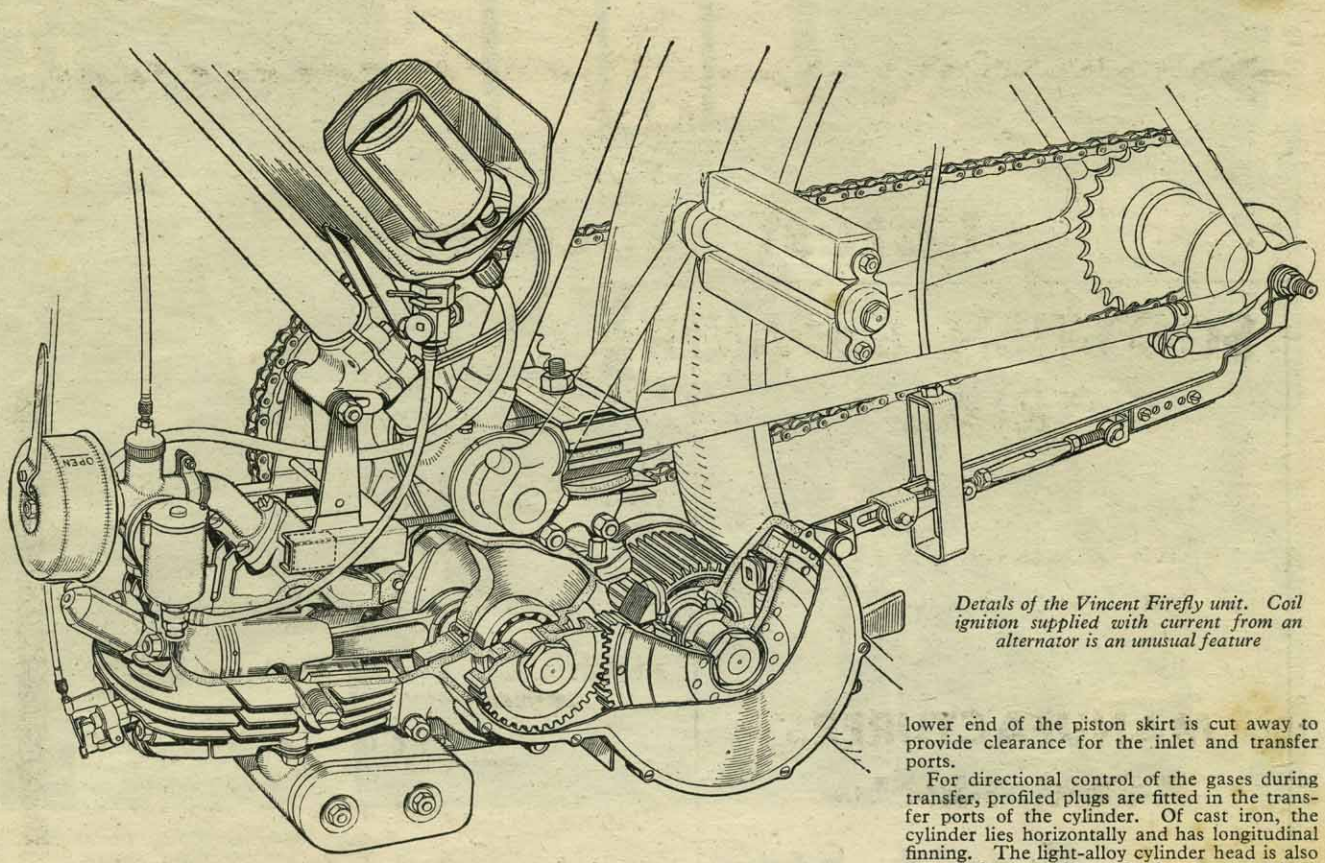

Details of the Vincent Firefly unit. Coil ignition supplied with current from an alternator is an unusual feature

Vincent Cyclemotor

Famous Firm to Manufacture Miller Unit

MANUFACTURE and marketing of the 48 c.c. Miller cyclemotor, a full technical description of which appeared in *The Motor Cycle* for 31 January, 1952, has been taken over by Vincent Engineers (Stevenage), Ltd. The unit will be known as the Vincent Firefly.

The engine retains its basic characteristics, though a few minor modifications have been made since the unit was exhibited at the January Brussels Show. The Amal carburettor has a bottom-feed float chamber instead of the top-feed type; a slight change has been made in the shape of the air strangler; the piston has two rings, and the roller engagement gear is now cable operated from a handlebar lever.

The unit is designed for mounting below the bottom bracket of a cycle frame. The mounting brackets—one on the front down tube and one on the chain stays—incorporate sliders to enable the unit to be moved horizontally for engagement or disengagement of the friction-roller drive. The 3¼in diameter roller, which comprises a serrated, cast-iron outer member rubber-bonded to a steel centre-piece, is mounted on a countershaft and gear driven at half engine speed. The non-magnetic, fibrous countershaft gear incorporates an extremely compact, 9-watt A.C. generator. This alternator supplies current to the ignition coil, which is housed in a recess formed in the base of the five-pint petroil tank. Current is also available for front and rear lights and a small electric horn.

The countershaft is supported on two ball races; that on the left-hand side is housed in a rearward extension of the drive-side half crankcase, while the other is carried in an outrigger bolted to the rear of the right-hand half crankcase. These bearings are identical with the two crankshaft bearings; all are fitted with synthetic-rubber oil seals. Full disc-shape, internal steel flywheels are employed, they are forged in one with their ¾in diameter mainshafts. Flywheel diameter is 3¾in.

Fitting of the ½in diameter, nickel-chrome steel crankpin is ingenious. A light press fit in two parallel holes in the flywheels, it is taper bored at each end to receive two conical steel collets. One of the collets is threaded axially, the other is drilled with a clearance hole. When the collets are inserted in the crankpin, they are held in position by a long, countersunk screw. Their length is such that, at this stage, they stand slightly proud of the outer faces of the flywheel discs.

Once the flywheel alignment has been checked, the collets can be forced home by a press or the jaws of a vice, thus expanding the crankpin in the flywheels. Removal of the collets is easily effected after slackening the long centre screw. Tapping its head dislodges the threaded collet; the other can then be drifted out.

Forged in nickel-chrome steel, the connecting rod forms the outer bearing for the caged-roller big-end. The inner bearing ring is pressed on to the crankpin. A pressed-in bronze bush forms the little-end bearing. The Lo-Ex alloy piston has a fully floating gudgeon pin retained by wire circlips. Two plain, pegged piston rings are fitted. The lower end of the piston skirt is cut away to provide clearance for the inlet and transfer ports.

For directional control of the gases during transfer, profiled plugs are fitted in the transfer ports of the cylinder. Of cast iron, the cylinder lies horizontally and has longitudinal finning. The light-alloy cylinder head is also finned horizontally. It houses a 14mm sparking plug and a compression-release valve. Four long bolts hold the cylinder and head to the crankcase. The combustion chamber is hemispherical in shape; compression ratio is 5 to 1. Petroil lubrication is employed; the recommended proportions are one part of oil to sixteen parts of petrol.

The contact breaker is housed in the right-hand half crankcase, and the rocker arm is actuated by an internal cam in the hollow mainshaft. Simple adjustments are provided both for the ignition timing and the contact-breaker gap. The complete contact-breaker assembly is retained by two screws; after these have been slackened the assembly can be rotated by means of an eccentric. A similar scheme is used for the adjustment of the stationary contact-breaker point.

Low-speed Torque

A box-shape silencer fits below the cylinder and can be dismantled for cleaning. Power output of the engine is said to be 0.9 b.h.p. at 3,800 r.p.m. Weight of the unit is 18lb. The fuel tank is rubber mounted above the front down tube of the frame. A single control lever on the handlebar operates both throttle and decompressor. The drive-engagement control lever incorporates a spring-loaded catch which locks it in the engaged position.

A member of *The Motor Cycle* staff undertook a brief run around Stevenage on a prototype Firefiy recently. Engine starting proved easy, either by use of the decompressor or the drive engagement control. Low-speed torque was uncommonly good—a praiseworthy feature in a cyclemotor. The engine's hill-climbing abilities were also first-class.

The makers are Vincent Engineers (Stevenage), Ltd., Stevenage, Herts. The price has not yet been fixed.

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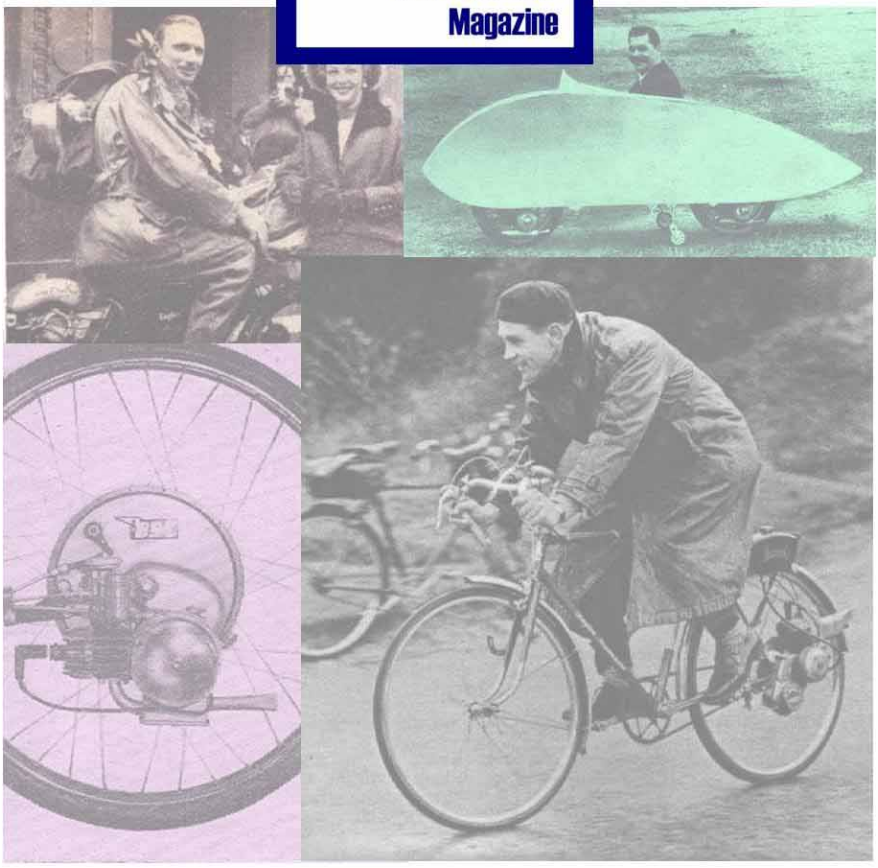

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