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National Cycle Archive





STURMEY ARCHER

"Makes Cycling Easy."

Agent for Scotland,

JAN F. AIGHARD,

3. CAUDGAN STREET,

GLASGOW.

STURMEY-ARCHER

"Makes Cycling Easy and Safe."



September, 1931.

"K" and "K.C." Pattern Hubs.

also "C.C." Single Coaster.

STURMEY ARCHER



The Hub of the Universe.

STURMEY-ARCHER



SOME thirty years ago the first Sturmey-Archer 3-speed gear was fitted to a bicycle. The great benefit of this fitment was at once appreciated. To-day so popular has it become that a cyclist feels that his machine is incomplete without it.

The rider who uses a cycle for business finds that it saves time, exertion and money.

The rider who cycles for pleasure finds an added interest in riding and is able to cover longer distances with less fatigue.

The new Sturmey-Archer 3-speed gear, known as the "K" hub, is the latest development in cycle gears: it is the result of exhaustive experiments in gear construction and correct choice of steels.

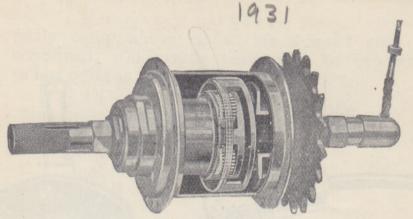
It is light in weight, beautifully simple in construction, yet has tremendous strength and durability. It is in a marked degree superior to any variable gear yet made.

STURMEY - ARCHER

3 - SPEED GEAR

"Makes Cycling Easy."





SHOWING MECHANISM

DESCRIPTION.

The Gears, which are always in mesh, are dust proof and the entire mechanism runs in oil with that "silkiness" only to be found in the "Sturmey-Archer."

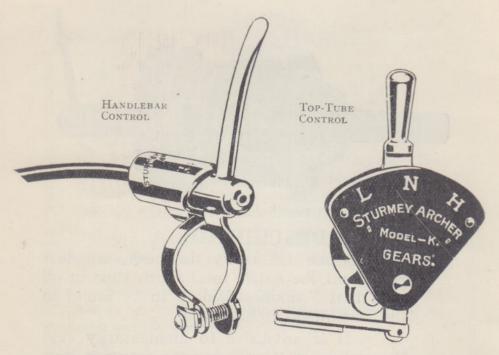
It is advisable to momentarily ease the pressure on the pedals when changing gear.

An automatic free-wheel, inside the hub acts on each of the three gears.

The gear can be easily fitted to any chain-driven bicycle, and is suitable for any width, between the back fork ends, down to $4\frac{1}{16}$ ".

ADAPTABILITY.

The Sturmey-Archer 3-Speed Gear is drilled for forty or thirty-six spoke-holes, while the hub sprocket has 16, 18 or 20 teeth for ½" roller chain, ½" or ½" wide; also 14 or 15 teeth for ½" pitch chain, ½" wide; and for any chain line between 1½" and 1¾". The "chain line" dimension is controlled by the hub sprocket, and four different "chain lines" may be obtained by using the washer supplied and reversing the hub sprocket. 22 and 24T sprockets can be supplied.



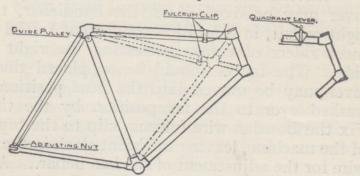
Control. The illustration on the left shows the handlebar control and that on the right the top tube control.

The middle notch gives the normal gear in both cases.

DURABILITY.

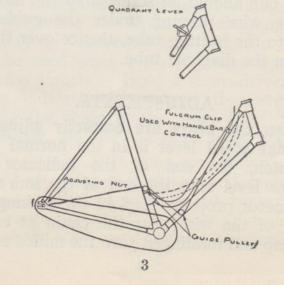
The limit of endurance of a Sturmey-Archer Gear has not yet been determined, as some of the first hubs ever fitted are still in use. The new "K" hub of to-day however possesses many improvements over anything yet made. It is actually somewhat smaller and even lighter in weight than its predecessor, yet it has been subjected to and withstood tests that even the old hubs would hardly come through successfully, and certainly many times more severe than could ever be made by a rider of a pedal cycle.

The rider therefore whose machine is fitted with a Sturmey-Archer may feel that he is per-



DIRECTIONS FOR FITTING.

It is not necessary to take any part of the hub to pieces when building the wheel, as the spokes on the driving side can be inserted without removing the sprocket. Wheels must be built central with the outer cone faces and not with hub flanges. When built, the wheel should be set square in the back jaws and the bearings adjusted by means of the left hand cone in the ordinary manner. The right hand cone is a fixture, and should not be interfered with. After adjusting, see



that the axle nuts are both well tightened, otherwise the axle will rotate and bind the bearings.

Having fitted the wheel, the change speed lever may be fixed, if on the handlebar, to the right or left, in a position convenient to the rider, most riders of course preferring the right hand side. The barrel should be so placed that the lever may be moved into the near position, and pushed over to the far position by the thumb. Fix the Bowden wire fulcrum clip to the top tube of the machine, leaving sufficient slack in the outer wire for the adjustment of the handlebar. Attach the pulley wheel to the diagonal tube of the machine and pass the actuating wire over it; screw the milled nipple on to the screw fixed on the end of the small chain. The mechanism is now ready for setting. The wire should be a little slack with the lever in the high gear notch. No Bowden wire is required for the Frame tube control.

Sharp bends in the cable must be avoided, as they make control operation very stiff.

Ladies' Machines and Spring Frames.—
If the gear is intended for a lady's machine, the fulcrum clip should be screwed to the down tube with the wire running under the guide pulley clipped to the bottom tube, thence over the guide pulley on the diagonal tube.

ADJUSTMENTS.

When the gears are correctly adjusted and the change speed lever is in the normal (middle) gear notch, the end of the indicator spindle should be level with the end of the hub axle. If the indicator projects, slacken the locking nut at the end of the wire near the chain at end with the thumb and forefinger, turn the milled adjusting

nipple until the indicator is level with the end of the hub axle; then tighten the locking nut, and the adjustment is complete.

From time to time verify the adjustment of the gear, as it is possible the wire may stretch.

Another method to tighten the wire is by moving the clip on the top tube towards the head of the machine; to slacken, reverse the operation and secure the clip again. The indicator is only provided to show when the hub is correctly adjusted and on no account must this be screwed up or touched in any way.

It must be remembered that if the back wheel be moved when adjusting the cycle chain at any time, this will of course alter the tension of the wire and the gears should be adjusted as mentioned above.

See that the fulcrum clips which guide the wire on the cycle frame are firm also see that the nuts on both sides of the axle are perfectly tight.

All the bearings are adjusted simultaneously by turning the left hand cone, and if when free-wheeling, the hub rotates the pedals, the left-hand cone is too tight.

For convenience in wheel building, the right hand end, viz.: the chain and coupling shown at X3, may be unscrewed and removed; but care must be used when replacing same not to screw it up too tightly. Hold a screw-driver in notch of the indicator to prevent it moving, whilst rotating the chain at the other end; to the left to unscrew, and to the right when screwing up.

To set the R.H. cone correctly, it should be screwed up as far as it will go and then slackened back just sufficient to allow the parts to revolve freely round the axle. It is not advisable to tamper with the R.H. cone, unless it is essential to do so.

GEARS.—The following table shows the gears obtainable with 26 and 28in, wheels, and 16, 18 and 20 tooth hub sprockets:—28-in, WHEEL.

	Teeth.	· ·	-in. Pitch		No. of	Teeth	1	-in. Pitch	
Chain Wheel	on Cog.	Low.	Nor.	High.	Chain Wheel	on Cog.	Low.	Nor.	High.
40	16	52	70	93	40	16	49	65	87
40	18	46	62	83	40	18	43	58	78
40	20	41	56	75	40	20	39	52	70
42	16	55	73	98	42	16	51	68	92
42	18	48	65	87	42	18	45	61	82
42	20	43	58	79	42	20	41	55	74
44	16	57	77	103	44	16	54	72	96
44	18	51	68	92	44	18	47	64	85
44	20	46	61	82	44	20	43	57	77
46	16	60	80	107	46	16	56	75	100
46	18	53	71	96	46	18	50	66	89
46	20	48	64	86	46	20	45	60	80
48	16	63	84	112	48	16	58	78	104
48	18	55	74	100	48	18	52	69	93
48	20	50	67	90	48	20	47	62	84
50	16	65	87	116	50	16	61	81	109
50	18	58	77	104	50	18	54	72	97
50	20	52	70	93	50	20	49	65	87
52	16	68	91	121	52	16	63	85	113
52	18	60	81	108	52	18	56	75	101
52	20	54	73	97	52	20	51	68	91
54	16	71	95	126	54	16	66	88	117
54	18	63	84	112	54	18	58	78	104
54	20	57	76	101	54	20	53	70	94
56	16	73	98	130	56	16	68	91	121
56	18	65	87	116	56	18	61	81	108
56	20	58	78	105	56	20	55	73	98

The gear ratios provided are high Gear 33% above the normal and the low Gear 25% below it. The normal gear is according to the number of teeth on the front chain wheel, as in a single speed machine. 22 and 24T. Sprockets can be supplied.

TO TAKE THE HUB APART.—Remove left cone. Then unscrew right hand ball ring (right hand thread), thus detaching the entire gear from the hub shell.

To remove the sprocket the driving dog must be held in a special holding fixture, and the sprocket unscrewed by means of a length of cycle chain wrapped round it and riveted to a bar.

We are in a position to supply a sprocket removal tool or holding fixture, drilled with six holes to take the six pegs in the Driver, K.7, at a cost of 2/9 each.

WHEN SENDING a wheel or internal parts for repair please put identification marks on the labels and advise us on date of despatch.

WHEN ORDERING be sure to give the following particulars:—

Chain Line. Width between Back Forks.

Width of Chain. Diameter of Frame Tube

carrying Fulcrum or

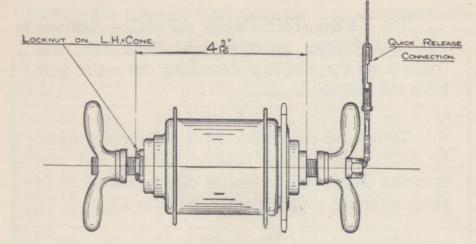
Quadrant Clip.

Pitch of Chain. Diameter of Handlebar.

Size of Frame. Lady's or Gentleman's

Machine.

Control. Handlebar or Top Tube.



A locknut can be supplied for the left-hand cone, a quick release connection for the control cable, and wing nuts, all as shown on the illustration above.

The left-hand cone is adequately secured by the locknut, and as the right-hand cone is permanently locked to the axle, the adjustment of the cones is not interfered with in removing the wheel.

The quick release knurled connection is fitted to the 3-speed control cable, and it is only necessary to drop the control lever into the high gear position where the cable is slack. The wire nipple can then be easily slipped out of the knurled connection without interfering in the slightest degree with the setting of the indicator.

By means of the wing nuts, the wheel can be taken out and replaced expeditiously without interfering with the adjustment of the cones of the control.

WEIGHT.—"K" Hub, 2 lb. 5 oz.; "K.C." Tricoaster, 3 lb. 6 oz.; Top Tube Control, 4 oz. extra; Handlebar Control, 6 oz. extra.

PRICE.—3-Speed hub with Top Tube Control, 22/6. Tricoaster (3-Speed hub and back pedalling brake combined) with Top Tube Control, 31/-. Handlebar Control, 2/- extra.



On August 22nd, 1929, Rossiter set out from Land's End, riding a bicycle fitted with



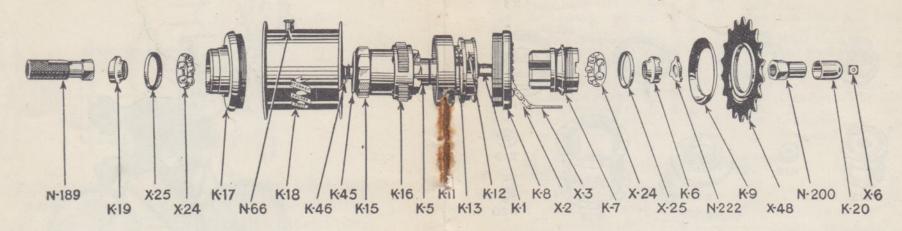
He broke

the record which has existed for 21 years. (LAND'S END TO JOHN O' GROATS)

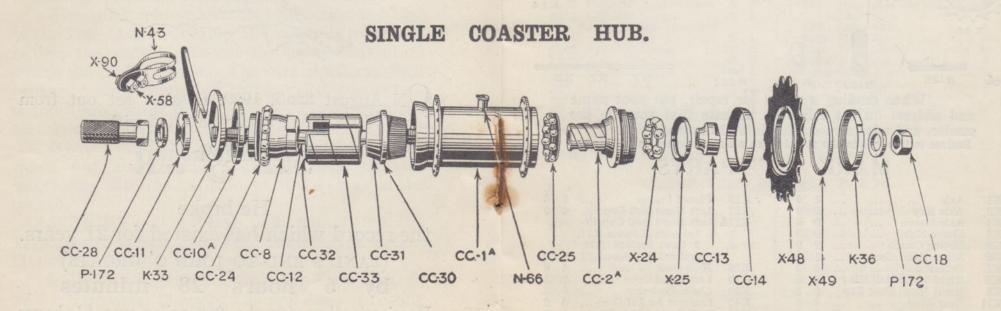
by 6 hours 28 minutes

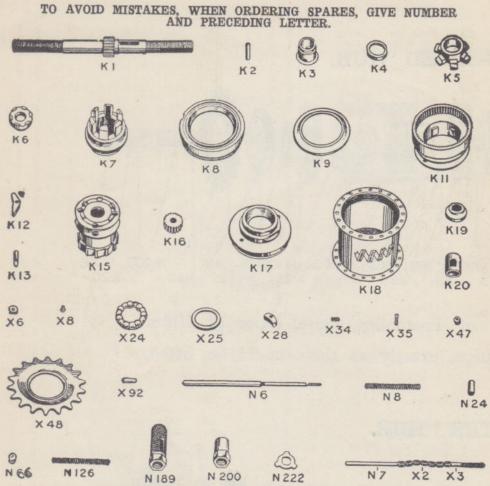
Rossiter's time for the 866 miles was 61 hours 28 minutes.

"K" PATTERN 3-SPEED HUB.



The illustrations indicate the correct way of assembling these types of Hubs. The parts follow one another in regular rotation, exactly as they should be fitted.





When sending a wheel for repair, put your name and address on the labels to indicate that you are the sender, and advise us on the date of despatch.

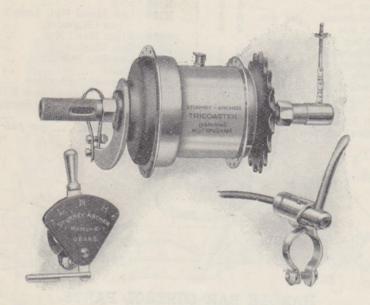
Enclose instructions in the parcel when sending internal parts by post.

MARK "K" PARTS.

K1 Axle K2 Axle Key K3 Axle Sleeve K4 Sleeve Nut		s. d. 4 0 K16 0 2 K17 0 8 K17 0 8	Left Hand Ball Cup	d. 6
K6 Sliding Clutch Right Hand	Cone Ball Ring Dust Cap	2 0 1 4 4 0 K18 3 6 K19 0 3 K20 4 0 K47 0 4 K48 0 1 X6	2 Pawl Springs X34, and 2 Pawl Pins X92 Hub Shell	6 0 6 1 3 2 2 2 2

X8	s. d. 0 1	2 3 3 9 8 9 2 7 7 3 3 1 1
×109 ×109 ×109 ×109 ×109 ×109 ×109 ×109	K50 K53- K51 K54 K54 K54 K54	(55 (52 (179 (61 (62
X116 Fulcrum Clip, complete X111 Clip Nut X90 Fulcrum and Quadrant Clip Bolt X109 Pulley Half Clip X109 Pulley Clip X78 Diagonal Pulley X79 Pulley Arm X80 Pulley Arm Screw X80 Pulley Arm Screw X81 Ferrule for outer Cable (not illustrated) X105 Wire Nipple (not illustrated) per doz.	BAR CONTROL PARTS. s. d. 0 6 0 8 K69 Handlebar Clip and Pulley Bolt	1 9 9 3 9 9 9 0 6 6 6 9 7 0 8 0
K55 Quadrant Lever X90 Pulley and Quadrant Clip Bolt X111 Clip Nut N120 Quadrant Lever Spring (not illustrated) X61 Quadrant Connection Quadrant only Complete comp Quadrant Front Plate, K53 Front, K55 Quadrant Lever N179 Quadrant Lever Stud, 1		5 0 3 6

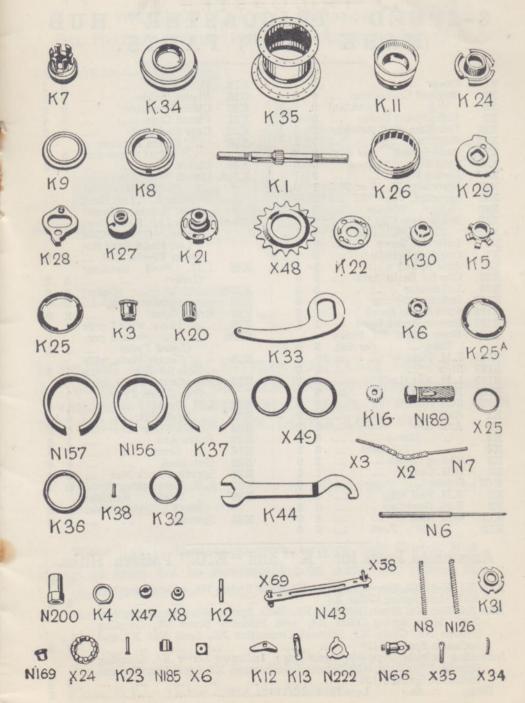
STURMEY-ARCHER



THIS latest improvement in tricoasters, the "K.C.," embodies several distinctly new features which are seen to advantage when comparing it with other types. THE GEARS AND BRAKE ARE TOTALLY ENCLOSED, dust proof and water proof. The Brake Band requires no special oiling and operates with a silkiness unequalled. The Hub has an attractive well finished exterior, making it a handsome and extremely useful addition to any machine.

All enquiries and orders should be addressed to

STURMEY - ARCHER GEARS, LTD., LENTON, NOTTINGHAM, ENGLAND. TO AVOID MISTAKES, WHEN ORDERING SPARES, GIVE NUMBER AND PRECEDING LETTER.



TO AVOID MISTAKES, WHEN ORDERING SPARES, GIVE NUMBER AND PRECEDING LETTER.

3-SPEED "TRICOASTER" HUB (MARK "K.C.") PARTS.

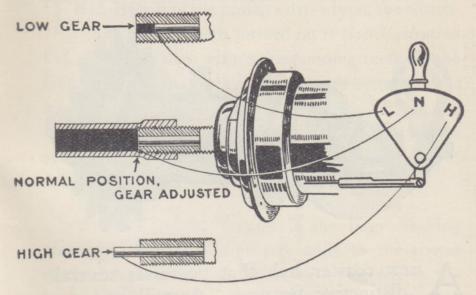
-		S.	d.					- 3
X2	Chain	0	7 .	K13	Pawl Pin		S.	d.
X3	Screwed Connection	0	3	K16	Planet Pini	··· ···	0	1
X6	Lock Nut	0	1	K20	Chair Dont	1011	0	6
X8	Main Spring Collar	Õ	î		Chain Prot	ector	0	3
X24	lin. diam. Ball Retainer	0	4	K21	Planet Cag	e	3	4
X25	D-II D	40.00	4	K22	Cage End I	Plate	1	0
X34	Ball Race Cap	0	1	K23	,, Pinion	n Retainer	-	
	Pawl Spring per doz.	0	6		Rive	et per doz.	0	6
X35	Split Pin ,,	0	6	K24	Clutch Nut		3	
X47	Spring Nut	0	1	K24A	Clutch Nut	fitted with	0	6
X48	Sprocket, 16, 18 or 20T	1	6		3 Pawls	Titled with		
X48	Sprocket, 22 or 24T	2	0					
X49	" Washer	Õ	9		Spring Ka	37, Left Hand		
X58	Brake Arm Clip Nut	0	2		Pawl Ret	ainer (Inner)		
X69	" Bolt	0	1		K25, Left	Hand Pawi		
N6	Indicator Comm		1		Retainer (Outer) K25A		
N7	Coupling Cain 31	0	7 7 3		3 Left Ha	nd Pawl Re-		
N8	Coupling Spindle	0	7		tainer Riv	rets, K38	4	9
	Axle Spring	0		K25	L.H. Paw	1 Retainer	-	0
N43	Clip for Brake Arm	0	4		(Inner)	- Trouting	0	
N66	Lubricator	0	3	K25A		" (Outer)	0	2
N126	Indicator Spring	0	3	K26	" Ratch	of Ding	0	2
N156	Steel Brake Band	1	0	K27	Brake Cone	et Ring	2	6
N157	Bronze Brake Band	ī	6	K28	Diane Colle	- :::	2	0
N169	Brass Rivet for Brake	-		K28a		with 2 pegs	1	0
	Ring per doz.	0	6	ILZON	" / "	with 1 peg		
N185	L.H. Pawl	0	3	TTOO	(Latest	Lype)	1	0
N189	Cton	0	9	K29	,, Centre	Plate, with		
N190	T TT ST / /T 1 1 1		9	*****	Hole for F	'eg	1	6
N200	D LI Mark	0	8 9	K29a 1	Brake Centre	Plate, with		
N222	C. III .	0	9		Peg (Lates	st Type)	1	6
K1		0	2	K30	L.H. Cone		ī	6
K2		4	0	K31	" Lock Ni	ıt		LO
K3		0	2	K32	", Dust Ca	P	0	2
	" Sleeve	0	8	K33	Brake Arm		1	6
K4			3	K34	" Drum	***		
K5	Sliding Clutch	2	0	K35	Hub Shell		3	6
K6	R.H. Cone	1	4		Sprocket Lo	ole Nine	4	6
KC7	Driver		ō		I H Down C	ck Nut	0	8
K8	R.H. Ball Ring		6	K38	L.H. Pawl S	pring	0	2
K9	R.H. Dust Cap		3	7700	Pinat	Retainer		THE STATE OF
K11			0	K44	Rivet	per doz.	0	6
K12			4	744	Spanner		0	6
	" "		*					

Assembled Parts for "K" and "K.C." Pattern Hubs.

Axle K1, Key K2, Sleeve K3, Nut K4, Axle Spring N8, Axle Spring Nut X47, Main Spring Collar X8	S.	d.
Azle K1, Key K2, Sleeve K3, Nut K4, Main Spring N8, Axle Spring Nut X47, Main Spring Collar X8, with Indicator Screw N6, Coupling Spindle N7, Chain X2, Screwed Connection X3, Lock Nut X6, and Indicator Spring N126	5	3
Spindle N7, Chain N16, Screwed Connection X3, Lock Nut X6, and Indicator Spring N126	7	6
Ditto, do. Less N6 and N126	2	3

IMPORTANT

OIL FREELY, & YOUR HUB WILL ALWAYS BE O. K.



TO ADJUST GEAR (K.C.PATTERN HUB) PLACE CONTROL LEVER IN NORMAL POSITION, UNSCREW LOCKNUT & ADJUST KNURLED CONNECTION UNTIL INDICATOR IS LEVEL WITH THE END OF THE AXLE AS SHOWN. THEN TIGHTEN LOCKNUT

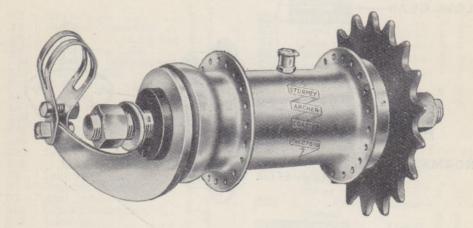
NOTE.—The correct method of dismantling hub is to remove Brake Parts first.

When hub is dismantled from Driving Side Clutch Nut K.24 must not be Reassembled on Axle, but placed in position in Ratchet Ring K.26. (care being taken that all three pawls are in action), before body of hub is screwed in.

On no account move Star Washer N.222 or Right Hand Cone K.6. These Parts are Fixtures.

STURMEY-ARCHER

POSITIVE DRIVE.



A new coaster hub that possesses several distinctive features. As will be seen, the Hub is particularly neat, and pleasing in appearance. It is also the lightest coaster hub yet produced, being fully half a pound lighter than some well known makes.

Fitted to a machine in place of the ordinary stirrup pattern brake, the coaster hub actually adds nothing to the net weight of the cycle.

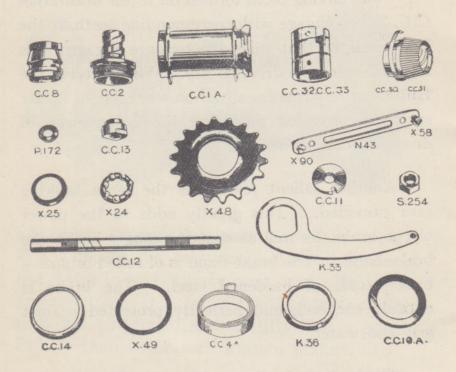
Better than insuring against cycle accidents is to fit a Sturmey-Archer coaster hub and prevent them. THIS Hub is of the positive drive type, the clutchnut having teeth formed on it (see illustration
C.C. 31) to engage with corresponding teeth in the
Hub Shell, so that when the two are engaged it is
impossible for the drive to slip. When driving the
Hub is entirely free from friction, while a light trailer
spring is provided to ensure the engagement of
drive or brake as desired.

Another salient feature is the large braking area provided. This greatly adds to the power of the brake, as well as ensuring longer life in the brake-band. The brake-band is of rolled bronze—brake drum of hardened steel. The brake is entirely enclosed, and perfectly protected against grit and water.

The brake is *positive* and powerful in action, yet beautifully sweet, taking up the load, and responding exactly to the pressure at the pedal, at the same time giving the rider the confidence that he has still reserve braking power left for an emergency.

The hub is simple in construction (as will be seen from the list of parts), is reasonable in price, consistent with the use of the highest grade materials and workmanship throughout.

To distinguish the two Hubs when ordering Spares, the early pattern Hubs are marked with a patent number on the shell. This has been omitted on those Hubs fitted with positive drive.



SINGLE COASTER. Positive Drive.

C.C. 2 C.C. 7 C.C. 8 C.C. 10A C.C. 11 C.C. 12 C.C. 13 C.C. 14 C.C. 18 C.C. 24 C.C. 25 C.C. 25	Hub Shell 8 Driver 8 Driver 8 Brake Band Rivet 1 Left Hand Cone 1 Left Hand Dust Washer Left Hand Lock Nut 1 Right Hand Cone 1 Right Hand Dust Washer Axle Nut (interchangeable with S254 illustrated) Left Hand Ball Cage Right Hand Ball Cage Step	2 6 1 1 9 3 2	C.C. C.C. K K N N X X X X	32 33 36 43 66 24 25 48 49	Brake Cone or Clutch I Steel Brake Band Bronze Brake Band Brake Arm Sprocket Lock Nut Brake Arm Clip Lubricator Ball Cage Dust Cap Sprocket Sprocket Washer Brake Arm Clip Nut Brake Arm Clip Bolt Axle Nut Washer	Nut	2	d. 0 6 6 6 4 3 4 1 6 2 1 1
	Trailer Spring	2						



LUBRICATION.

Lubricate the hub about every 100 miles using a good Cycle or Sewing Machine Oil and grease for the inner cable and small chain. Grease or any lubricant of a sticky nature must not be used internally. It is not advisable to inject paraffin.

Keep the gears ("K." and "K.C.") correctly adjusted and your Hub will be "O.K."

HILLIANDING

LIGHTEST AND STRONGEST OF ALL THREE SPEED GEARS.

Audummenanananan

Taking the weight of an ordinary freewheel and hub at 1 lb. 5 ozs., the adoption of the Sturmey-Archer three speed hub will add approximately only 1 lb. to the machine.

