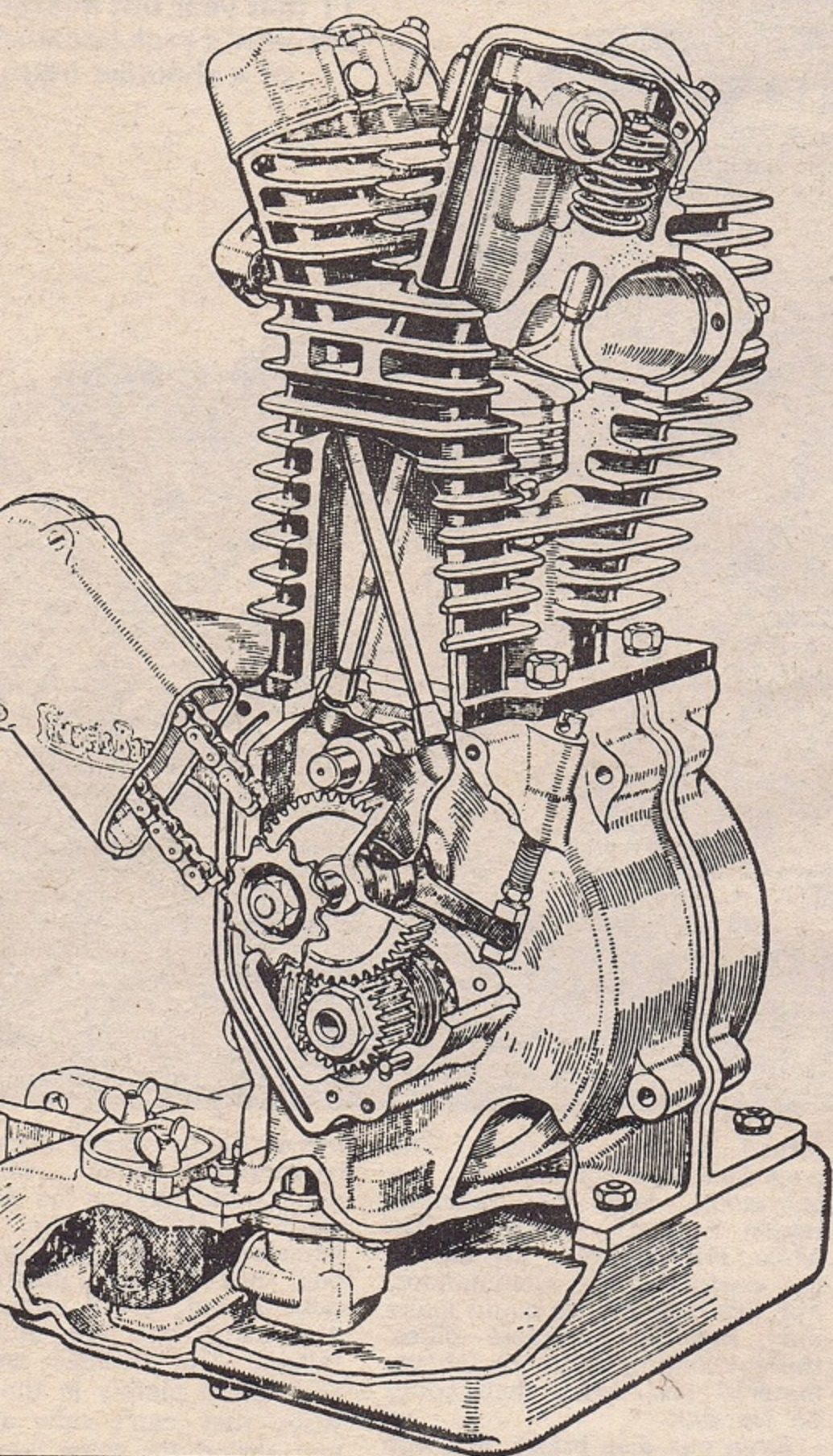
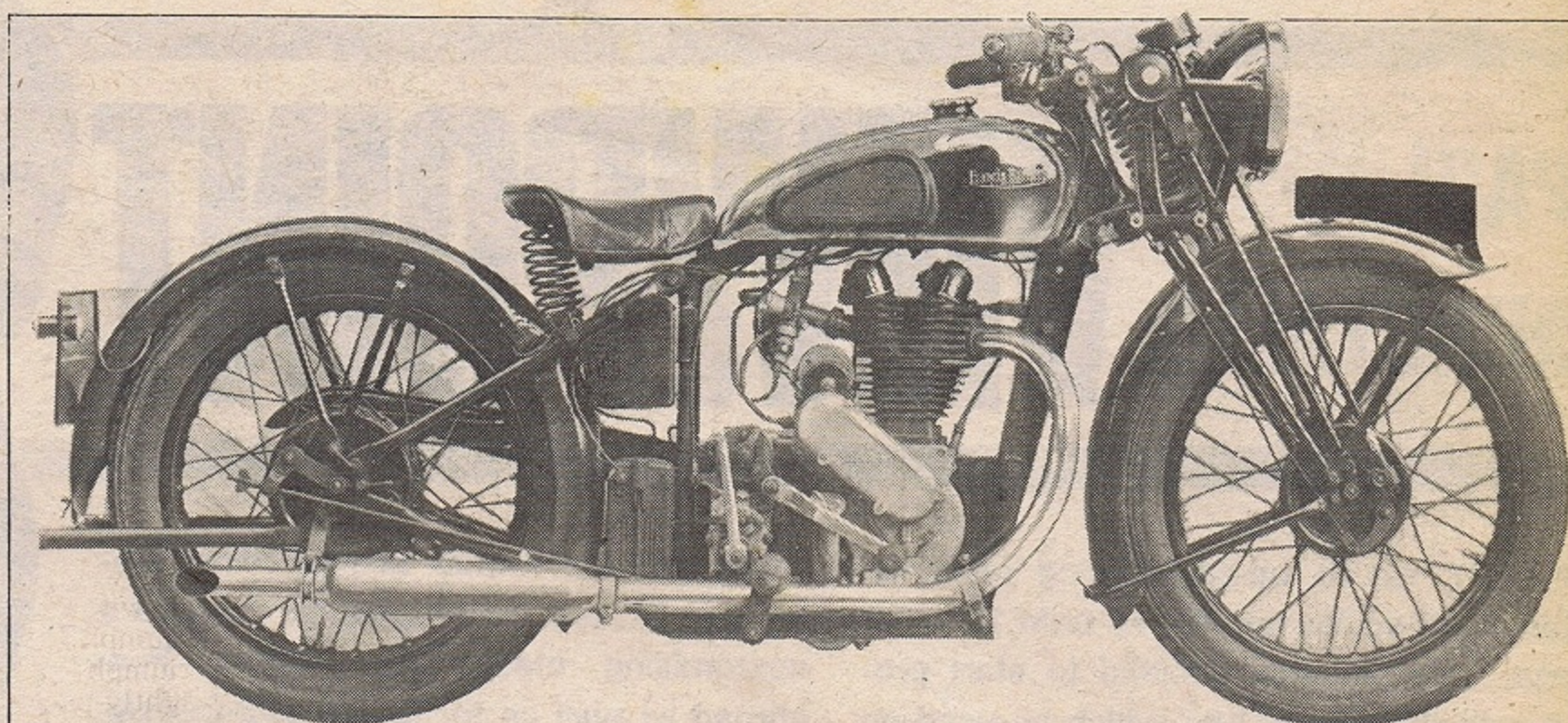


TRENDSETTER

by **BOB CURRIE**



Left: The 247 cc Stag engine, designed and built by Blackburne although marketed as the Francis-Barnett. For the period, it was unusual in having cross-over pushrods and in-line rockers fully enclosed within the cylinder and head castings, except for the detachable rocker covers. A pump forced oil to the bearings from the 4½-pint, light-alloy container below the crankcase. The pump was driven by skew gearing from the crankshaft. Roller bearings were used at the big end, ball bearings at the mainshafts



The Stag with its composite frame — bolted-up steel pressings and tubes. The Albion four-speed gear box was fitted with a positive-stop foot change

247 cc FRANCIS-BARNETT STAG

WHEN enthusiasts came to study the announcement of the 1935 Francis-Barnett range, the shock was almost as great as if Nelson had climbed down from his column to paddle in a Trafalgar Square fountain. Fanny-B, the very cornerstone of two-stroke respectability, had had the audacity to produce a 247 cc overhead-valve model.

Any other small maker contemplating a four-stroke would probably have made use of the ubiquitous JAP engine. But not Francis-Barnett; their new Stag had to be a cut above the rest.

The Francis-Barnett name was cast on the timing cover, but the engine was, in fact, built in Surrey at the Blackburne works. Exclusively for F-B, it had come from the drawing board of the famous Ike Hatch (designer of the Excelsior Mechanical Marvel,

among other notable engines) and, as an object lesson in neatness and economy of working parts, it is worth close study, even today.

At a time when exposed valves, and pushrods encased in external tubes, were still quite common, the Stag broke new ground by housing the pushrods in a tunnel cast in the cylinder barrel, while there was especially neat enclosure of the valves and rockers.

There was novelty, also, in the layout of the timing gear. There, both cam followers pivoted on a common spindle, and by arranging the pushrods in X-formation, a straight thrust to each rocker arm was obtained. Up top, the design permitted straight rockers, set across the cylinder head. (A very similar arrangement was seen in the BSA C11 two-fifty; but that was several years later.

Lubrication was wet-sump, with 4½ pints of oil carried in a rectangular, cast-aluminium sump bolted to the underside of the crankcase. Driven by skew-gearing from the crankshaft, a rotary pump in the sump delivered oil through drillways to the big-end and main bearings, and to the rocker boxes.

Bore and stroke were 68 x 68mm. The internal flywheels were machined all over, the big-end bearing had a double row of rollers and the crankshaft was supported both sides in ball bearings.

Except that the girder-pattern front fork and the rear sub-frame were of tubular construction, the frame was virtually

that of the two-stroke Cruiser and employed an assortment of steel pressings allied with a forged-steel steering head.

Miller's answer to the Lucas Magdyno, a Dynomag looked after ignition and lighting. Transmission (which included a cast-aluminium primary chain-case) was through a four-speed, foot-change Albion gear box. The handlebar was rubber mounted and tyre size was 19 x 3.25in.

Francis-Barnett had not stinted on luxury; at £48 the Stag was a good £15 dearer than such JAP-powered contemporaries as Cotton and Montgomery. But for a two-fifty of 35 years ago, it could certainly go. In a *Motor Cycling* road test, it reached an impressive 68 mph. And it collected a gold medal in the 1935 International Six Days Trial.

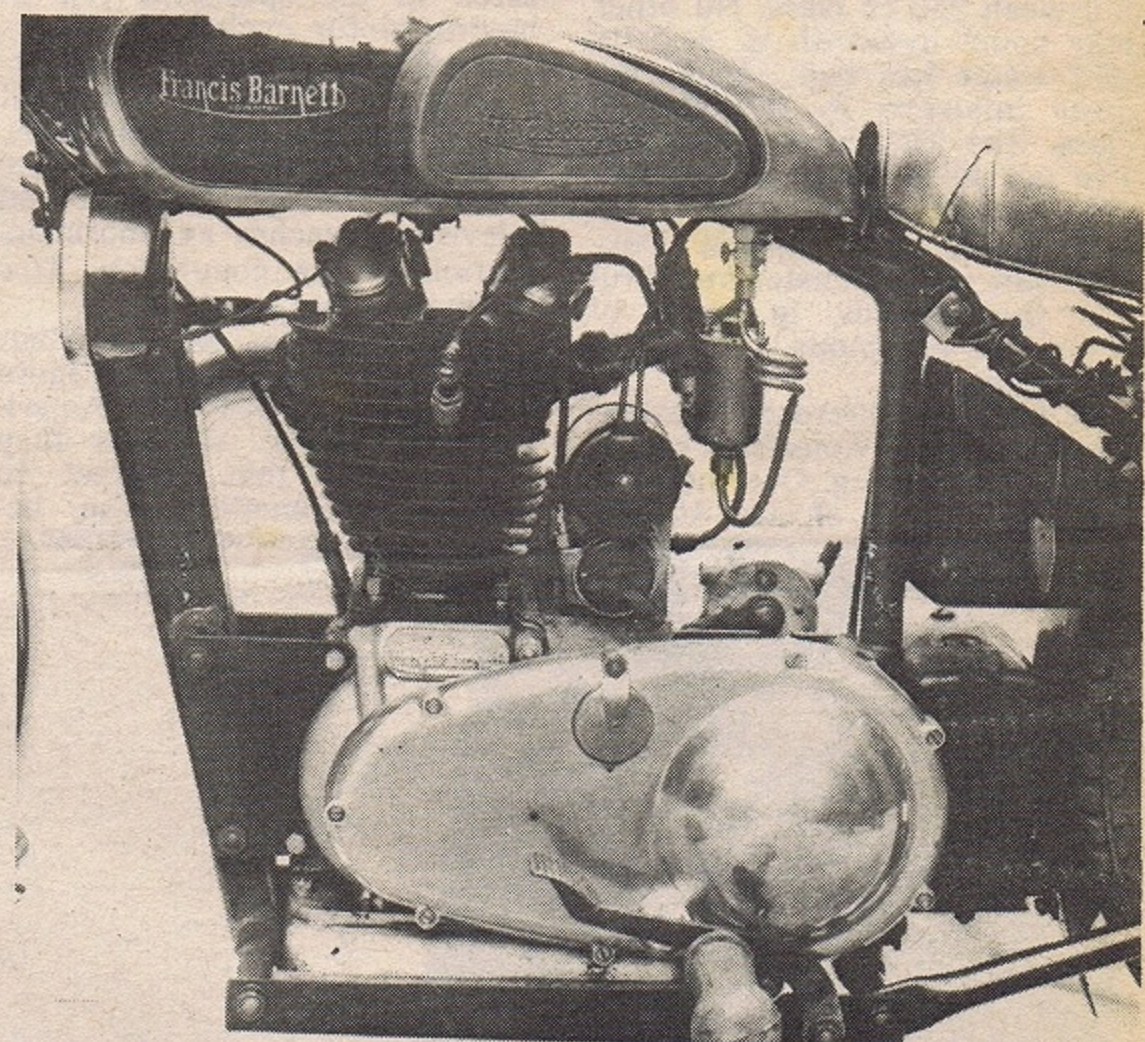
Only modification for 1936 was the fitting of a slightly wider rear chain, but by then the price had been dropped to £45. A year later, the Amal carburettor had been turned

round to bring the previously horizontal mixing chamber upright, and the oil compartment had a longer filler neck.

Even more interesting, the standard Stag now had a sporty companion in the Red Stag at £48. This had the same engine and gearing, and justified its sports tag mainly in appearance; it had narrow-blade mudguards, flat handlebar, fishtail exhaust, red-panelled tank, a 3.00 x 20in front tyre and a 3.50 x 19in rear. At no extra cost, you could even have it with knobbles on both rims!

Did the public but know it, this was the Stag at bay, and before 1937 had run its course, both the standard and sports versions had been dropped. The decision was not of Francis-Barnett's choosing, but reflected the close-down of Blackburne, the engine makers.

Maybe it was fate after all. The Fanny-B was a two-stroke in the eyes of most folk, and for the firm to dabble in any other type was tempting providence.



A polished, cast-aluminium oil-bath case enclosed the primary drive. Ignition and lighting were fed from the Miller Dynomag behind the cylinder and chain-driven from the timing gear