IMPORTANT.

Instructions and Recommendations for Fitting the Cyclo Gear.

CORRECT FITTING MEANS CORRECT WORKING.

A "Cyclo" is Bound to Work and Give its User Satisfaction if Correctly Fitted.

CYCLO

TRADE MARK.

THE IDEAL VARIABLE GEAR.

36 page Descriptive Booklet Free on Application.

Published by :

CYCLO GEAR CO., LTD.,
CYCLO WORKS, BIRMINGHAM, ENGLAND.

— PRICE 2D. —
Post Paid.

SOME "CYCLO" DONT'S.

DON'T strain the cable unnecessarily by moving the control lever when the machine is at rest, and even when pedalling don't move the lever except with a definite purpose.

DON'T remove your back wheel before noting the position of the spindle in drop-out. This is necessary in order to replace it in exactly the same place. It is a good plan to make a small file-mark on the drop-out, as this will form a permanent guide. Better still invest in a pair of "Rosa" stops (9d.).

DON'T leave your cycle where the "village mechanical idiot" can interfere with the control lever, otherwise your chain may jump off when you re-mount. Always see that the control lever is in the correct position before mounting.

DON'T expect your cable to last indefinitely without proper treatment. The exposed cable should be kept well greased, and don't forget the gear end.

DON'T leave your machine in top gear when coming to a standstill; but change into bottom gear. You will find it easier to re-start.

DON'T wrench or bend the tension arm if your gear seems out of adjustment. The spindle nut and locknut are provided to give all lateral adjustment needed. Line up with the lever in the forward horizontal position and the jockey-sprocket level with the bottom gear cog. Then tighten up the locknut again, keeping the slot on the fixed spindle vertical.

DON'T expect the bearings of the change action to lubricate themselves. We recommend heavy grease, which need only be renewed once a year. Graphite grease is useful, as it helps to keep out the wet from the bearings.

DON'T simply grumble if your gear goes wrong and condemn it out of hand. WRITE TO US. We are here to help you.

The life of your chain and sprockets can be greatly increased by reversing the chain every 2,000 miles or so.

POINTERS.

IF A CABLE BREAKS it is nearly always at the nipple No. 32 (see page No. 8) and is almost invariably caused by incorrect assembling or adjustment, the wire being bent sharply and strained by the nipple being carried too far around. On a three-speed the nipple must not travel upwards further on either side than to a level with the centre of the spindle (C).

WHEN TAKING OUT THE REAR WHEEL, run the chain on to the small cog (A). It allows more room for removing the chain from the jockey and tension cogs.

SLOW CHANGING is caused by the support being too far from the cogs. To remedy this, move the rear wheels as far forward as safely possible in the fork ends. If the support is of the clip-on type the support may require moving to the rear. If the support is brazed on and the wheel well forward, fitting a combination of larger sprockets will usually effect an improvement.

IMPORTANT CHAIN POINTERS.

There is a general tendency on the part of certain manufacturers to send out machines with the chain far too long, causing insufficient spring tension and in the long run excessive chain wear. The chain length varies in accordance with the size of sprockets.

If properly fitted, the chain will not jump off if some care is taken not to ride too violently over very rough surfaces. Where no consideration will be given to this, we recommend the tension pulley type in place of the tension cog to eliminate jumping caused by rough riding. If the chain "Claps" when the high gear is in use, take out a couple of links. The correct chain length can be ascertained. (*See centre page*).

CARE AND MAINTENANCE.

Curiosity still brings trouble to many people, and in the case of the derailleur gear, other people's curiosity often brings trouble to the cyclist. When training with a derailleur fitted bicycle it is advisable to put the lever into low ratio and fasten it down. This little precaution may easily save you a dirty job.

REMOVAL OF TRIPLE FREEWHEEL AND SPROCKETS

1.—Soak the Freewheel overnight in paraffin. Freewheels which have been in position for some time are often tight and difficult to remove.

2.—Place an old chain round the largest sprocket and get someone else to hold it while the top and middle sprockets are removed. Two Cog Removers may be used in opposite directions, but failing these we suggest the use of a soft chisel. Tap on each tooth alternately while the largest sprocket is held firm. You will find that the top gear sprocket and the middle cog will be easy to remove. Both these cogs are right-hand thread.

REMOVAL OF 2-SPEED FREEWHEEL AND SPROCKET

1.—Soak in paraffin overnight.

2.—Place a two-peg remover in freewheel slots, locking into position by means of the spindle nut.

3.—Place the remover in a vice and turn the wheel in an anti-clockwise direction to unlock the freewheel. Unscrew the spindle nut a trifle and repeat the operation. The freewheel should then come off quite easily.

REMOVAL OF LOW GEAR SPROCKET

1.—Place a piece of chain round the top-gear sprocket (freewheel) then lock in a vice, taking care not to damage the teeth.

2.—Use a cog remover or, if not available, tap the teeth one after another with a soft chisel. As the cog is a left-hand thread, tap in a clockwise direction.

CABLE STRETCH

Cable stretch should be taken up by means of the knurled adjusters placed near the control.

SYSTEM

Side-play (if any) in the Tension 10th Sprocket or Pulley is taken up by adjusting the cone bearing.

In the Jockey Sprocket, adjustment is effected by taking off one or two of the washers No. 7, making it possible to screw the outside race No. 9 further down. This race, which has a right-hand thread must be removed in the first instance.

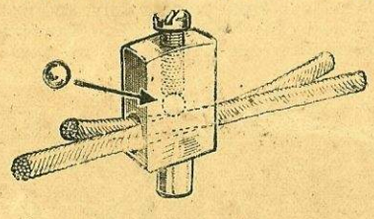
SPARES AND REPAIR SERVICE DEPARTMENT

For the convenience of the Trade and "CYCLO" users, we overhaul any of our listed parts and guarantee to despatch on the day of receipt. For Hub-Brake re-linings or freewheel repairs, it will be more convenient for you to send the complete wheel to us. Freewheel overhaul, including replacement parts costs 2/6.

24 HOURS SERVICE ALWAYS

"CYCLO"

PATENT CONNECTION JOINT.



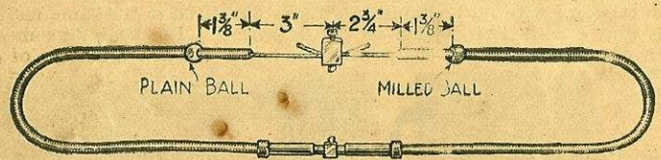
Patent Connecting Nipple No. 32.

With this latest improvement, the inner wire may be replaced by the roadside. No soldering—no tools—and yet the repair can be carried out quickly, satisfactorily and permanently.

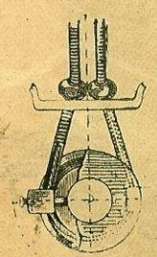
Inner wire only with No 30 nipple, *each* **10d.**

Full length of best quality 14-strand, non-fray wire complete with connecting joint. Cycle or Tandem length, *each* **1/3**. Connection Joint No. 32 only, *each* **5d.**

Sketch giving measurements for cable replacement of Two or Three-Speed transmissions.

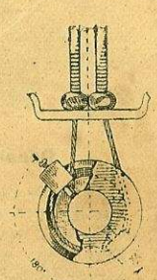


Distance 8½in. *between stop balls.*



When a cable breaks it is nearly always at the nipple (No. 32 in illustration of replacement parts), and this is almost invariably caused by incorrect assembling or adjustment, the wire being bent sharply and strained by the nipple being carried too far round.

On a Three-Speed, the nipple must not travel upwards on either side beyond a point level with the centre of the spindle (C).



Correct Setting

Showing Incorrect position of nipple No. 32.

TRANSMISSION REPAIR SERVICE.

Any appointed "CYCLO" agent will exchange your old cycle or tandem transmissions for re-conditioned ones, for a fixed charge of **2/-**. If there is no agent in your district, send your old transmission to the Works with a remittance of **2/-** and it will be replaced by return of post

CYCLO FITTING INSTRUCTIONS.

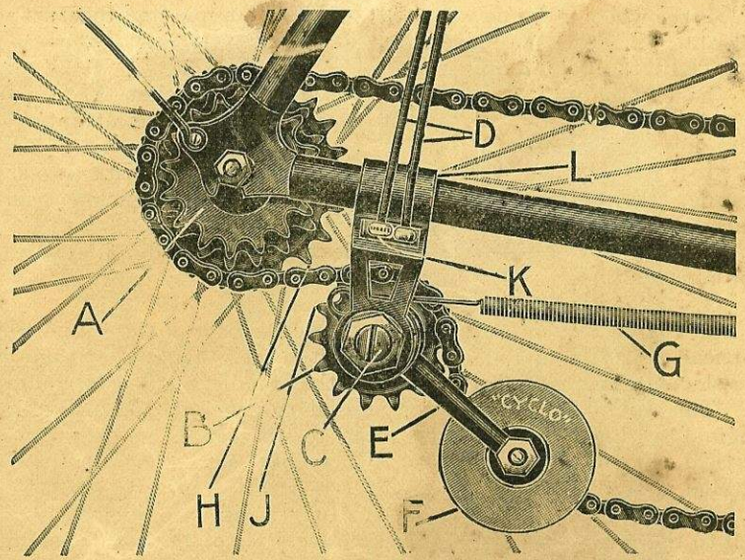


Fig. 1.

The slot of the spindle C *must be in vertical position as shown.*

The alignment of the jockey sprocket B is effected by the recessed adjusting nut fitting behind the support L.

Notice that milled ball K is on left-hand side.

A—Top Gear Sprocket.
B—Jockey Sprocket.
C—Fixed slotted Actuating Spindle.
D—Transmission Cable.
E—Tension Arm.
F—Tension Pulley.
G—Tension Spring.
H-J—The clearance between Low Gear Sprocket Teeth to Jockey Sprocket Teeth not to exceed 1in.
K—Milled ball on **left-hand** side.
L—Clip-on Bracket fitted close up to give correct clearance between **H** and **J.**

FITTING INSTRUCTIONS.

1.—Make sure that the rear fork-ends are not less than 4½in. wide; if it is necessary to widen them, each stay must be opened an equal distance.

See that the rim is central between the outsides of the cones or cone lock-nuts.

Place wheel in frame with the " CYCLO " triple freewheel set screwed on, and with the spindle as far forward as safely possible.

Tighten the axle nuts.

Run chain over chain wheel and the small sprocket (A) to make sure that the chain clears the seat stay, paying particular attention to the clearance of the joint.

If it fails to clear, the spindle may be packed out with a washer, but in order to preserve the chain-line, a washer of equal thickness should be placed on the other side.

" CYCLO " or other hubs made specially for derailleur gears will not require this.

2.—Fix support (L) to the chainstay.

It is of the utmost importance that the lower part of the support shall be vertical as shown in Fig. 2, so that when the outside and inside nuts of the slotted spindle (C) are tightened the spindle will be horizontal.

This spindle must also be parallel to the hub spindle, but as the original setting may vary according to differences in chain stays, the vertical portion of the support (L) may be " set " to bring the flat side parallel to the wheel.

Where the clip-on type of support (L) is used, place the support well to the rear, with just sufficient clearance to allow for wheel removal when forward opening drop-out is concerned, or if the fork-ends are rear-opening with sufficient clearance between H and J (Fig 1). When the chain is running on the big sprocket and the hub spindle is in its proper place at the front of the fork-end slots, the clearance between the big sprocket and the jockey cog must not exceed 1in., the correct distance of the slotted spindle (C) depends upon the size of the largest sprocket

Illustration showing correct position of " V " brazed-on Bracket when fitted is seen in centre page.

The correct distances from centre of slotted spindle (C) to centre of hub spindle are as given below :—

When largest sprocket is	18	19	20	21	22	23	24	26	28 th.
Correct distance is ...	2½	2 5/16	2 5/8	2 11/16	2 3/4	2 13/16	2 7/8	3 1/8	3 1/4 in.

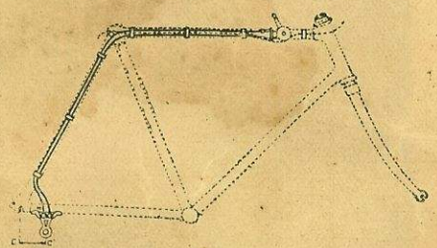


Fig. 6. Showing Cable Layout.

Special length transmission supplied to requirements.

N.B.—When requiring special length transmission always give measurements from end to end of OUTER CASING.

"ROSA" DOUBLE CHAIN WHEELS.

The use of a Double Chain Wheel immediately doubles the number of ratios available, and is advised in all cases where a two-speed gear is used. Chain rings may be riveted to customer's own Chain Wheels in 5-pin pattern only, and providing the design is of a suitable type. Double Chain Wheel can also be fitted to Tandems with cross-over drive. There must be at least eight teeth difference between the two rings to allow for riveting and correct working.

Stock Sizes :

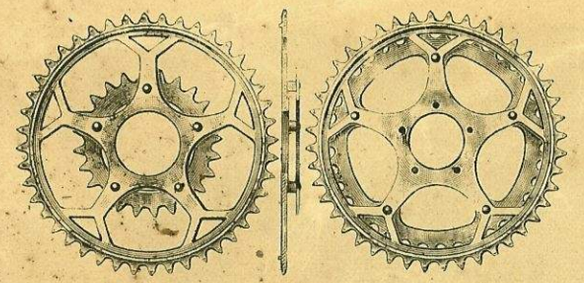
5-PIN CHAIN WHEELS

36th—38th

40th—42th

44th—46th

48th—52th



Stock Sizes :

CHAIN RINGS

24th—34th

26th—36th

28th—38th

30th—40th

32th—42th

In fitting a " CYCLO " double chainwheel to increase the gears given by the freewhee group, replace the bottom bracket axle with one giving gearcase clearance. Fit the " CYCLO " double chainwheel and crank in the usual manner. Measure up the chain-line of the bracket by taking the distance from the seat tube to a point half-way between the two chain wheels and adding half the diameter of the seat tube. Assuming this chain-line to be 1⅝in. and the chain-line of the hub and cogs to be 1½in., correct the latter to 1⅝in. by adding ⅛in. distance piece to the near side of the hub axle. It will be necessary to re-centre the rim if the wheel is already built. TRIPLE CHAIN WHEELS giving double rear drive on tandems with both chains on off-side are fitted in the same manner as double chain wheels, but a SPECIAL AXLE IS NECESSARY. For chain-line measure to half-way between centre and outside chain wheel and add half the diameter of seat tube.

Fig. 10.

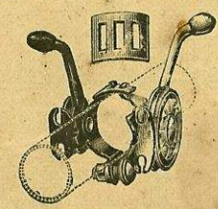


Illustration showing " ROSA " lever coupling of c/w derailleur to "CYCLO" Gear Control.

CHAINWHEEL DERAILLEUR.

Specially designed for Double and Treble Chain Wheel users.

Place chain on the larger chain wheel and the small cog. Unscrew outside plate of the chain guide. Clip the device to the seat tube, just sufficiently above the bracket for the chain guide to clear the larger chain wheel by ⅛in. Turn the pulley until the chain lies in the middle of the chain guide. Loosen rear screw holding guide, and set front and rear bars on guide an equal distance from the chain wheel, and then tighten screw. Screw on the outside plate. Next set small cam (at top left corner of moving plate) to prevent the plate sliding further to the off-side. Fit the cable in the same way as a "CYCLO" cable, placing the longer end on the outside of the pulley. The control lever can be fitted to the " CYCLO " control clip by removing the half-clip of the latter and using a connecting strap as shown in the illustration.

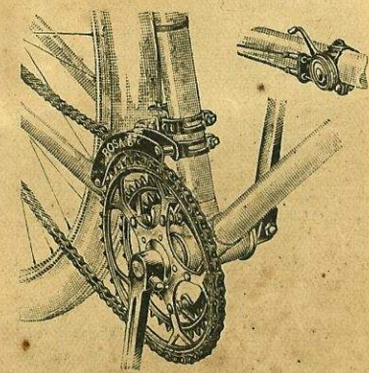


Fig. 11.
Illustration showing " ROSA " Chain Wheel Derailleur.

"CYCLO" TWO SPEED.

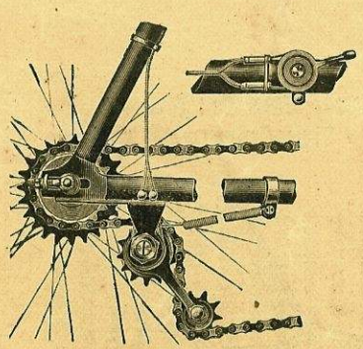
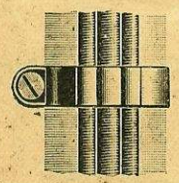


Fig 8.



Use "CYCLO" Cable Clip.

The "CYCLO" Two-Speed can be fitted on any standard hub without alterations. Follow the instructions mentioned overleaf as far as the fitting up of the gear and transmission are concerned, and also recommendations mentioned.

Fig. 8 shows correct fitting and correct position of tension arm on top gear, with the control lever right down.

"CYCLO" FOUR SPEED.

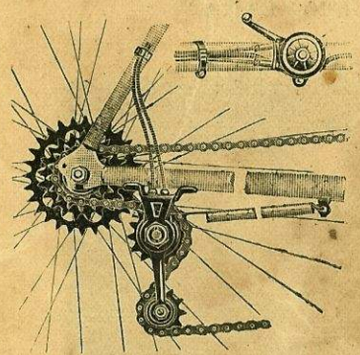


Fig. 12.
Showing the position of the control in the first gear.

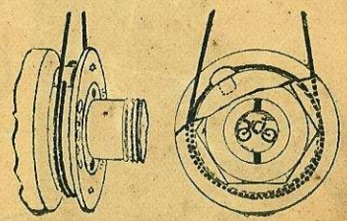


Fig. 13.

In the "CYCLO" Four-Speed the chain-line is measured to half the distance between the 2nd and 3rd cogs. The cog assembly, control and cable are different from the Three-Speed, but in fitting proceed as directed for Three-Speed except with regard to cable.

The Four Speed jockey cog requires greater lateral movement, and the pulley which actuates it must describe more than the half-circle required by the Three-Speed. Therefore, give the inner wire one complete turn around the pulley (see Fig. 13), the stud in this case being at the top of the groove when the jockey cog is central between the 2nd and 3rd cogs, and the control lever is approximately upright.

FITTING INSTRUCTIONS.

3.—Thread the square nipple end of the cable (D) down through the slots in the support, keeping the knurled ball (K) to the rear.

Pass the slotted end of the spindle (C) through the loop in the wire, and insert end of spindle in support keeping the shouldered nut inside.

Secure the spindle loosely in position with the slot upright.

Insert the nipple in the hole provided in the groove of the pulley.

Keeping the nipple at the bottom of the pulley and equally distant from both ends of the outer casing, manipulate the spindle nuts until the jockey sprocket (B) is directly in line with the middle sprocket of the free wheel.

Tighten spindle nuts and make sure that the slot is still vertical.

The middle sprocket, jockey sprocket (B) and tension pulley or cog (F) should now be in alignment.

Next fit the cable to the control, carrying the rear wire (K) to the top of the control. Insert flat end of top sleeve in the slot of the control plate, and the nipple in its hole in the groove of pulley. Pull back the bottom sleeve until the inner wire slips through the bottom slot, using the lever to assist, as shown in Fig. 4.

Work the control lever and see that the jockey (B) and tension (F) cogs are in line with each of the three sprockets in turn (see Fig. 2).

If fitted correctly the control lever will move freely when gear changing, which must only be attempted while pedalling.

When the control lever is in the forward position the cogs B and F should be aligned with the large sprocket, and the cable nipple should be to the rear and level with the centre of the slotted spindle (C).

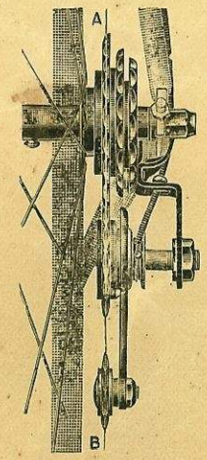


Fig. 2. — Showing correct alignment of actuating spindle "C."

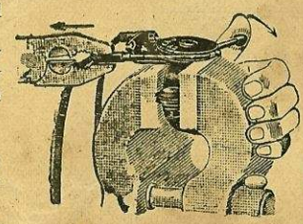


Fig. 4.—Showing method of fitting transmission of control lever.

Fig. 5. — Showing chain testing.

This is illustrated in Fig. 2, the cogs mentioned are in line from A to B. When the control lever is approximately vertical the cable nipple will be at the bottom of the groove and the cogs B and F will be in line with the middle sprocket.

Similarly, when the control ever is carried to the rear, the cogs B and F are in line with the small sprocket, and the nipple is carried forward and upward until it is again level with the centre of the slotted spindle (C).

Fix tension spring (G) to chain stay.

The clip must be from 11¼in. to 11½in. from the centre line of the support (I.). Hook the other end of the spring to the top end of the tension arm (E) closing up the hook outward.

Next test the chain for tight links by running it over the fingers, as in Fig. 5.

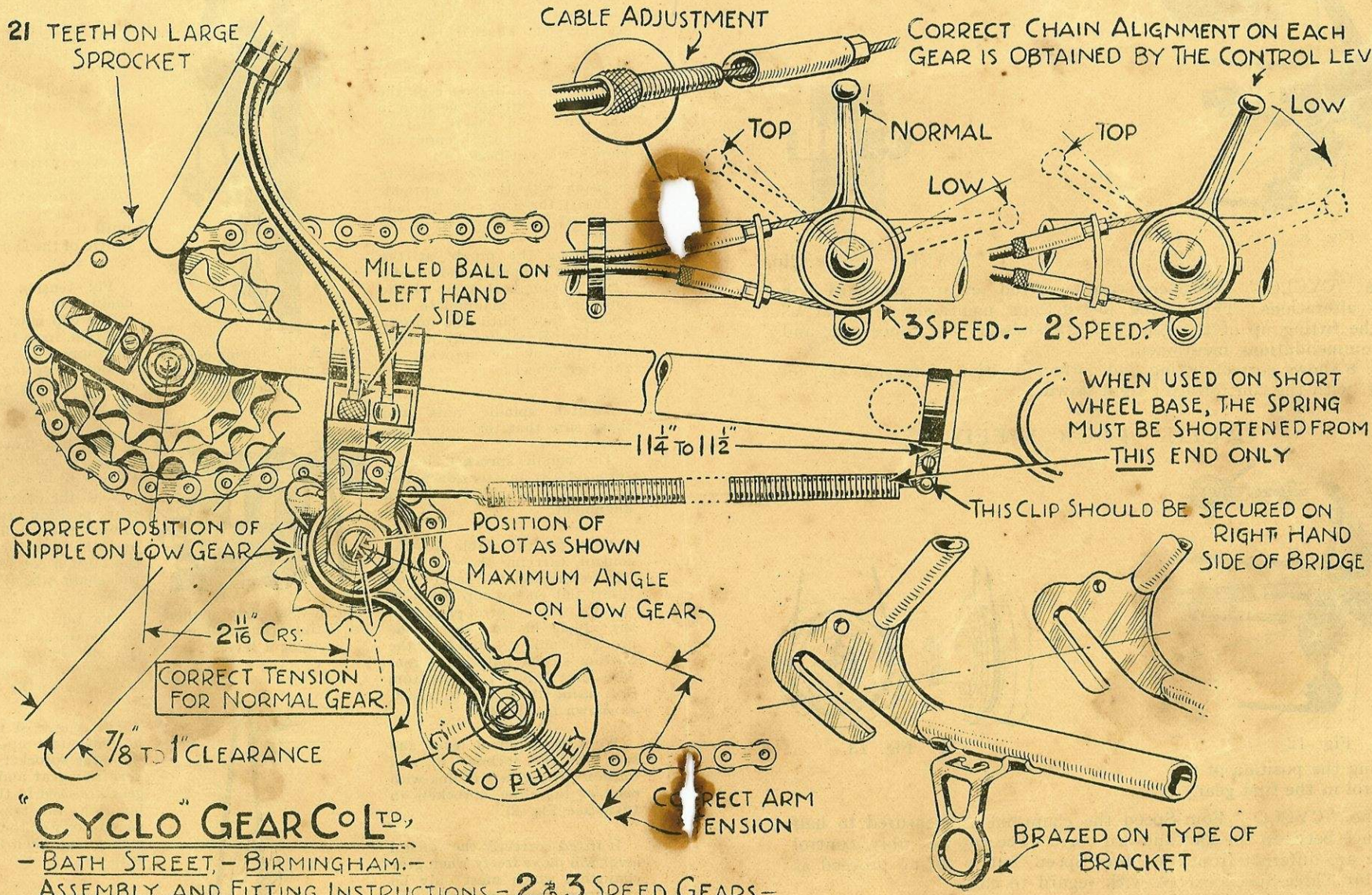
With the control lever in the rear position run the chain around the small sprocket (A) over the jockey cog (B), under the tension cog (F) and around the chain wheel, and join the ends.

The tension cog (F) should now be to the rear of the jockey cog (B) and putting sufficient tension on the chain to prevent it sagging at the top.

The length of the chain will be dependent upon the size of the large sprocket, and where a very low gear and a very high gear are used in the same combination, the tension cog will have to be well to the rear of the jockey cog when the high gear is in use.

SPRING TENSION

On short wheel base machines, the standard length spring as supplied can be shortened up to 1¼in. at the clip end but NOT at the hook end.



"CYCLO" GEAR CO LTD,
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ASSEMBLY, AND FITTING INSTRUCTIONS - 2 & 3 SPEED GEARS -

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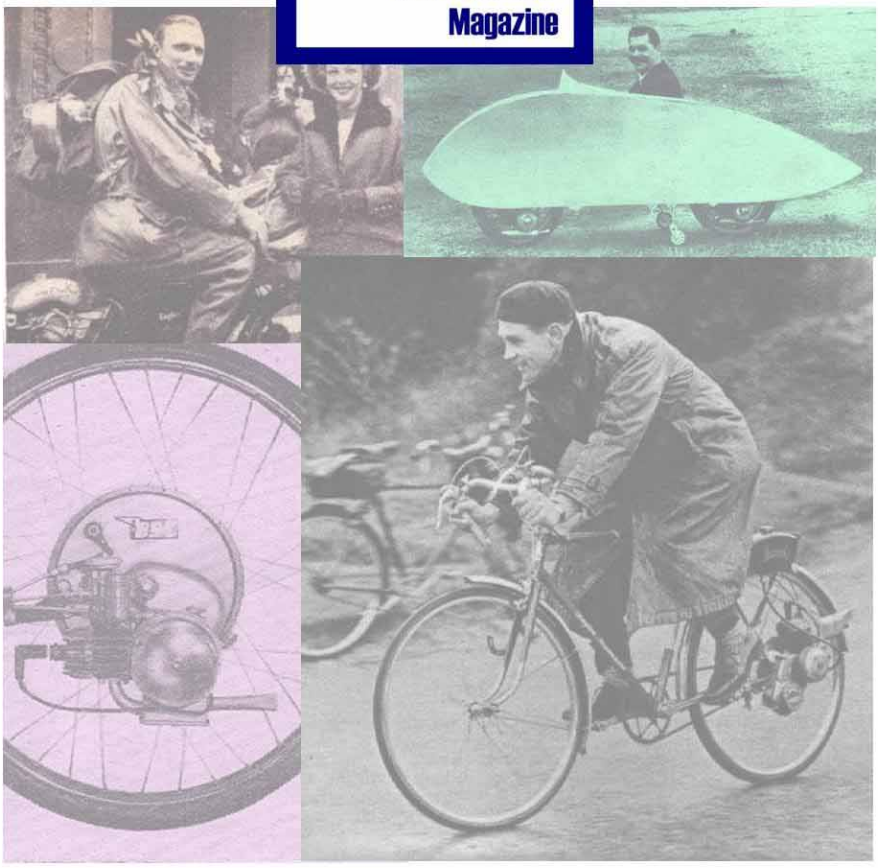

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