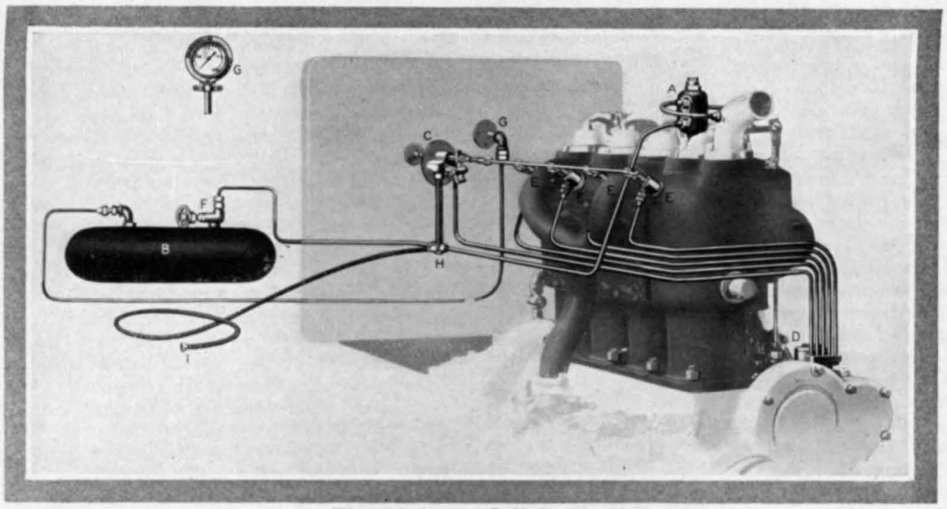
New Chalmers Self-Starter.

Compressed Air to Do the Cranking in Starting the Motor. A Tire Inflator, Too, and Some Other New Things as Well.

PERHAPS the most distinctive feature of the Chalmers "Thirty-Six," the 1912 product of the Chalmers Motor Company, of Detroit, Mich., is the air pressure self-starting device with which all types are equipped and of which we show a diagrammatic illustration on this page. This starter is a product of the Chalmers Company and is fitted to the car as an integral part of the power-plant, not as an accessory.

A check valve in the head of cylinder No. 1 stores air under pressure in a tank carried in the body of the car. A dash valve releases air from this tank when it is desired to start the motor and this air is carried to a distributor operating upon the same principle as the commutator used on cars having a double ignition system. By means of this distributor the compressed air is sent into the cylinders which are ready for the working stroke, in their order of firing. In this way the motor is operated by compressed air instead of by cranking until sufficient mixture is drawn in by the downward moving pistons to make the ignition effective.



The Chalmers Self-Starter.

A, pressure check valve; B, tank for compressed air; C, dash control; D, distributor; EEEE, compressed air inlets to cylinders; F, shut-off valve; G, pressure gauge on dash; H, I, connection for inflating tires.

Under one condition only will the Chalmers self-starter fail to work, and that is when the motor is on dead center, a condition which seldom exists in a ball bearing motor. In such a case, however, it is necessary only to turn the motor over an inch or two and let the self-starter do the rest.

In connection with the self-starting device is a tire inflator which, combined with the Continental demountable rims, fitted to the wheel, should reduce "tire troubles" to a minimum. Another feature is a new piston ring, said to eliminate smoking.

The White Long Stroke Motor.

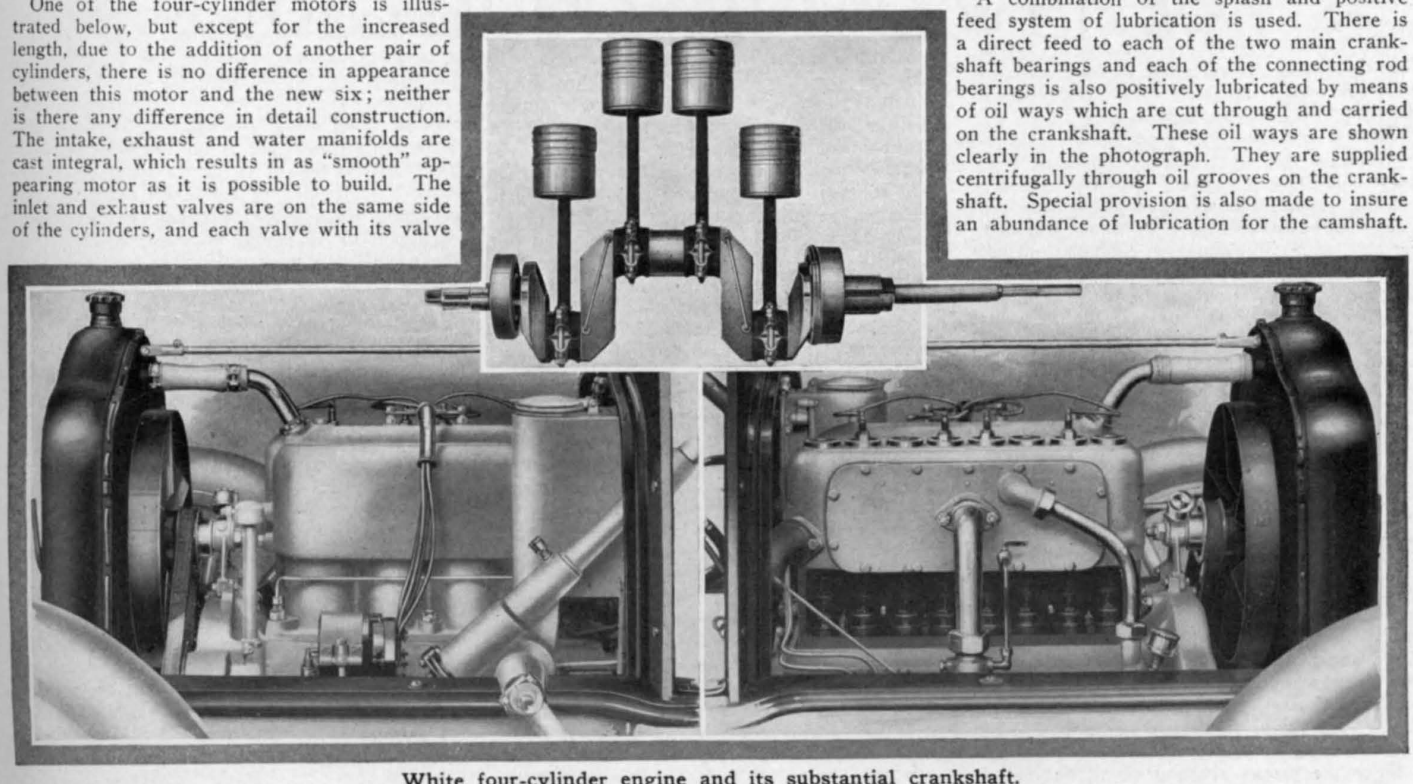
A Six Cylinder Model Added to the Line of "Fours" for Nineteen Twelve. Made Like the "Fours" With Long Stroke and En Bloc Cylinders.

THE White Company has added a six-cylinder model to its line for 1912. The motor of this car, as those of the four-cylinder models always have been, is of the long stroke type which the company has found to be most economical. Also following the practice which was used in making "fours" the cylinders of the six will be cast en bloc.

One of the four-cylinder motors is illustrated below, but except for the increased length, due to the addition of another pair of cylinders, there is no difference in appearance between this motor and the new six; neither is there any difference in detail construction. The intake, exhaust and water manifolds are cast integral, which results in as "smooth" appearing motor as it is possible to build. The inlet and exhaust valves are on the same side of the cylinders, and each valve with its valve stem is a one-piece forging made of special nickel steel of such a nature as to prevent distortion by heat. The valve lifters have fiber seats, thus reducing noise to a minimum and preventing the ingress of grit and sand. The valve springs and stems are set in a chamber, located in the cylinder casting and are protected by a detachable plate.

The crankcase is made in two sections of special aluminum alloy, and the upper portion which carries the bearings is hung by three-point suspension from the main frame. The crankshaft is forged from chrome nickel steel and, as will be seen by the illustration, is exceptionally heavy and has but two main bearings which are of the annular ball type.

A combination of the splash and positive feed system of lubrication is used. There is a direct feed to each of the two main crankshaft bearings and each of the connecting rod bearings is also positively lubricated by means of oil ways which are cut through and carried on the crankshaft. These oil ways are shown clearly in the photograph. They are supplied centrifugally through oil grooves on the crankshaft. Special provision is also made to insure an abundance of lubrication for the camshaft.



White four-cylinder engine and its substantial crankshaft.