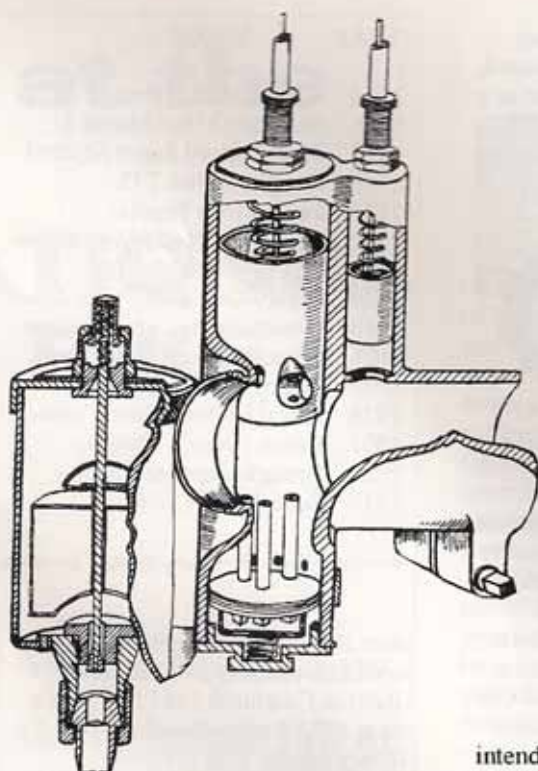


CASTING AN EYE OVER EARLY CARBS

The desire for an entirely automatic carburettor that required nothing by way of expertise from a rider other than to open and close its throttle valve from idling to flat-out seemed to most riders to be an unobtainable ideal, from the beginnings of time, almost until the end of the vintage years. Yet, in reality, just such a utopian device had existed since the late veteran period; only, most motorcyclists would never get the chance to experience it for themselves.

This cure-all was the Binks 3-Jet, from the Church Street works of Charles Binks Ltd in Eccles, Manchester.

We looked at Charles and the impression he made on the trade way back in our first issue and a lasting recall from then is that he was a master self-publicist. He realised that beating the drum was half the battle in convincing the buying public that what they really must do, was to spend every spare penny on a Binks device of one kind or another. His advertising material for the 3-Jet, faithfully followed that belief from its launch immediately prior to the outbreak of the Great War. By that date he had already moved on from single and two jet designs and was busy lambasting his competitors who were slavishly following in his footsteps. viz "It is to be noted that many of our competitors who have previously decried the 2-jet principle as being unnecessary, are now copying it, but I am a year in advance of all others, who are now putting on the market designs that we are now abandoning as obsolete."



Charles had indeed moved on to a third jet, each of the three being opened in turn to give what he claimed to be a continuous and flexible supply of the correct mixture through the full opening range of the throttle. Moreover, he had at the same time eliminated a major fault of the 2- (or more) jet instrument, in that petrol could normally continue to slosh out of the jet that wasn't currently functioning and thus be wasted. Binks lodged a Jet-Damping Patent.

This provided a positive closure for all three jets by means of spring loaded dampers that were raised from the ends of the jets as the throttle valve was opened. The dampers were fitted into the throttle valve itself and pressed downwards onto the tip of each jet by tiny coil springs, with both first and second pilot jets served by their own small choke tubes also formed within the throttle valve. Thus, the proportions of air to petrol and the suction over each jet were all preserved in correct relationship to one another. As the throttle was opened wider the main (or 3rd) jet was uncovered and the choke diameter of the carburettor body came into play. The actual choice of jet sizes varied from engine to engine, though the Binks people obviously supplied an instrument for every application, based upon their own

THE BINKS 3-JET

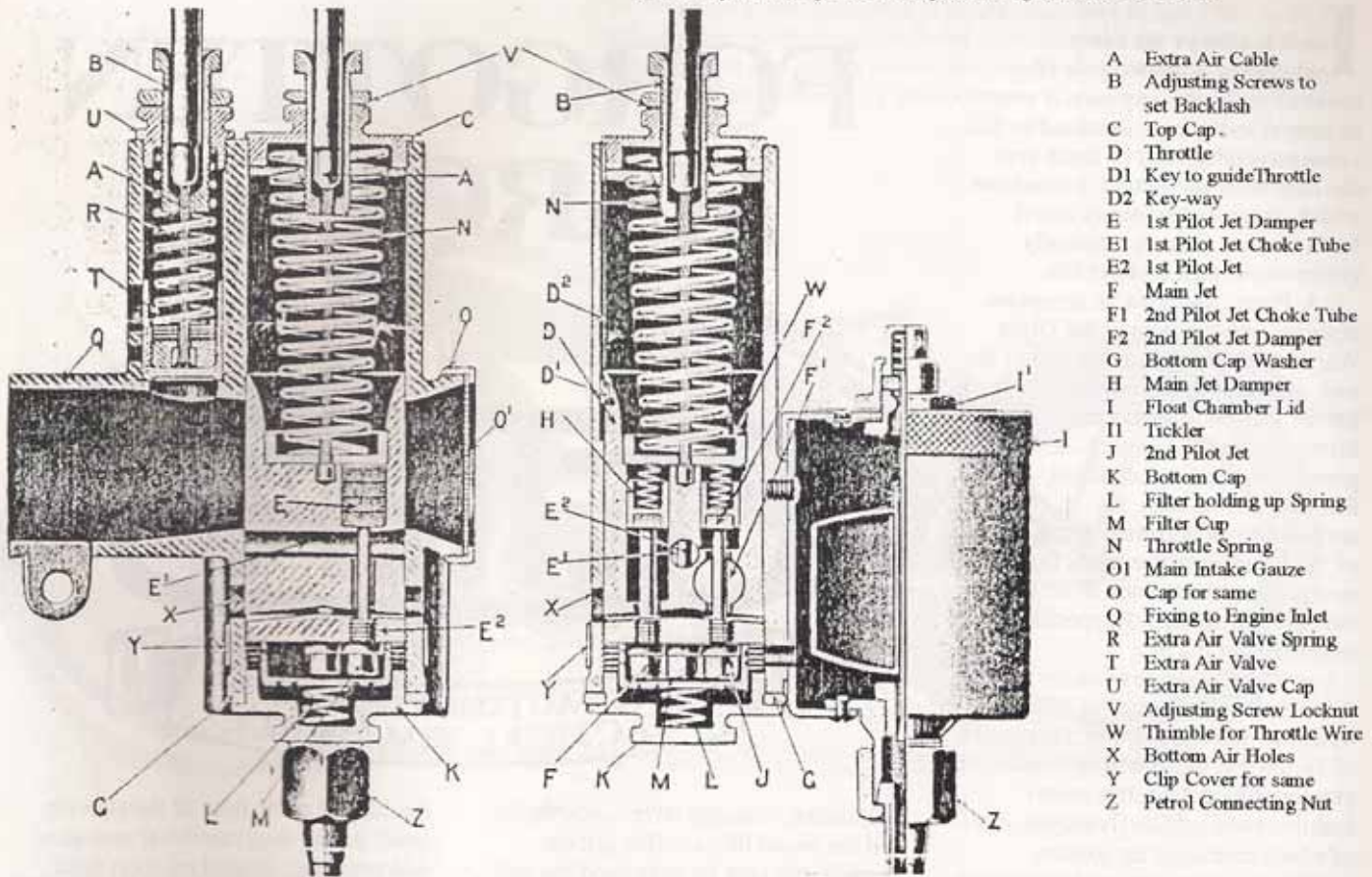
experience in actual tests. To allow for any unexplained variations between seemingly identical engines, six spare jets and a jet key were included with every order.

Not that his provision was meant to suggest to an intending purchaser that he or she was in for a lengthy bout of experimentation on the purchase of a 3-Jet. No, said Charles, it was simply that "Our carburettor is sent out ready to give decent results, but *absolutely perfect* results can be almost at once obtained by the rider in a few miles spin up the road." This was accomplished by means of the six spare jets and a hints & tips leaflet, readily and without dismantling the carb.

Readers spotting that the Binks 3-Jet body included a separate air valve chamber in its construction, might be forgiven for thinking that it wasn't at all the fully automatic instrument that it was cracked up to be. Wrong. The air valve wasn't required for the normal operation of the carb - if it was found that it *had* to be used, then the settings in use were wrong. This valve was there solely to allow the rider to let in clean, cool, air when running downhill with the throttle closed. Binks adding that this scavenged the engine and saved petrol, whilst acting also as an air brake, further economising on the wear of mechanical brake parts.

Flexibility was an intrinsic feature of the 3-Jet, owing to the high velocity obtained across the tip of the 1st pilot jet at low speeds. An engine could be expected to run dead slow, reliably and with even firing, whilst sudden

Cutaway detail of the 1916 pattern of Binks 3-Jet carb.



- A Extra Air Cable
- B Adjusting Screws to set Backlash
- C Top Cap
- D Throttle
- D1 Key to guide Throttle
- D2 Key-way
- E 1st Pilot Jet Damper
- E1 1st Pilot Jet Choke Tube
- E2 1st Pilot Jet
- F Main Jet
- F1 2nd Pilot Jet Choke Tube
- F2 2nd Pilot Jet Damper
- G Bottom Cap Washer
- H Main Jet Damper
- I Float Chamber Lid
- I1 Tickler
- J 2nd Pilot Jet
- K Bottom Cap
- L Filter holding up Spring
- M Filter Cup
- N Throttle Spring
- O1 Main Intake Gauze
- O Cap for same
- Q Fixing to Engine Inlet
- R Extra Air Valve Spring
- T Extra Air Valve
- U Extra Air Valve Cap
- V Adjusting Screw Locknut
- W Thimble for Throttle Wire
- X Bottom Air Holes
- Y Clip Cover for same
- Z Petrol Connecting Nut

opening of the throttle lever would result in sudden and violent acceleration as the progressive nature of the instrument was fully explored. Two-strokes benefited too, especially in running slowly on the road with an absence of 4-stroking.

So, if it was such a good instrument, why wasn't the 3-Jet fitted to every machine on the market? Charles had a great deal to say in this matter, as you might imagine.

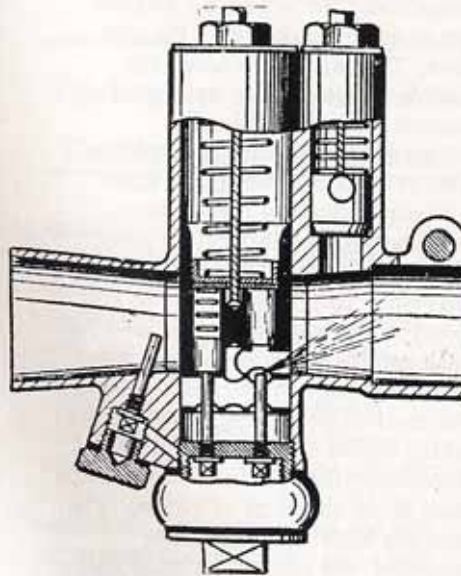
Firstly, the catalogue statement that it was "Not in competition on price with Birmingham goods." tells us quite a lot. The other big carburettor makers were situated in the Midlands - Amac and Brown & Barlow principally - and they were evidently selling at lower prices. An extra 15/- (75p) said Binks was probably the premium required for a 3-Jet to be specified on a new machine. But what was that, he countered, on a motorcycle costing £50. It was up to the purchaser of a new machine to insist on getting a 3-Jet and if the supplier refused, then, CB advised, you should tell them to sell you the

bike less the carb and its cost, and we will sell you a 3-Jet direct! He could do this in confidence, apparently, because "Some makers, while freely admitting its superiority, object to using them, solely on account of the extra cost..." The performance quality

of a 3-Jet was therefore not in doubt, only its first cost could be criticised.

During its production period of fourteen years or so, there were a number of changes in its construction. Early examples had the 1st pilot jet damped by a pack of tiny leather washers in lieu of a coil spring and in 1923 a bolt-on light alloy float chamber replaced the previous composite mixing and float chamber design and at the same time introduced a choice of top or bottom feeds for the float chamber. Then, in 1925, came a fairly radical departure in that the main jet - or Big Power Jet as it was then termed - was moved out from under its damper and positioned, naked, within the inlet tract of the body.

The Binks company remained welded to the concept of multiple jets for automatic operation and eschewed any thoughts of tapered needles - "...this in my opinion is bad, as the adjustment of the needle is impossible, and rubs on the jet, making the hole larger" - up until their amalgamation with Amac and B&B in 1928. □



In the 1925 3-Jet the main jet was moved into the inlet tract of the body.