



Around the Trade.

FROST GEAR

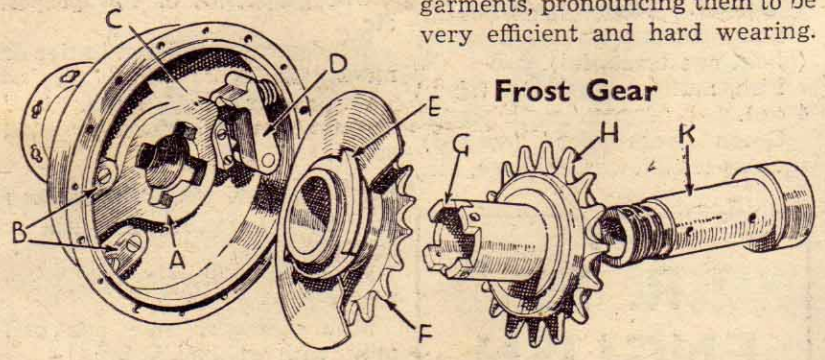
An interesting variable gear is that invented by Mr. S. J. Frost, of the Prospect Engineering Co., 479a, Finchley-road, Hampstead, N.W.3. The device can be made to give either two or four speeds, fixed or free.

The chief feature of the gear is that there is no external control whatever, the variation being effected merely by movement of the pedals. Normal gear is the higher of the two ratios, and when low gear is desired it is only necessary to free wheel slightly and take up the drive again smartly. To regain normal gear it is only necessary to free wheel for a brief period.

The gear which was submitted to us for a test was of the two-chain type, but an alternative design uses a single chain combined with an epicyclic train so

that a neater appearance is obtained. Yet another design provides for a small countershaft near the rear hub.

In the accompanying "exploded" view of the gear, F is the high-gear cog and H is the low-



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Frost Gear

gear cog, which is actually a free wheel. In high gear the drive is taken from F, through the dogs E to the pawl D and thus to the hub. With this gear engaged the hub of the free wheel H rotates at the same speed as the hub, so that there is a slight over-running-action of the free wheel.

Supposing that the low gear is required; in high gear the arm of the low gear driving member A has been lying against the lower of the two bosses B; by smartly taking up the drive with the pedals the member A is rotated slightly and the cam C pushes the pawl out of engagement with the dogs E. The drive is then taken through the free wheel H, the driving cog, G, the female dogs in A, and thence to the hub through the upper of the two projections B.

To retain high gear it is only necessary to free wheel, when the hub over-runs the driving member A, and cam C releases pawl D, which then engages with the dogs E. The member K screws into the hub and rotates with it, the driving side ball-race cup being contained in the large end.

The invention is now in the hands of Messrs. Miller, Mills and Bantock, Victoria - chambers, 55-56, Chancery-lane, W.C.2.

We must agree that something exceedingly good is necessary to withstand the hard wear and constant use that a task like entails.

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