, definitely prevents slipping in wet weather, and reduces the dynamo noise by fifty per cent.

Supplied on cards of 24 caps, various colours, to match bicycle finish.

Piel Pedals

Weight only 4 ozs. !



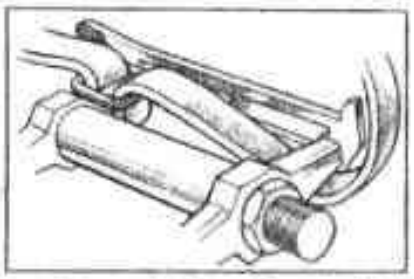
Runs in a perpetual oilbath.

THE revolutionary Piel Pedal (as designed and used by Roger Piel, champion of France) is the lightest and strongest pedal on the market. A unique feature is that it has no ball bearings, and no adjustment for wear ! The pedal runs on a perpetual film of oil, and wear is so infinitisemal that there is never any slack to take up.

As will be seen from the cut-away illustration, oil contained inside the spindle is fed through a felt plug in the end of the spindle to the oil grooves in the sleeve surrounding the spindle. Two opposing spiral grooves are cut, so that the oil is forced continuously from one end of the spindle to the other, and back again.

When under load (that is, when riding), the pedal runs on the fine thread of oil contained in the grooves.

By abolishing the ball bearings and adjusting cones, the spindle, instead of tapering, is left parallel, and is thus very much stronger. Under test, a Piel pedal will stand up to a direct load of 500 kilograms (1,100 pounds) without the slightest deflection. The normal riding load is only 22 lbs, increasing to a maximum of 330 lbs. in an all-out sprinting effort — so that the safety margin is very great.



A strap retainer is supplied with each pedal, and fitted as shown.

Because it is running on oil, the pedal will not "spin" — the test applied by many riders — but it must be remembered that a pedal should be designed to revolve at a fairly slow speed (60 r.p.m. for normal, 170 r.p.m. for sprinting), while taking a heavy load, and the Piel pedal satisfies these two conditions.

The spindle is in a specially toughened steel, the body in lightweight duralumin, and entirely rustproof. With no end cap (as on a normal pedal), water and dust cannot get into the inside of the pedal barrel, and a composition washer at the inner end of the spindle serves both to contain the oil and keep out water and dust.