

The motor and change gear are supported from the frame, and there is no sub-frame, as in the roadster. The pivots are cross connected at the rear of the axle, as the frame in this model does not offer any protection to the cross connection. Painting and upholstery are said to equal those on the highest priced cars.

The Craig-Toledo Touring Car.

The Craig-Toledo Motor Works, successors to the Maumee Motor Car Works, of Toledo, Ohio, have recently completed the construction of a high powered touring runabout of partly conventional, partly original design, of which the following are the specifications:

Body, aluminum; seating capacity, three; weight, 2,550 pounds; wheel base, 112 inches; tread, 56½ inches; tires, 36x3½ inches front, 36x4 inches rear; steering, nut and

bell crank; brakes, double set on both rear hubs; springs, semi-elliptic front, full elliptic rear; frame, chrome nickel steel; horse power, 40; bore, 4¾ inches; stroke, 2 inches; cylinders, four vertical, in pairs; valve arrangement, same side, mechanically operated; motor suspension, three point bearing; cooling, water, honeycomb radiator; ignition, jump spark; current supply, magneto and battery; carburetor, automatic; lubrication, wholly automatic, no external oil feeds; motor control, spark and throttle, accelerator pedal; clutch, multiple disc in oil; change gear, sliding type; speeds, three forward and reverse; change gear control, progressive type; drive, shaft, direct alignment without Cardan joints.

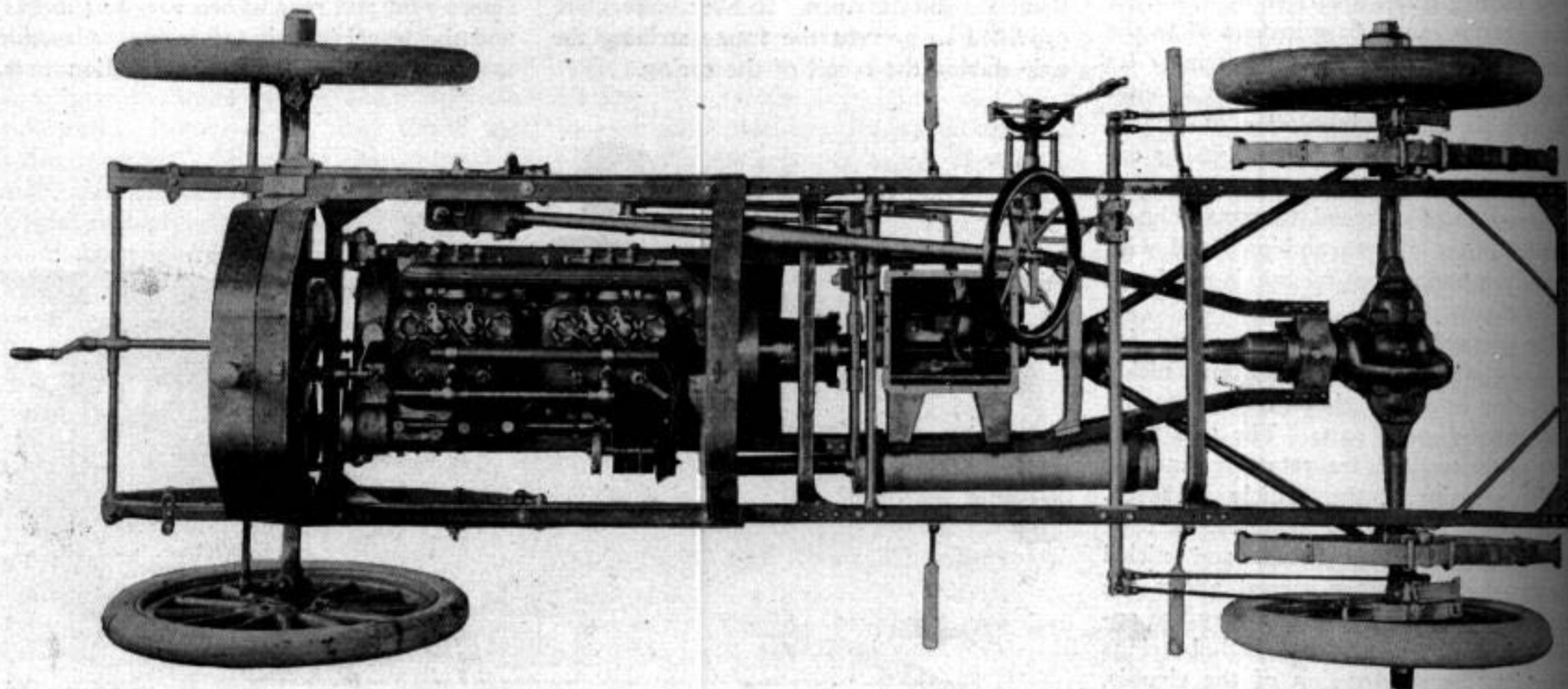
MOTOR.

The motor has four cycle water cooled cylinders cast in pairs, 4¾ by 5 inches. The crank shaft is offset 1¼ inches, which

reduces the side thrust during the power stroke. The integral cam shaft and cams are enclosed in a compartment open to the crank box, and all gears are enclosed in the crank box casing and open to the splash. The crank shaft is drop forged, turned and finished by grinding, and its journals are 1⅞ inches in diameter. They are exceptionally long, and run in Parsons white bronze half boxes. The gearing is all spur and plain bevel, steel meshing with bronze, and is housed in an aluminum case integral with the motor base.

The carburetor is of the float feed type and automatic. The main gasoline tank has a capacity of 20 gallons, and is placed under the front seats. The gasoline is fed from this tank by gravity. The tank is made of copper and contains an auxiliary compartment holding 3 gallons, and also a hand pressure pump for emergency.

The water cooling system has a capa-



PLAN OF CRAIG-TOLEDO CHASSIS.

city of 8 gallons. The radiator is built sectionally of square tubes, being of the honeycomb type, with a large tank in the top. The water is circulated by a centrifugal pump. A large radiator fan is mounted on the motor, in addition to the auxiliary fan flywheel.

The Eisemann high tension magneto (oscillating type) is used, with a supplementary storage battery, which may be thrown into the circuit by means of a switch on the dash. This double system provides for emergencies.

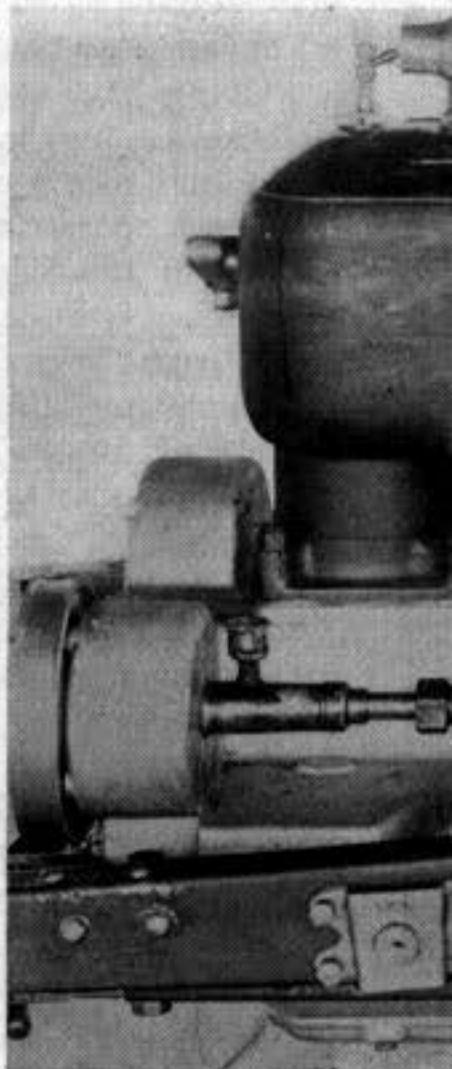
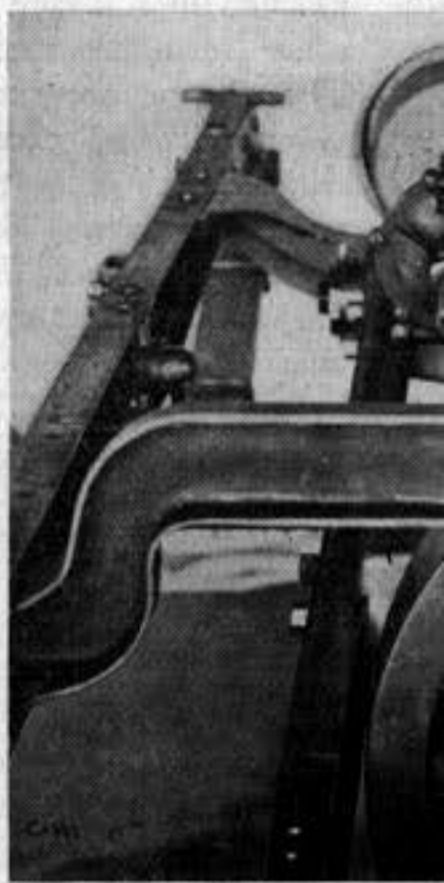
The lubrication is by splash, the oil level in the crank chamber being maintained by a geared oil pump and overflow pipe. Oil from the force feed goes first through the crank shaft boxes and then into five separate oil pits, which have each an independent overflow to a return oil way, which inclines toward and floods the oil pump. This system of lubrication is automatic, having no outside feeds, and is claimed to require no attention save cleaning of a wire gauze monthly.

TRANSMISSION.

The clutch is of the multiple disc type, alternating discs being of steel and brass, and all being housed and running in oil. The clutch casing and shaft are of manganese bronze. The discs are grooved and ground to fit, and are claimed to have a remarkable gripping power. The clutch has Hess-Bright ball bearings to take up end thrust.

The transmission gives three speeds forward and a reverse, with direct drive on the high speed. The progressive system is used. All bearings are Hess-Bright ball bearings enclosed in oil tight cases, and the gears are made of chrome-nickel steel. The transmission is equipped with a simple automatic device which is released by the clutch pedal.

The entire power plant is mounted on a sub-frame, which



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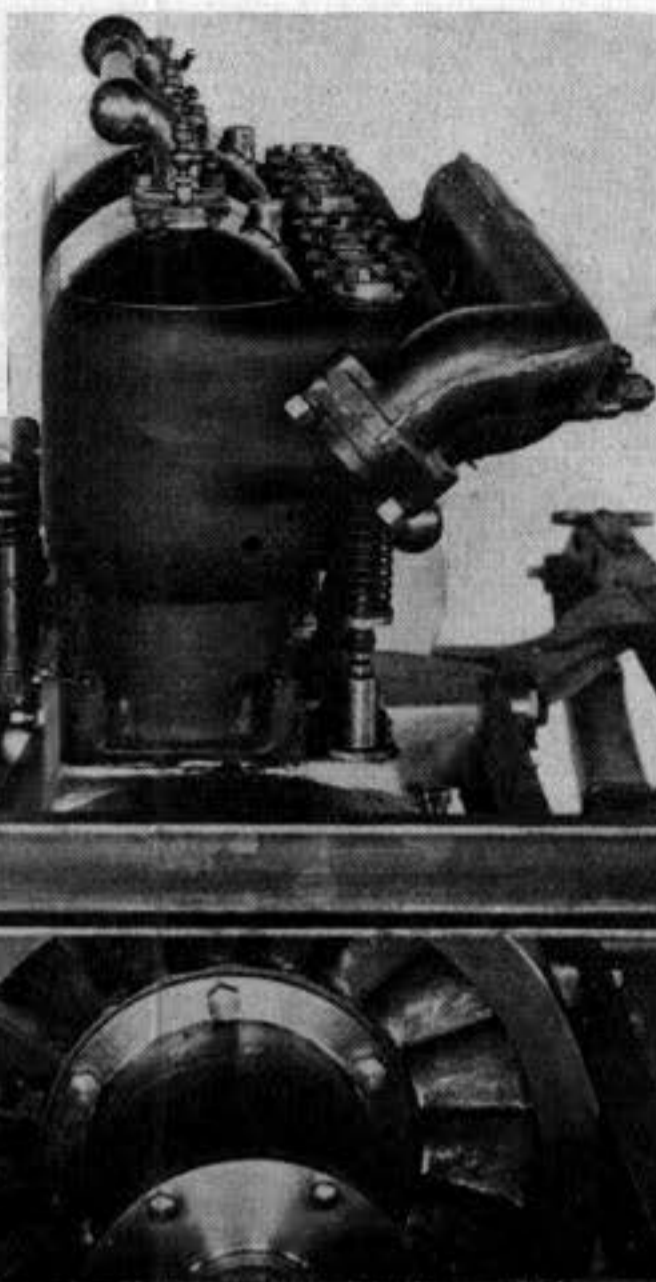
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FRONT VIEW OF CRAIG-TOLEDO ENGINE.

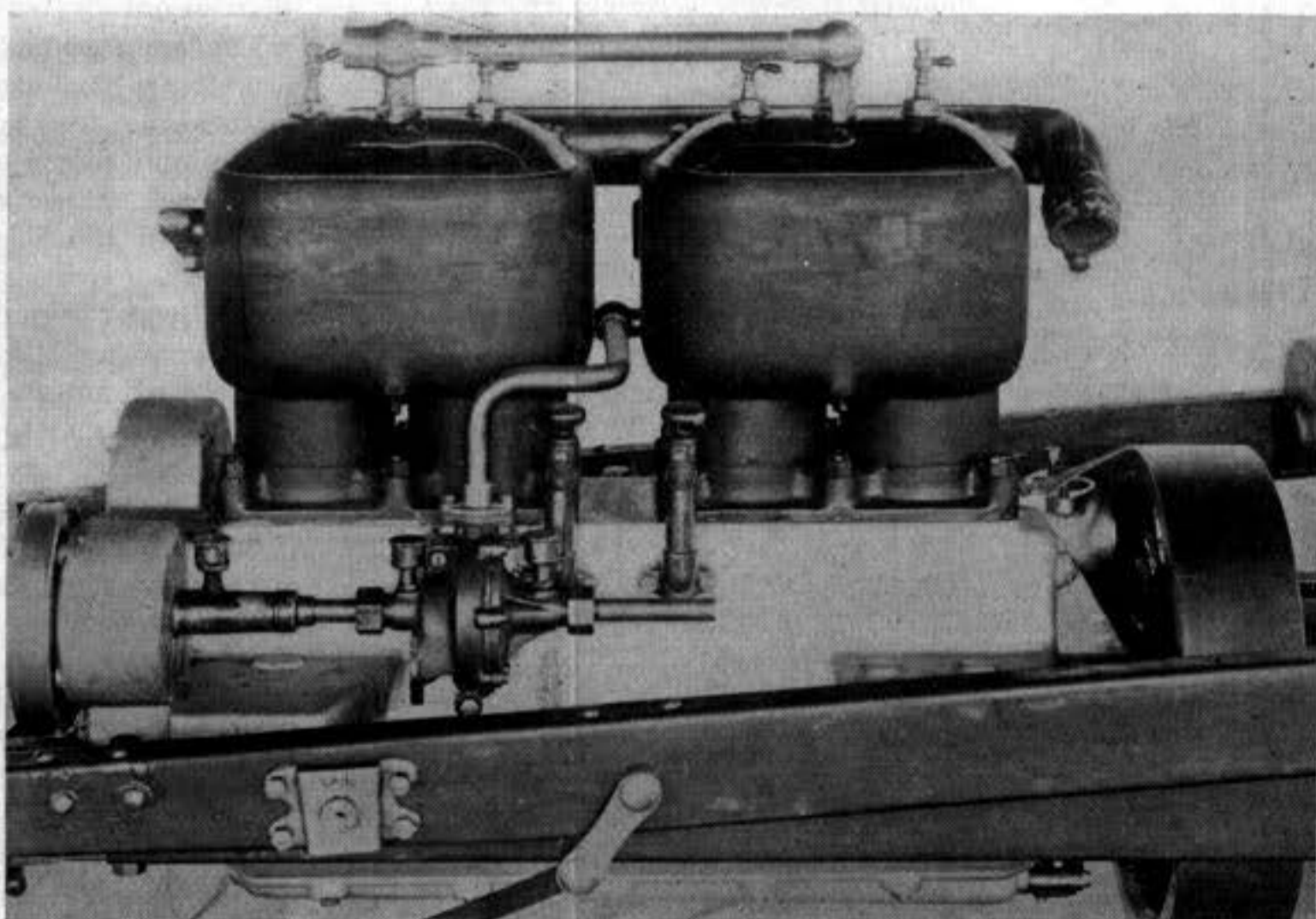
bears on the centre of the rear axle, and hangs from two bearings on the front cross member, making a three point suspension. The motor is mounted in direct alignment with the shaft, and power is transmitted without the use of Cardan joints.

The emergency brakes are of the external contracting type and act on the rear hubs, being operated by a hand lever. The internal expanding brakes are operated by a foot pedal. The brake bands are large and wide, and the brakes are correspondingly powerful.

The body is of a and is said to have city, in spite of the tank occupies space The rear or chauffeur a flat deck, 9½ inches beneath which are which pull out from with lock and key. on the main frame,

they are producing 2,000 pounds and have of 1 ton. The motor four cylinder air cooled tudinally directly under driver's seat. This mizes space and insu working parts. The same as used in the cars and needs no sp

The transmission is proof aluminum case gear type.



SIDE VIEW OF CRAIG-TOLEDO ENGINE.

The body is of aluminum construction, and is said to have large storage capacity, in spite of the fact that the gasoline tank occupies space under the front seats. The rear or chauffeur's seat is mounted on a flat deck, $9\frac{1}{2}$ inches above the main frame, beneath which are two large drawers, which pull out from behind and are fitted with lock and key. The body is mounted on the main frame, and is entirely independent of the power plant.

Franklin Motor