The cylinder block

On the full-size engines the compound cylinders were located within a single cast-iron block. The bores were 6-3/4in. for the high-pressure cylinder and 11-½ in. for the low-pressure cylinder.
"D" type slide valves operated within individual steam chests positioned above the bores. Valve faces were slightly inset in order to provide better alignment with the valve-gear. In addition the valve port-faces were inclined in the fore-and-aft direction to line up with the crankshaft. All in all, rather complicated arrangements for the model engineer. All these features however, were distinctive to the Fowler B6`s and have been carefully reproduced on the model.

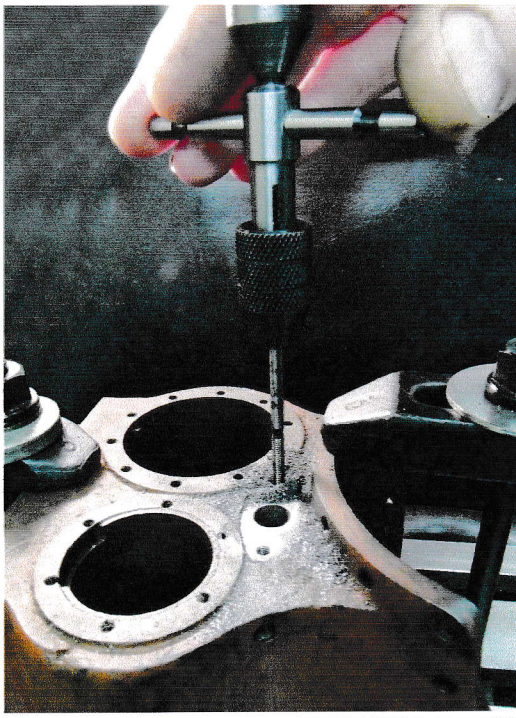
The cast-iron cylinder block carries a bore of 1 3/8 in. for the high-pressure piston and 2 in. for the low.

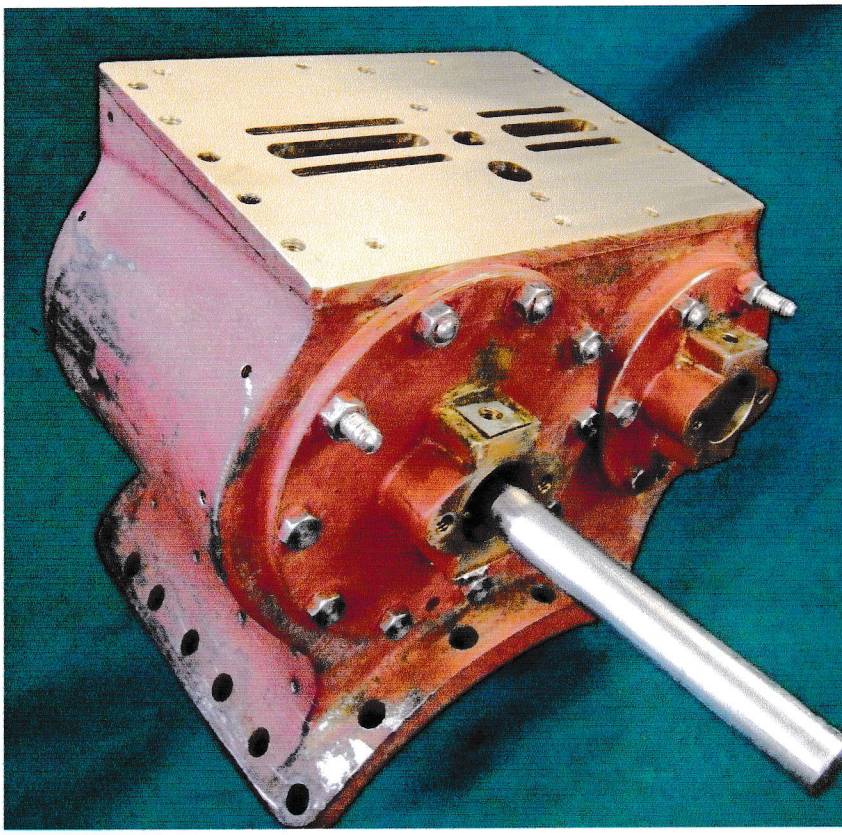
The valve port-faces have been machined into a flat piece of gunmetal, which sits between the cylinder-block and the casting of the steam chests.
Under the normal compounding arrangement of the steam, the exhaust from the H.P. cylinder is passed into the steam chest of the L.P. cylinder. To help start the engine however, the latter arrangement may be overruled by the operation of the auxiliary or simpling valve, which allows the admission of H.P. steam to both cylinders. This is achieved by means of an internal passage within the rear wall of the steam chest casting.

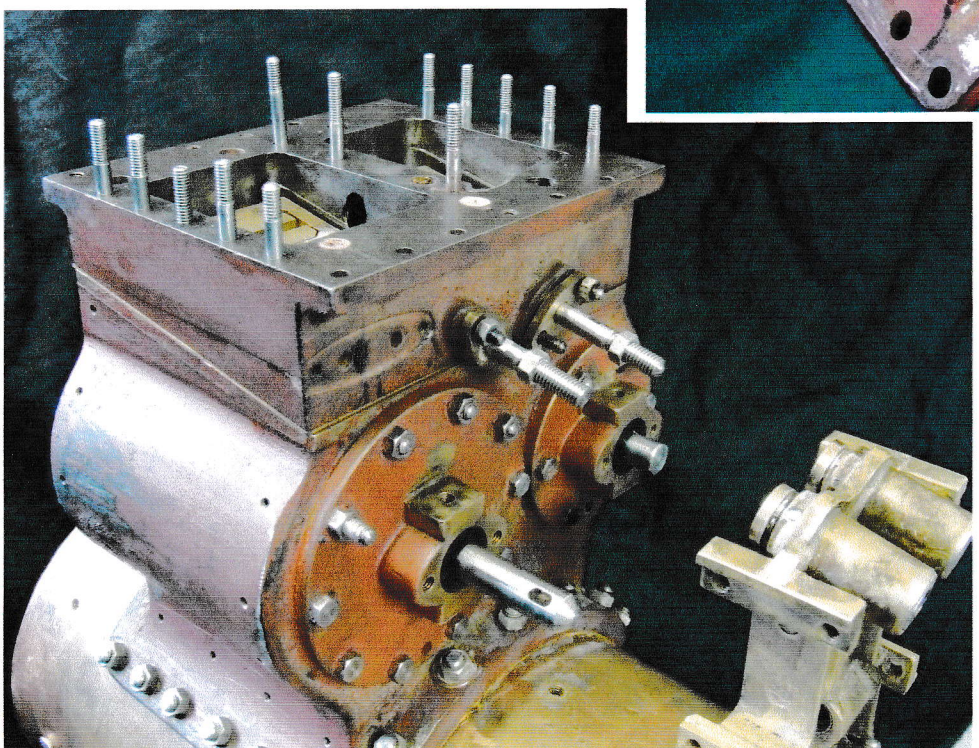
The picture (right) shows the cylinder block being tapped for studs that will eventually secure the exhaust exit pipe.

The picture (below) gives a clear view of the gunmetal port face. This is a separate component from the cylinder block and is secured by being sandwiched between the cylinder block and the steam chests. Slide valves and buckles would also be produce from gunmetal whilst the valve spindles would be of stainless-steel.

The cylinder head is cast iron and has internal passages connecting the chambers of the steam regulator with that of the governor.







The picture (left) shows the cylinder block and steam chests. Twenty-four studs and nuts (2 B.A.) secure the block to the boiler top.
The position of the simpling valve is also shown by the vacant holes on the outside wall of the steam chest.
Another distinctive feature of the B 6`s was the combined motion-plate and valve-spindle guides; this is shown mounted on the boiler top. Aligning the motion-plate proved to be one of the more demanding procedures, as any adjustment of the valve-guides would invariably affect the alignment of the crosshead slide-bars. After completing the procedure, my only thought was to avoid disturbance at all costs.