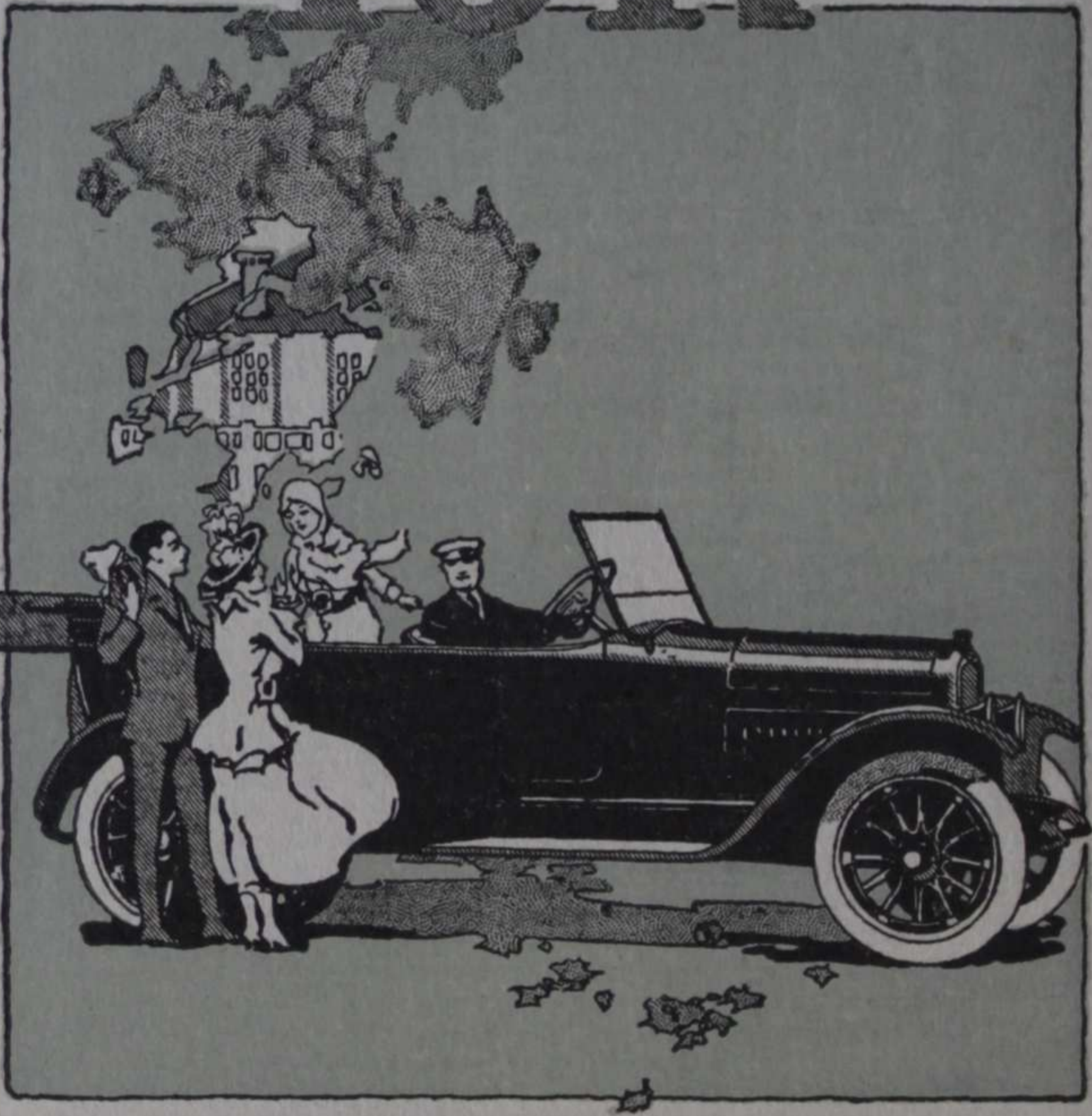


1917

MARION-HANDLEY
THE SIX PRE-EMINENT

1916
1917





IN presenting our product for the season of 1917 we experience that peculiar thrill which always follows the doing of some one thing well.

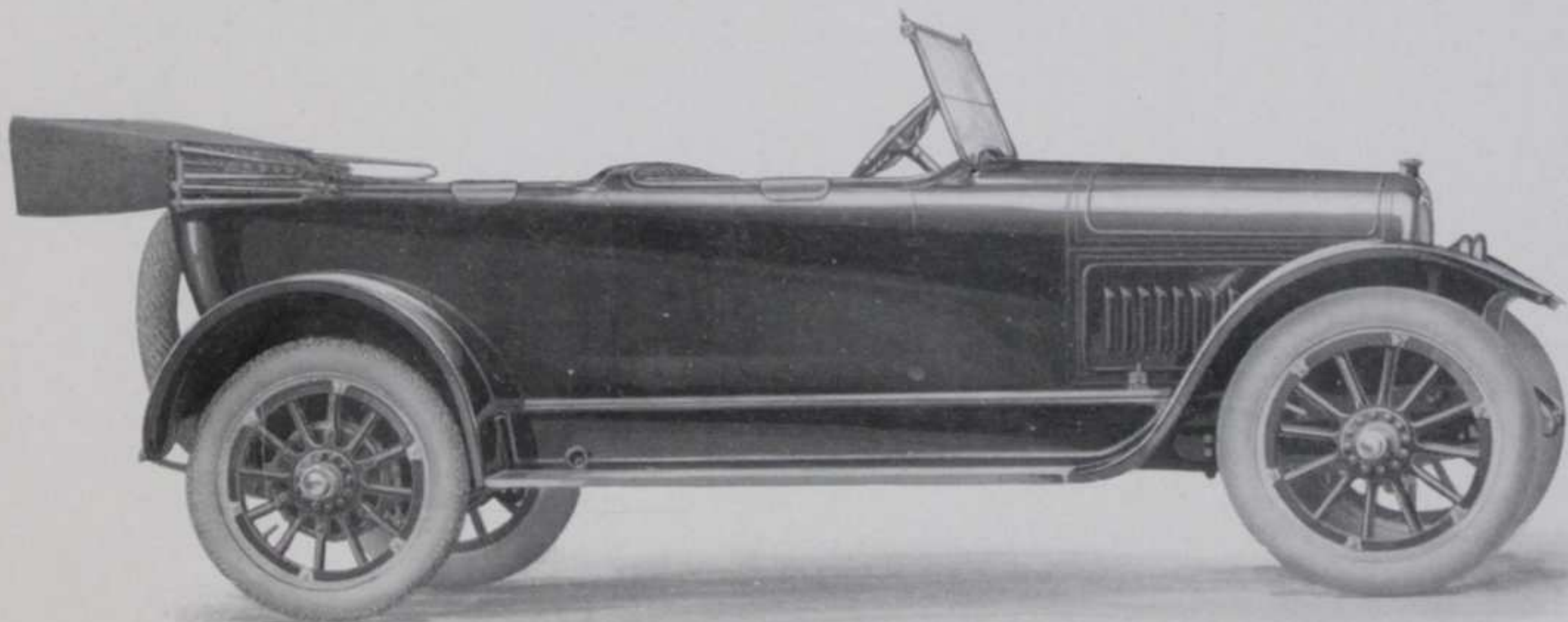
"Pride of accomplishment," 'tis said, "is the mainspring of human endeavor," and we frankly confess it to be the driving force in our shop.

The pleasing result in this instance is a remarkable "Six" in two sizes—pre-eminent in appearance, staunchness, and lightness. *A hand-made piece of art;* carrying 100 per cent of actual value plus an abundance of tone, style, and little niceties which discriminating motorists like.

Therefore, this presentation is made with pardonable pride and complete confidence.

Every "Marion-Handley" Six is "*a first-water gem,*" and carries to its ultimate owner that pleasing sensation experienced only through the ownership and use of something more than a mere vehicle of conveyance.

J. S. Handley
President, The Mutual Motors Co.



1917 Marion-Handley "Six-60" (7-Passenger Touring), \$1575 at Jackson, Mich.

125-inch wheelbase; $3\frac{1}{2} \times 5\frac{1}{4}$ six cylinder Continental motor; $35 \times 4\frac{1}{2}$ -inch tires, non-skid on rear wheels; Westinghouse electrical equipment; vacuum feed to carburetor; Collins curtains, Chase leather top, real long grain bright finish leather. Marshall patent cushions. A big, handsome, luxurious car of individuality and personality, finished in dark olive green with gold striping.

Wire Wheels \$100 extra.

YOU'LL like the new "boat" design of body, the gracefully rounded lines and elegant finish, the unusual roominess and comfort of this Six-60, the new "Six-Pre-eminent." It is different—decidedly different. From radiator to tail lamp it is a car of unusual features.

Every inch of the body is filled, rubbed and finished by hand, twenty distinct coats of paint, filler and varnish being used. Even the chassis receives nine coats.

The body is painted a dark olive green, striped with gold, which harmonizes beautifully with the black fenders.

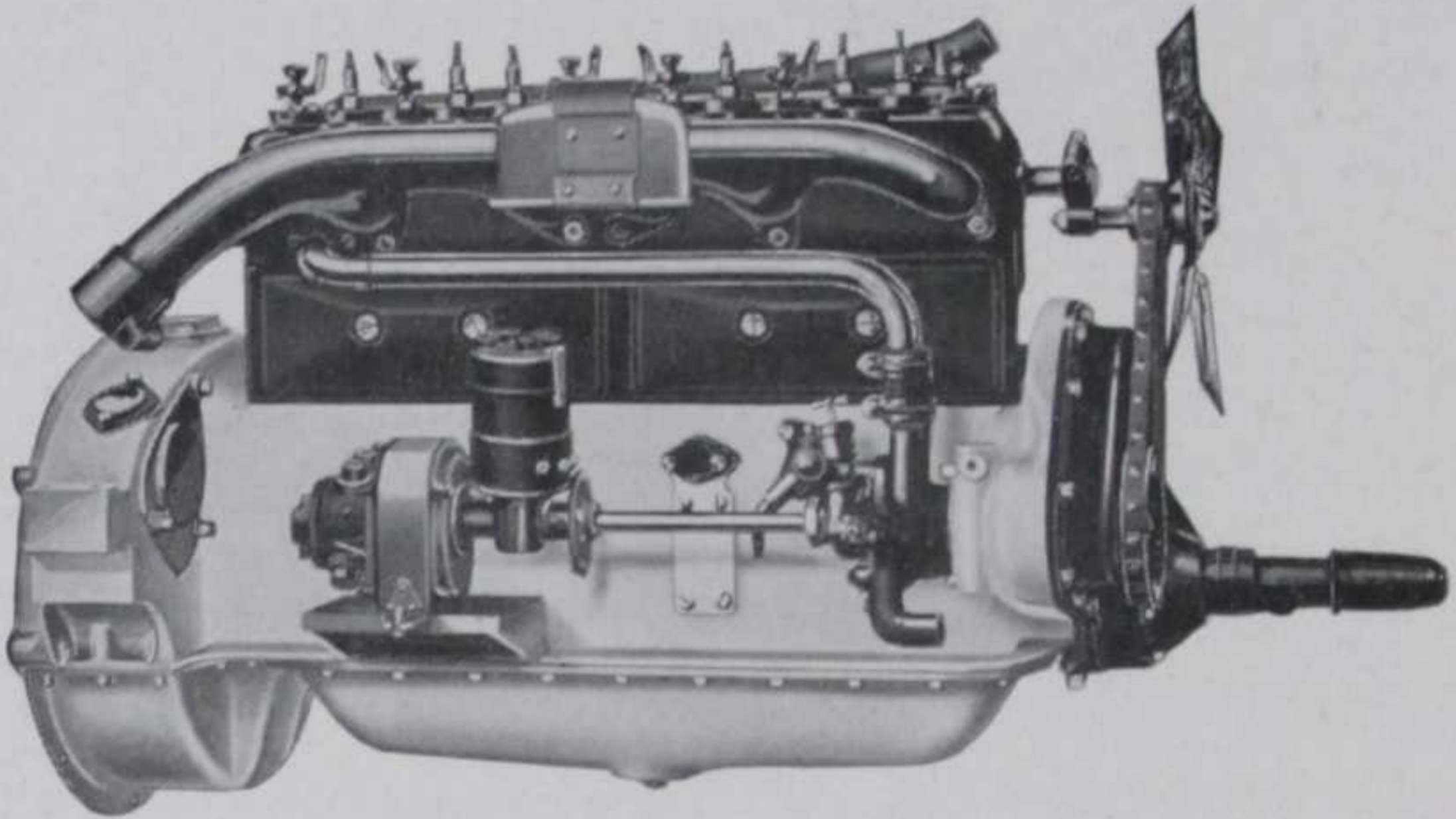
Extraordinarily pleasing to look upon, its beauty is but the outward and visible evidence of the absolute dependability and sturdiness of the mechanical construction.

The feature upon which the greatest skill has been expended and which has produced the most gratifying results is the big sixty-horse-power, six-cylinder motor.

This wonderful power plant—a product of the famous Continental factories—puts a world of action into this new Marion-Handley beauty. She'll crawl along on high at two miles an hour or she'll whiz through if you put her to it.

But on high or low, up hill or down, through sand and mud or on the smooth straightway, she'll answer promptly to every demand. It is extremely satisfying, this wonderful flexibility, this tremendous power.

There's a class of motorists in every town to whom this car makes an irresistible appeal—big men who want a car that denotes the position they hold in the community, a car that is expressive of their own individuality and personality.



Right side of "Six-60" motor, showing enclosed valves, water circulating pump, and Westinghouse generator and ignition unit.

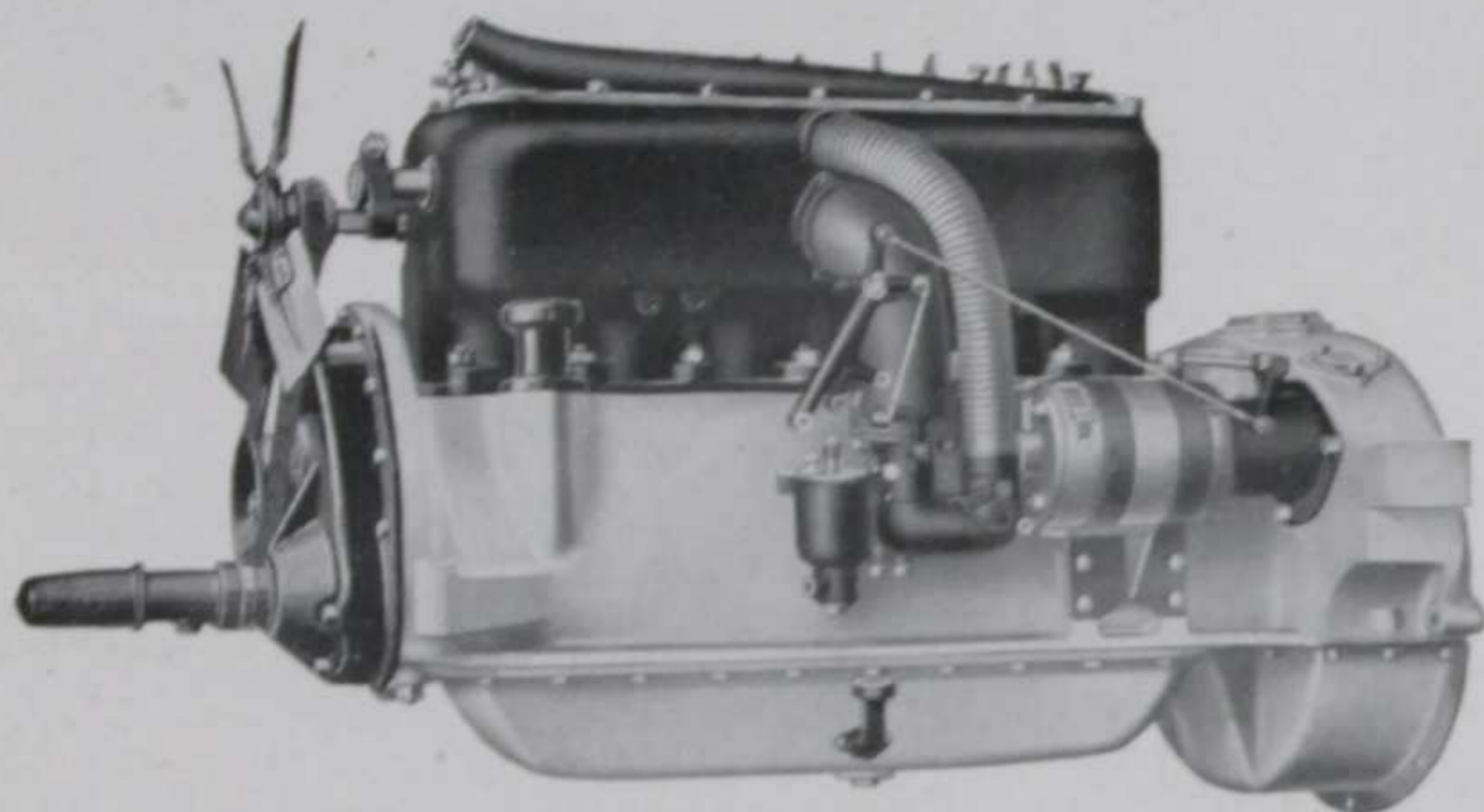
Light weight, an abundance of power, and sturdy construction is the key note of the design of the Marion-Handley "Six-60," with, of course, the resulting benefits in the way of economical operation, and at all times that careful attention to detail and superb finish that has always characterized the product of the Mutual Motors Company.

The weight, 3,000 pounds, is less than 100 pounds per horse power, rating the motor under the S. A. E. formula, while the actual weight per horse power developed on the road, at good touring speeds, is but 58 pounds.

But this unusually light weight is not accomplished by sacrifice in strength but rather by careful design and proper distribution and selection of the highest grade materials.

Beginning with the weight-saving, but strength-increasing construction of the frames, we have an unusually rigid and solidly constructed frame, built with vertical section of $5\frac{1}{2}$ inches and $2\frac{1}{2}$ -inch horizontal section, made of $\frac{5}{32}$ -inch carbon stock.

But we have gone further than simply increasing the strength of the side members, and have tied these members rigidly together at the extreme front and rear end, so as to eliminate side sway and whip of the ends of the frame, by using a front cross member of the inverted channel type $4\frac{1}{2}$ inches in width and have joined this cross member to the side rails



Left side of "Six-60" motor showing carburetor, and the powerful Westinghouse starting motor geared to fly wheel by the automatic inertia pinion shift.

with large gusset plates, giving a broad union. The rear cross member is tubular, $1\frac{7}{8}$ inches in diameter and placed at the extreme rear end of the frame.

Further rigidity and elimination of the fore and aft movement of the side rails is secured by a middle cross member which is 7 inches in width and is joined to the side rails by large gusset plates, increasing the strengthening union with the side rails to $13\frac{1}{2}$ inches.

The frame construction at the rear is of the very latest design being arched over the rear axle, while the gasoline tank is carried at the rear of the frame, supported on the rear tubular cross member, and this cross member also carries the extra-tire rack. The length of the "kick up" has been reduced to the minimum with the result that the tonneau has not been cut up by large sill projections in front of the rear seat.

SPRINGS — The rear springs are semi-elliptic, 57 inches in length and 2 inches wide, and underslung from the rear axle — the acme of comfort and the very latest tendency in spring construction.

The front springs are 38 inches long and 2 inches wide, made of the very highest grade steel, with bronzed bushed eyes and spring bolts hardened and ground, and provided with large grease cups.

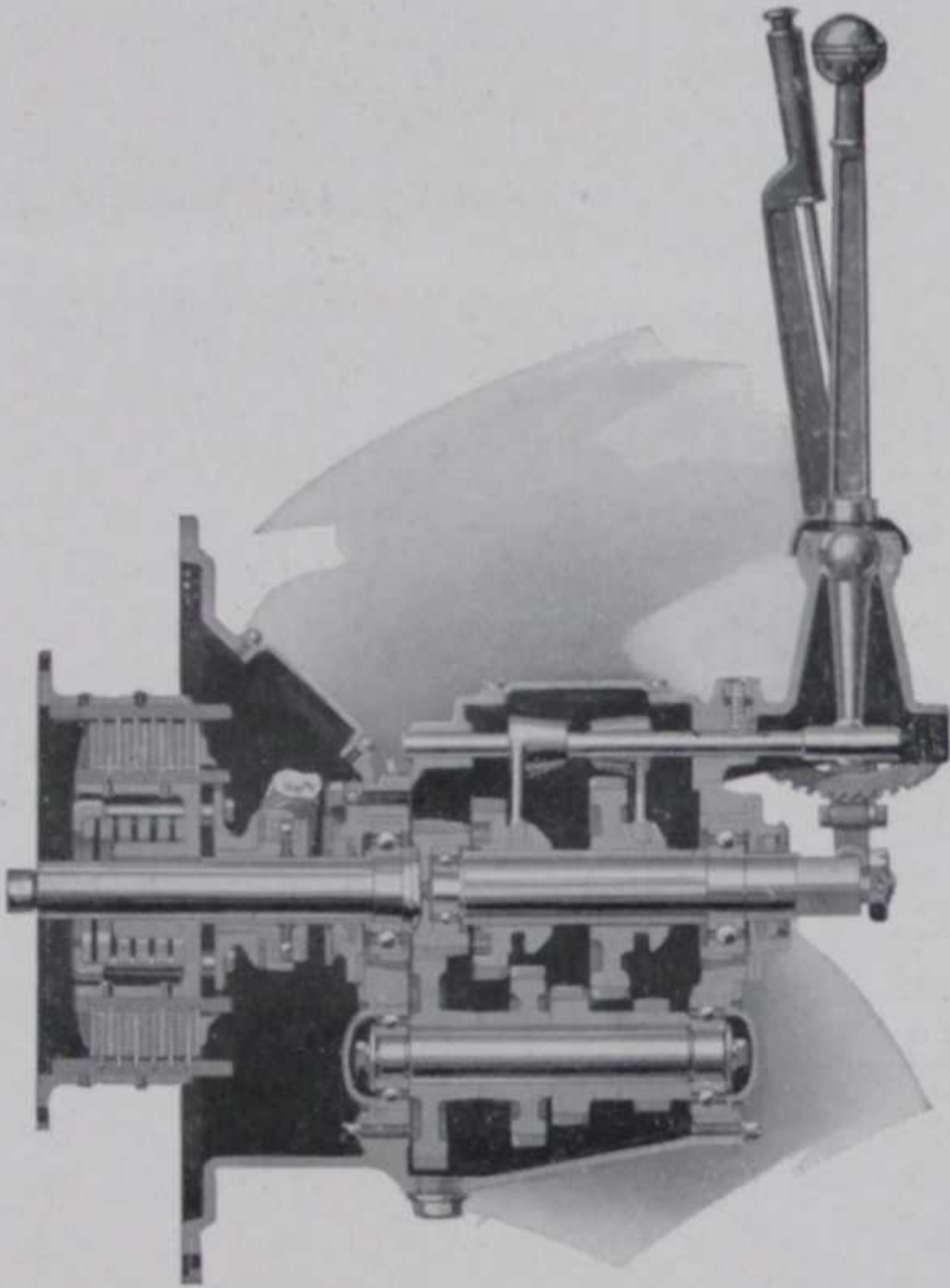


1917 Marion-Handley "Six-60" Touring-Roadster, \$1575 at Jackson, Mich.

Built on the same chassis as the "Six-60" touring car, this four-passenger-touring roadster is the very last word in comfort and convenience, — it combines all the desirable features of a roomy roadster with the qualities of a touring car.

Finished in light "Marion-Handley" brown with black fenders and chassis.

Wire Wheels \$100 extra.



Cross section of clutch and transmission of the "Six-60".

MOTOR — The motor is designed to meet a definite demand for a motor of high power — combining durability and general serviceability with silence and economy.

It is an "L" head, 6-cylinder, cast *en bloc* design with enclosed valve mechanism.

The bore is $3\frac{1}{2}$ inches and stroke is $5\frac{1}{4}$ inches with a displacement of approximately 300 cubic inches and is rated at 29.4 H. P. under the S. A. E. rating but actually develops 50 H. P. at approximately 1900 R. P. M.

The cylinders are cast from a special grade of reverberatory air furnace iron. After being rough bored, they are set aside for aging, which eliminates distortion due to relieving strains in the casting at time of machining. A rigid test under water pressure is given each

cylinder before and after it is machined. It is then finished, bored and carefully ground and then brought to the mirror finish by a lapping process accomplished by a special machine developed for the purpose, and to standard size. The water jacket heads are cast separately, being retained by steel studs and can be easily removed. This construction permits greater uniformity in the cylinder bore and insures a better casting.

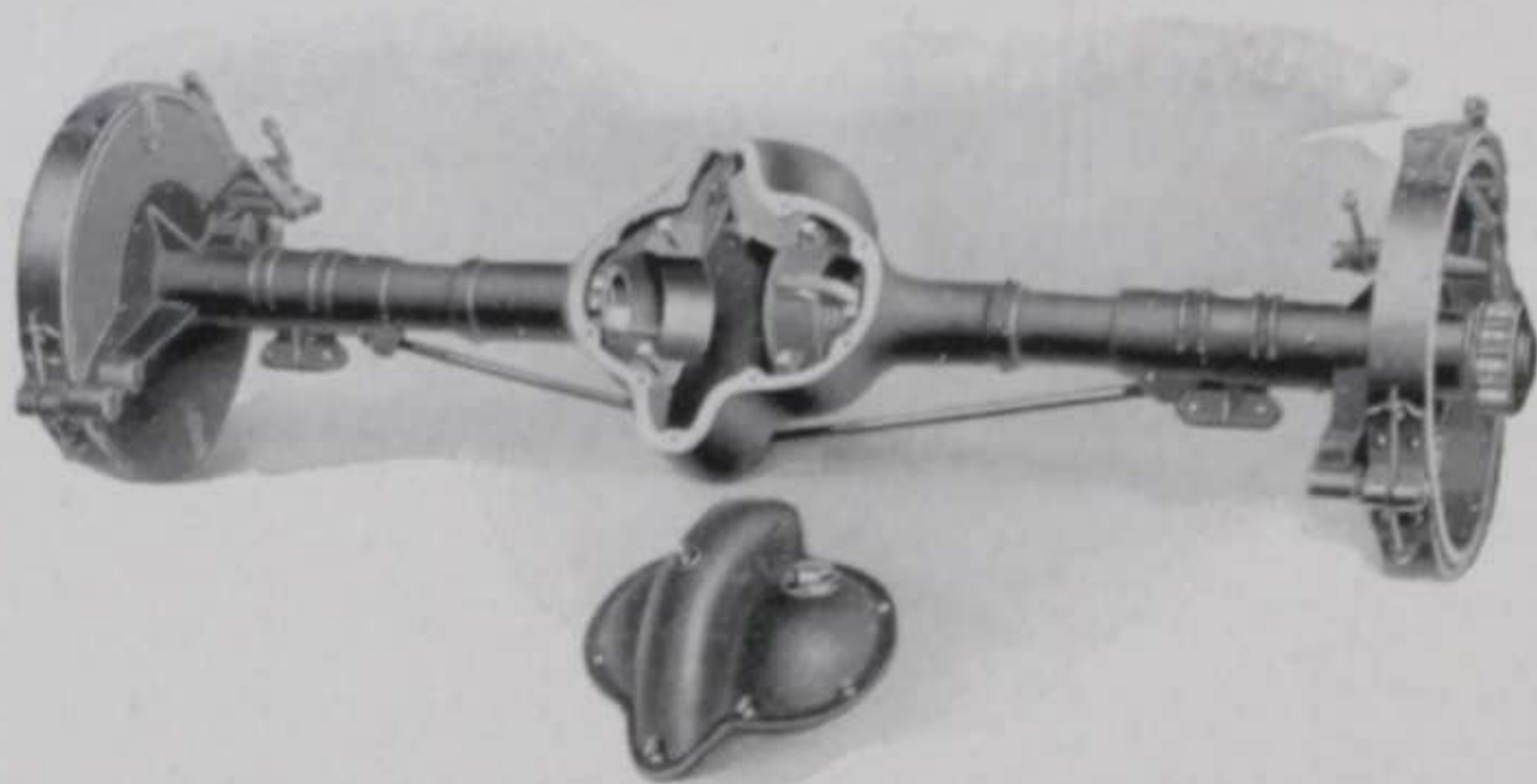
The crank case is an aluminum casting, and the oil pan, which is separate from the crank case, is pressed steel. All bearings are carried in the crank case, and are easily accessible by removing the oil pan.

The enclosed valves are $1\frac{11}{16}$ inches in diameter with a $\frac{5}{16}$ -inch lift, and are operated by a single cam shaft. Inlet and exhaust valves are interchangeable and have nickel heads electrically welded to carbon stems, seats and stems being accurately ground to size. The ends of all the valves stems are hardened to insure against wear from the tappet action.

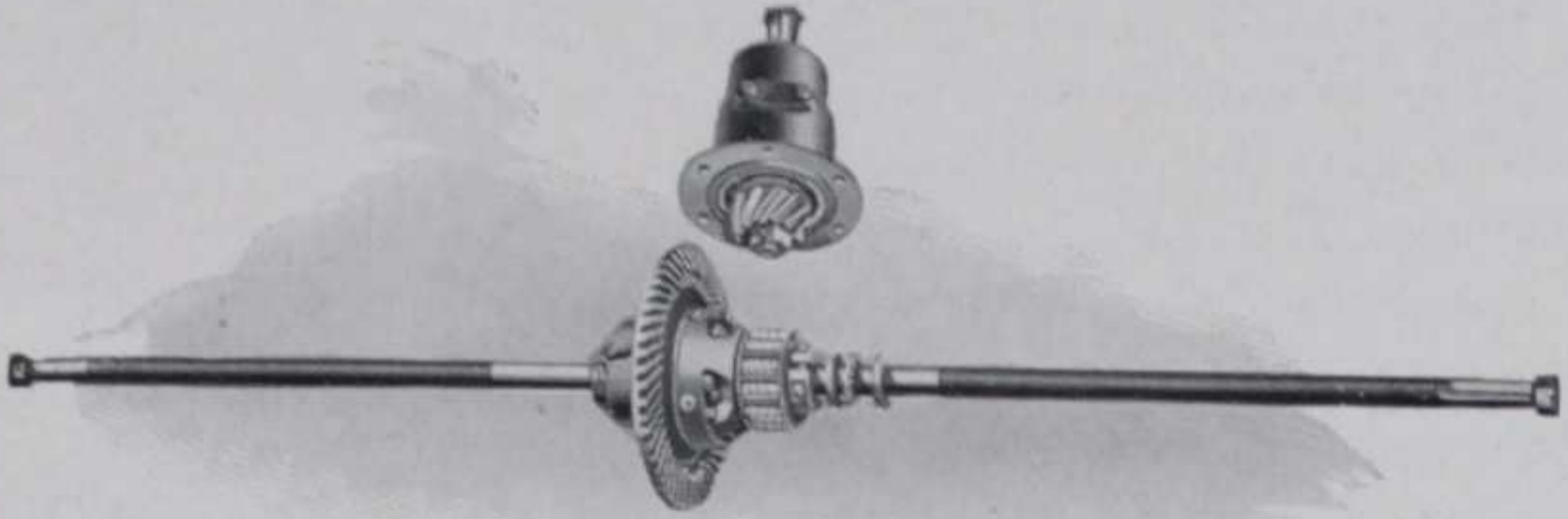
Pistons are cast from the same grade of material as is used in the cylinders. The pistons are $3\frac{3}{4}$ inches long and fitted with three diagonally split concentric rings $\frac{3}{16}$ inches wide.

The piston pins are made of annealed special steel tubing hardened and accurately ground to size. The pin is held stationary in the piston houses, and has its bearing in a large bronze bushing pressed into the connecting rod. The piston pin bearing is $1\frac{3}{32} \times 1\frac{1}{2}$ inches.

The cam shaft is drop forged of low carbon steel, the cams being integral



The sturdy "built up" rear axle housing and powerful 14-inch brake drums.



The "Brown-Lipe" spiral bevel differential mounted on Hyatt high-duty roller bearings; $1\frac{1}{4}$ -inch chrome nickel-steel drive shaft.

with shaft and runs in long white bronzed bearings, lubricated by force feed from the oil pump. The front cam shaft bearing is $2\frac{17}{64} \times 1\frac{1}{2}$ inches. The center bearing is $2\frac{1}{4} \times 1\frac{1}{8}$ inches and the rear bearing is $2\frac{7}{32} \times 1\frac{3}{4}$ inches.

The crank shaft is of the 3-bearing type, well proportioned and has unusually large bearings. It is made of special crank-shaft steel, drop forged and heat treated, giving a tensile strength of 90,000 pounds per square inch. The front crank-shaft bearing is $2\frac{3}{16} \times 2\frac{23}{32}$ inches, the center bearing is $2\frac{7}{32} \times 2\frac{3}{8}$ inches, and the rear or fly-wheel bearing is $2\frac{1}{4} \times 3$ inches.

The crank, and connecting rod bearings are made of the highest grade nickel babbitt. Connecting rod and crank-shaft bearings are held in place by brass retaining screws, and are backed with bronze which, being a good conductor, aids materially in keeping the bearings cool. All bearings after being carefully fitted, are expanded on special expansion arbors, reamed and finished with a slow-running, spiral-cut power "burnisher" to a flawless perfection which gives over 98 per cent of actual bearing surface.

Lubrication, the great essential of modern motor building, is accomplished by a combination force-feed and splash system. A horizontal plunger pump driven by an eccentric from the cam shaft forces oil through copper tubes direct to the timing gears and all main crank and cam-shaft bearings. It then drains back into the oil pan, thus maintaining a proper level for the splash lubrication for pistons, piston pins, and connecting rods.

RADIATOR — The large hexagon honeycomb radiator insures ample radiation and cooling at all times. It is supported on the front cross member of the frame and anchored by two bolts; these bolts are easily accessible, making removal of the radiator a simple operation.

A unique feature is the detachable case; a very desirable proposition, especially when removal of the radiator is desired and when repairs to the core are necessary.

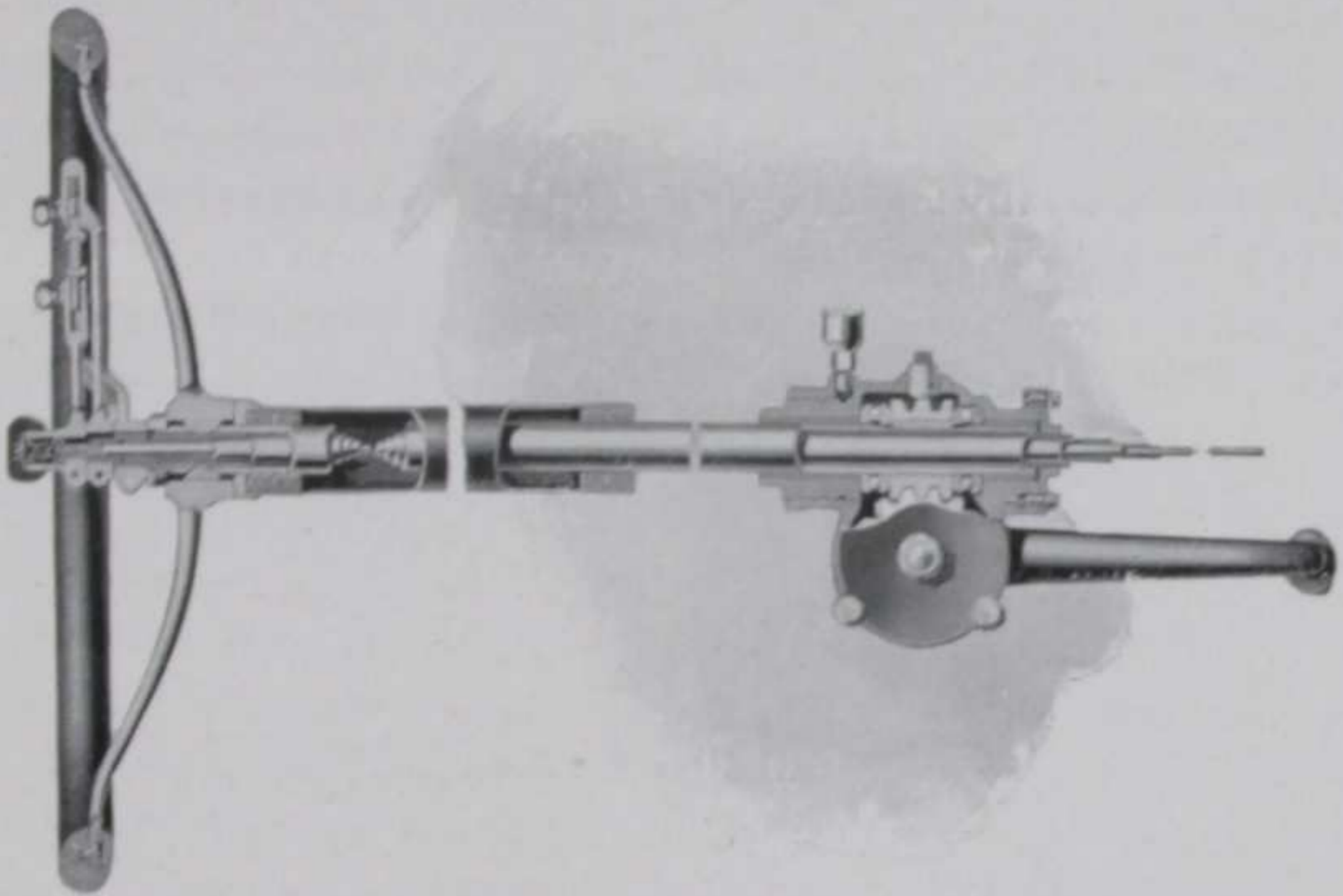
ELECTRICAL EQUIPMENT — The most important part of the electrical system is the new Westinghouse generator, which automatically regulates the current it supplies according to the demand on the system. The total weight of the generator is about 16 pounds. It operates at pump shaft speed, no friction speed regulation device is used. An automatic cutout and switch closes the circuit to the 6-volt, 80 ampere battery, when the generator speed is such that it can charge the battery. This switch automatically opens the circuit when the speed drops to such a point that the battery tends to discharge.

The Westinghouse ignition unit is one that has reached the highest state of perfection. The unit is self contained in that it has combined in one unit, the interrupter, the spark coil and condenser, and distributor. Three wires lead from battery to ignitor unit, so that the poles are automatically changed each time the ignition switch is turned. Current for the ignition is supplied from the battery.

The lighting system consists of the Westinghouse generator and lighting switch in connection with a 6-volt, 80 ampere storage battery. A single pair of headlights are used with double bulbs of 20-candle power for road driving, and small bulbs of 4-candle power for dimming.

The starting system consists of a motor and a simple foot-operated switch in connection with an automatic pinion shift device. The starting motor is entirely enclosed and is ample in size to crank the engine under the most adverse weather conditions, to overcome backfiring of the engine. The motor is applied by gearing the teeth to the fly wheel.

CLUTCH — The clutch is unusually soft in action and is of the dry Multiple disc type. There are thirteen discs 8 inches in diameter, and made of saw steel and lined with Multibestos — 6 driving and 7 driven. The clutch releases on a thrust ball bearing, which is lubricated by the



Cross section of steering gear, showing worm and full gear, and adjustments for taking up lost motion.

oil from the transmission, by means of oil grooves cut in the shaft, allowing the oil to run from the transmission to the bearing, thus making the bearing self lubricating.

TRANSMISSION— The transmission case is of unusually neat and compact design, which shortens greatly the length of the shafts and adds to the rigidity of the entire assembly. The gears as well as the shafts are $3\frac{1}{2}\%$ nickel steel carefully heat treated. The gears have a face width of $\frac{13}{16}$ inches, the counter shaft is $1\frac{1}{4}$ inches in diameter, and the main shaft is $1\frac{3}{8}$ inches, maximum diameter with splines $\frac{1}{4}$ inch deep. They are mounted on four annular ball bearings with adjustment for taking up end play. The reverse and idler gear is mounted on plain bronze bearings.

The gear reductions in the transmissions are 2.7 to 1, on low or first speed; 1.66 to 1 on second and 1 to 1 on direct or high. Reverse is 3.6 to 1.

CARBURETOR— The very latest type Stromberg carburetor with short manifold and hot air "stove" on the exhaust pipe insures the greatest efficiency and economical operation at all times.

DRIVE — The "Six-60" embodies the very latest development in flexible drive. This is known as "Hotchkiss" type; while more flexibility than is usually found in this type of drive is assured by the floating tubular propeller shaft which is 1½ inches in diameter with 3/16-inch walls. The two universal joints, one at each end of the shaft, are known as a double ball and socket universal joint consisting of two balls mounted on each end of the propeller shaft with trunion pins, and runs in a double cup case; cup, balls, and trunion pins are hardened and ground and packed in grease.

REAR SYSTEM — The large, sturdy rear axle housing is of the built-up type of construction, the differential housing being malleable iron, the axle tubes are special alloy seamless steel tubing, pressed and riveted in the housing with truss rods strengthening the construction.

It is equipped with Brown-Lipe spiral bevel differential of the very latest floating type, carried in Hyatt-Duty roller bearings with adjustable ball-thrust bearings to take care of the side thrust.

A short drive pinion is carried on two heavy duty bearings of unusual size; these are adjustable allowing take up for wear or play on the pinion shaft. The drive pinion can be adjusted to the large spiral bevel ring gear, while this ring gear is itself adjustable. The drive shafts are chrome nickel steel 1¼ inches in diameter.

The gear ratio is 4 1/3 to 1; 13 teeth on the drive pinion and 53 teeth on the ring gear.

BRAKES—Four brakes are provided all on the rear wheels; service brakes contracting with foot lever, emergency brake expanding operating with hand lever; lined with highest grade brake lining and provided with adjustable brake rod ends, also having extra adjustment on external or service brakes for adjusting brake bands to the brake drum as well as adjusting for wear. Brake drums are bolted to the wheels by six bolts. Drums are 14-inches in diameter with 2-inch face or width. Brakes are extremely sensitive when applied.

FRONT AXLE—The front axle is the Elliot type "I" section, drop forging without welds. Spring seats integral. Steering knuckle is bushed. Steering yoke bolts, or king pins are hardened and ground, having trap oiler at the top of bolt to provide lubrication.

This greatly reduces the wear on the steering knuckle bolts and bushings, which is of the most vital importance to the car user. Drag links are so designed that a minimum turning radius is provided—a feature greatly appreciated on narrow streets and roads. The car turns in a 36-foot circle.

WHEELS—Front wheels are extra heavy second-growth hickory with 12-1½ inch spokes bolted in hub by twelve bolts. The wheel bearings are 100 per cent thrust Gurney annular.

Rear wheels are extra heavy second-growth hickory with 12-1½ inch bossed spokes bolted in hub by twelve bolts. Six heavy bolts hold the 14-inch brake drum to the wheels. Rear wheels run on roller bearings.

MISCELLANEOUS—The rims are new style Firestone demountable, carrying straight side tires, and are held on to the wheels by means of six bolts and lugs.

Tires are unusually large, being 35 x 4½ inch, straight side with nonskid on rear wheels.

The steering is left hand side, irreversible worm to sector, with adjustment for taking up wear and lost motion. 18-inch corrugated steering wheel with spark and throttle control located on top.

The ball and socket types of gear shifting with three speeds forward and one reverse.

The wheel base is 125 inches.

Gasoline supply is from a 16-gallon round steel tank located on rear of car held in place by two steel bands, and removable by unscrewing the bands that hold the tank in position. Gasoline is conveyed from tank to the carburetor by means of the Steward-Warner vacuum system.

Thoroughly in keeping with the great care given to the mechanical design and excellence, is the truly luxurious and seven-passenger touring body of the very latest boat type, made of heavy gauge sheet steel with pressed steel cowl and concealed hinges.

The car is upholstered in the very highest grade of long-grain, bright-finish real leather, over long soft spiral spring cushions.

The auxiliary seats in the tonneau are of original design of the single-leg construction. The seats proper have an adjustable back to give more comfort to the occupants of auxiliary seats; this construction gives a very compact seven-passenger car, but at the same time an unusual amount of leg room and comfort.

Carrying out the luxurious finish of this car, the instrument board is detachable, faced with sheet steel in walnut finish, which, with the nickel instruments located on this board, gives a very attractive and handsome appearance, as the rest of the car is lined throughout with bright-finish leather. The tonneau is covered with a high-grade fawn color carpet, while that part of the front compartment subject to wear by the driver's feet is lined with aluminum and the floor boards covered with a high grade linoleum.

The standard equipment includes the Chase leather improved one-man top with one-piece roll-up back curtain and Collin's quick detachable side curtains; the doors are provided with the Blackmore adapters so that the curtains swing with the door, eliminating the usual clumsy opening of the doors when curtains are in place.

The standard color is dark olive green, body, hood, and wheels, black fenders and splash aprons. The bodies are hand filled, rubbed, and finished. Even the chassis is finished by hand, using no paint spray of any kind. Twenty coats of paint, including filler, rubbing varnish and finish, are used in insuring a handsome and attractive finish.

All instruments, namely: Ammeter, combined lighting and ignition switch, speedometer, carburetor adjustment, instrument board lamp, and oil pressure gauge are mounted on an instrument board within clear vision of both the front seats and very accessible from the driver's seat. A leather "kick" pad is placed on the back of the front seat to prevent the passengers in the rear seat from marring the back of the front seat with their feet or baggage.

MARION HANDLEY

The
Factory

THE SIX PRESENT



The thoroughly modern and up-to-date home of the "Marion-Handley." Length 900 feet, width 440 feet. One of the largest automobile plants in the State of Michigan.

OUR OWN HOME

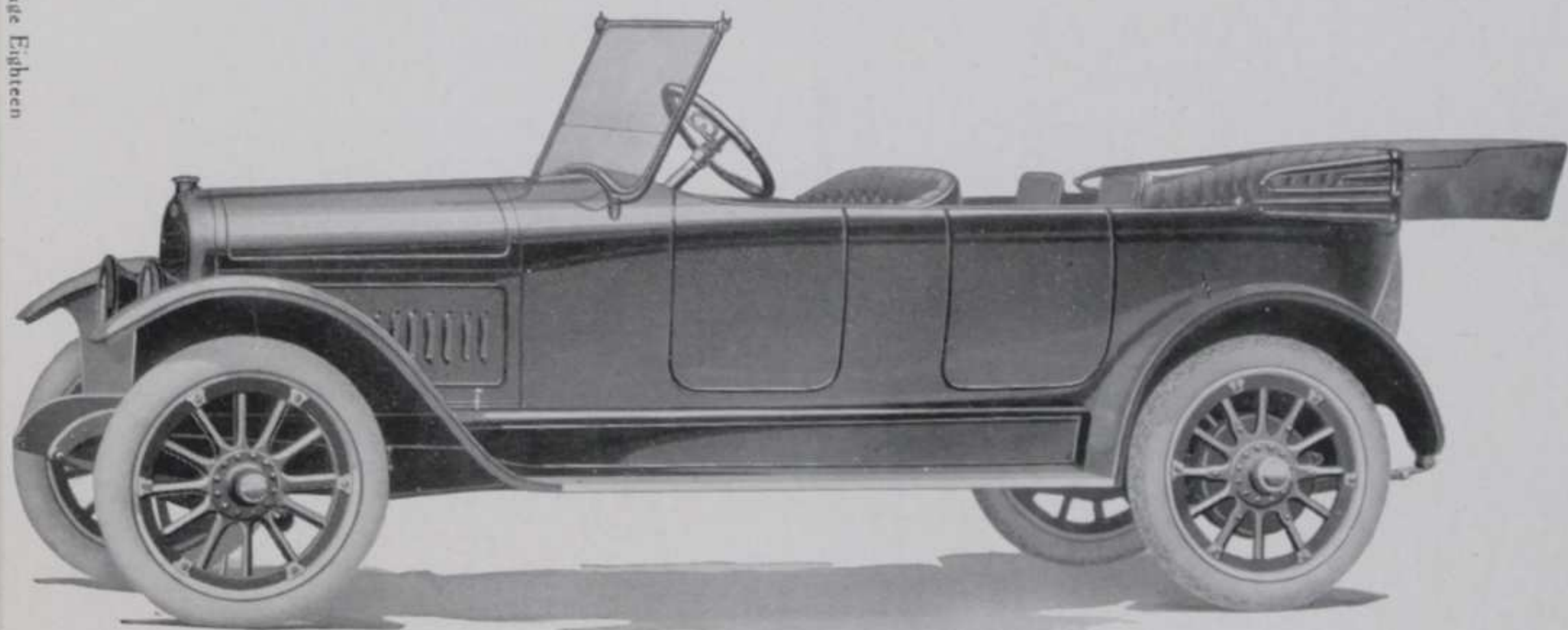
THE big Mutual factory at Jackson covers 17 acres of land. It is equipped with every facility for producing high-grade cars under the most ideal conditions.

Good cars cannot be built in a crowded shop, nor can they be uniformly good without system. Therefore we have plenty of room, plenty of daylight and the most modern scientific methods.

Six spurs from the Michigan Central main line penetrate the factory at different points, so that incoming material is delivered to the stock rooms

and finished cars are sent to the loading docks without re-handling or delay.

Much could be written about the painstaking operations carried on within these walls of brick and stone. But these are some of the main features that are responsible for the quality in "Marion-Handley Sixes"—or rather, that make Marion-Handley quality possible at the price. There isn't any lost motion in the plant. Everything moves with precision and keeps on moving until the final product is ready for the market—beautiful, powerful and lastingly serviceable.



1917 Marion-Handley "Six-40" (7-Passenger Touring) \$1275 at Jackson, Mich.

120-inch wheelbase; $3\frac{1}{2}$ x 5 high speed six cylinder Rutenber motor; 4-inch tires, non-skid on rear wheels; Westinghouse electrical equipment; vacuum feed to carburetor; Chase leather one-man top; Collins curtains and Blackmore adapters.

Finished in rich dark wine, gold striping and black fenders.

Wire Wheels \$100 extra.

In the Marion-Handley Six-40 you have a car whose singular beauty is the cause of comment on every side. The "boat" line of body is again in evidence, with the same deep, brilliant, lasting finish that is a part of the Six-60.

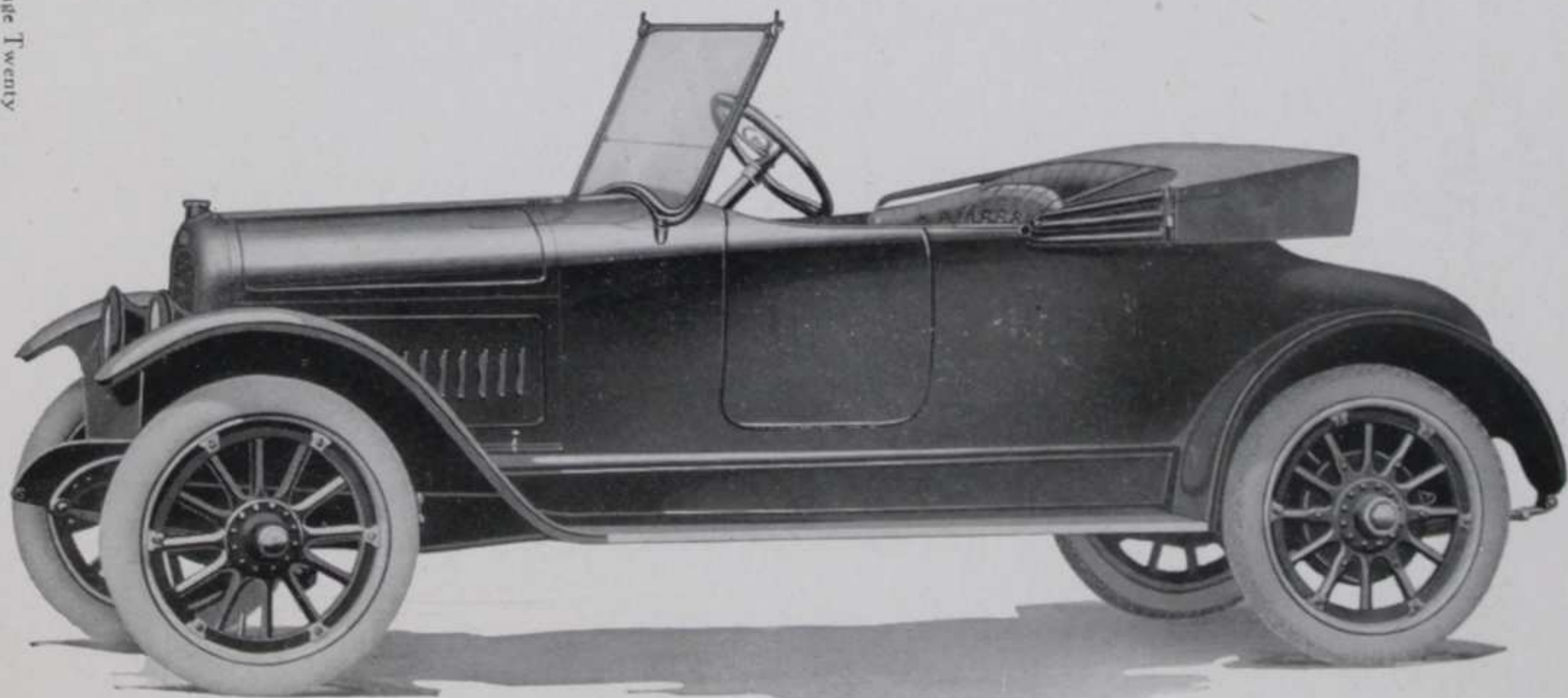
The deep rich wine color of the body, hood and radiator, striped with gold, harmonizes beautifully with the black fenders, the whole carrying a sense of refinement and good taste and an individual "tone" that lifts it away from the ordinary into a distinctive niche of its own.

The motor is wonderfully smooth and velvety in its action and develops a surprisingly high rate of speed for its quoted 40 horse power. No noise, no jar, no trouble—clean, smooth going, always at a gratifying low fuel and oil expenditure.

And the equipment—

Think of everything you would want on a higher grade motor car. Then look over this Six-40. You'll agree that the equipment of this new "Six-Pre-eminent" is complete in the fullest measure.

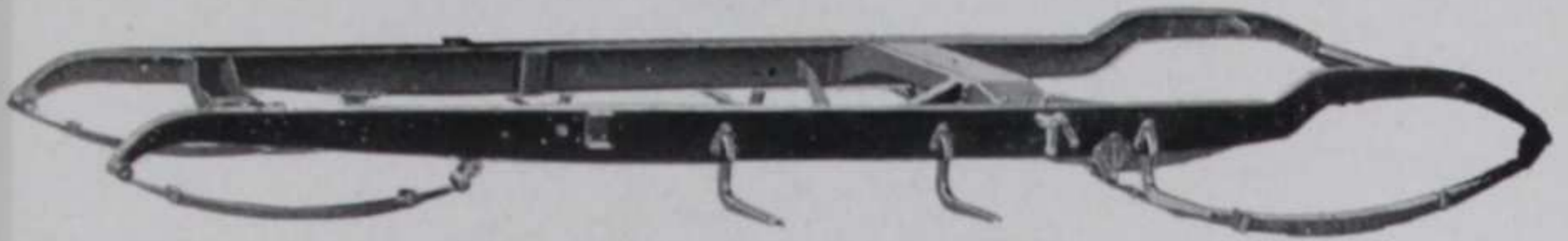
Where, in any car at anywhere near the price, will you find such thorough and complete fittings? Where will you find a car that so exactly meets the demands of the motorist who wants an automobile that is something more than a mere vehicle of conveyance?



1917 Marion-Handley "Six-40" (4-passenger Roadster) \$1275 at Jackson, Mich.

The same chassis, finish and equipment as the "Six 40" touring car. The seating arrangement is distinctive — a separate seat for the driver, a wide seat for two to the right and slightly to the rear of the driver's seat and a fourth or an auxiliary folding seat that folds forward into the dash when not in use.

Equipped With Wire Wheels \$100 extra.



The frame—the back-bone of the car—is rigidly built with side members $5\frac{1}{2}$ inches high, arched over rear axle and tied together with large cross members.

The "Six-40" is the lightest weight, six-cylinder seven-passenger car on the market to-day, weighing but 2,800 pounds completely equipped and ready for the road.

The frame, unusually rigid, has a vertical section of $5\frac{1}{2}$ inches and $2\frac{1}{2}$ -inch horizontal section made of 5-32-inch carbon steel stock; the front cross member is of the inverted channel type, $4\frac{1}{2}$ inches in width and placed very close to the front end of the frame; the middle cross member is 7 inches in width, while the gusset plates increase the strengthening union with the side rails to $13\frac{1}{2}$ inches.

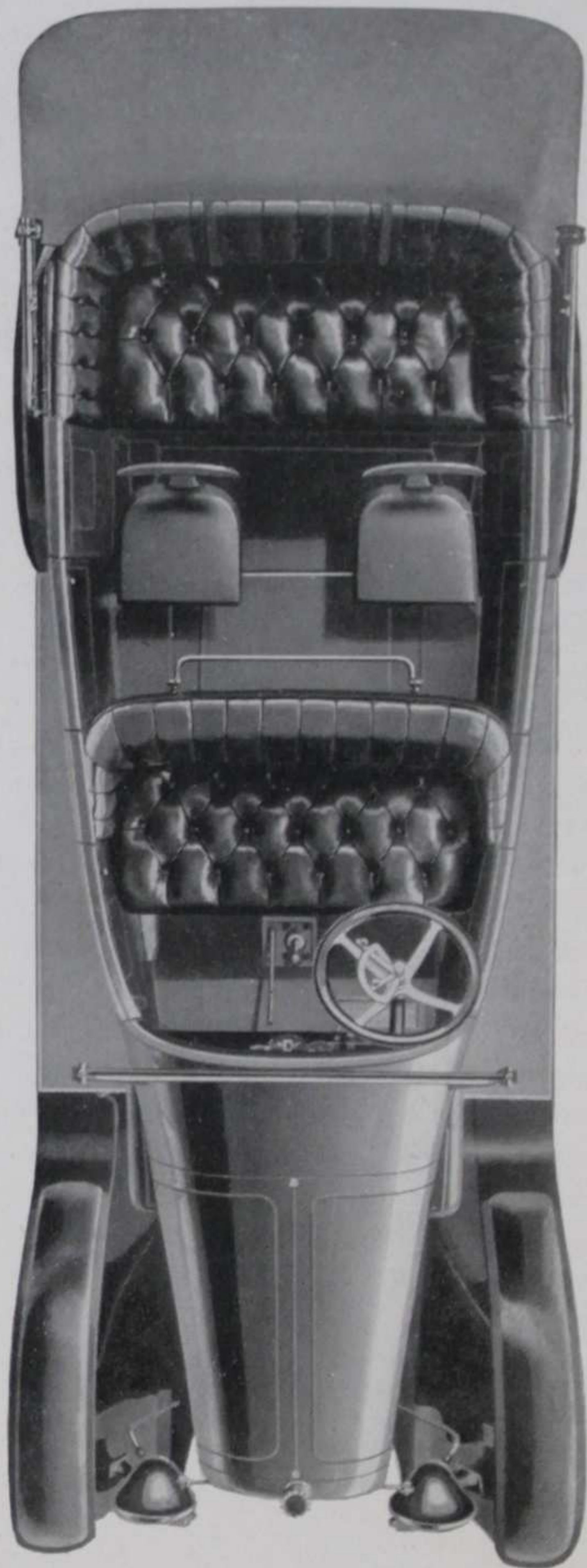
The conventional design rear cross member has been omitted and the ends of the side rails are tied together by a tubular cross member at the extreme rear end of the frame. This tube is $1\frac{7}{8}$ inches in diameter.

Another feature is the semi-elliptic rear spring 57 inches in length and 2 inches wide, underslung from the rear axle. The front springs are 36 inches long, made of genuine imported Sheffield alloy steel.

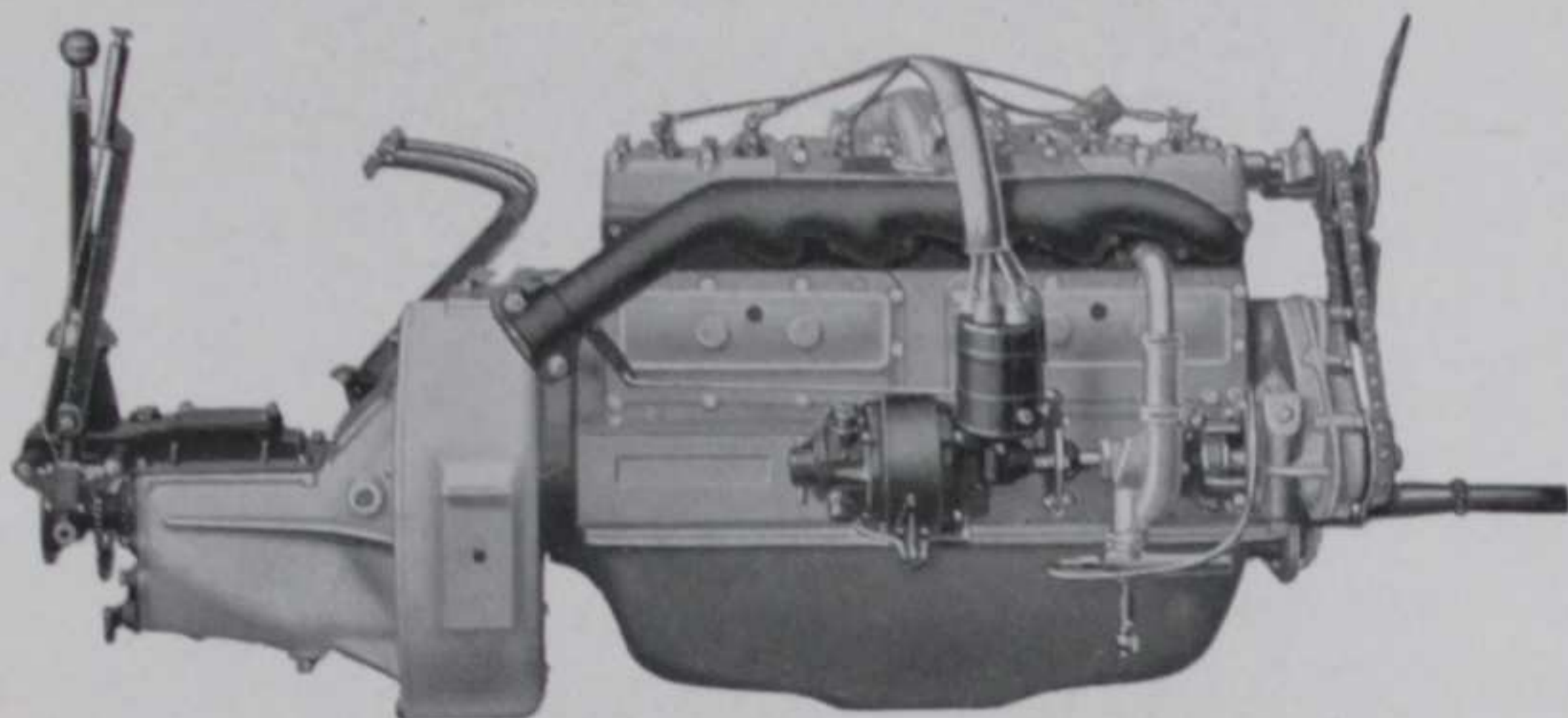
The motor is a high-speed foreign type "L" head design, with a bore of $3\frac{1}{8}$ inches and 5-inch stroke, having a displacement of 230.1 cubic inches, and develops 45 H. P. at 2000 R. P. M. according to dynamometer tests. The cylinders and upper crank case are cast *en bloc*. The lower crank case is of pressed steel and merely serves as an oil retainer, its capacity being approximately $1\frac{1}{2}$ gallons. This case is detachable and allows adjustment of all inside motor bearings, such as connecting rod and main bearings.

The crankshaft has bearings of unusual size, 2 inches in diameter, with the front bearings $2\frac{3}{4}$ inches long, the rear bearings $3\frac{1}{8}$ inches and the center bearing $2\frac{3}{4}$ inches. Connecting rod bearings are 2 inches in diameter by $1\frac{7}{8}$ inches long, while the front and middle cam shaft bearings are $1\frac{15}{16} \times 2\frac{5}{8}$ respectively.

Lubrication is accomplished by means of a combination force feed



Overhead view of "Six-40" seven-passenger touring car; auxiliary seats raised, showing ample leg room and luxury of both tonneau and front seat.



Right side of "Six-40" motor. Note unusual accessibility and neat application of the Westinghouse generator and ignition unit.

and splash system; a plunger pump operated by an eccentric on the cam shaft and submerged in the oil reservoir; and oil sumps directly under each connecting rod, supplied from the overflow of the main crankshaft bearings.

That great essential of modern motor construction—silence—is assured by means of the Fabroil cam gear. The gear itself has a $1\frac{1}{8}$ -inch face, ten pitch helically cut teeth.

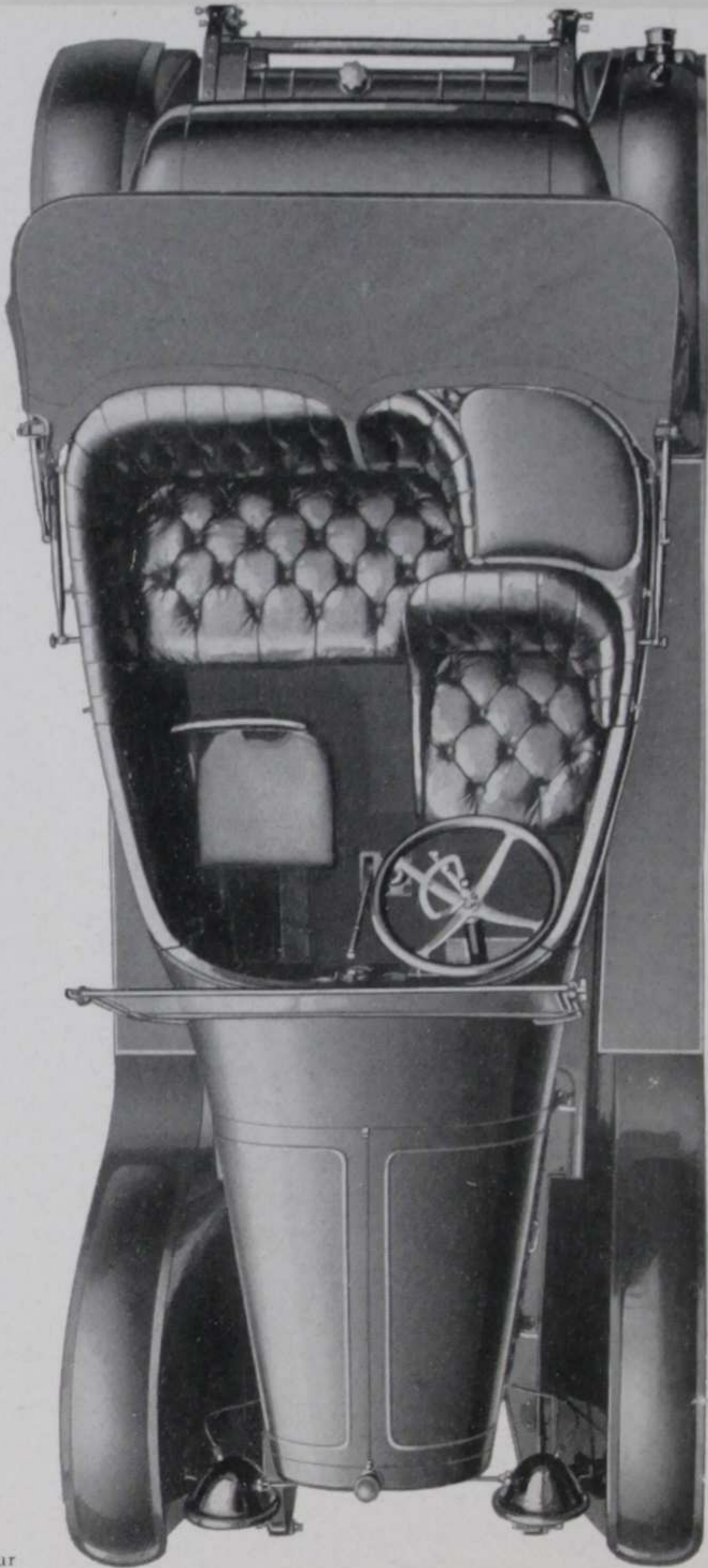
All bearings for crankshaft, connecting rod, and cam shaft, are the highest grade die-cast, nickel babbitt, except an S. K. F. ball-thrust bearing used at the rear end of the cam shaft for taking radial and thrust loads in both directions.

The valves are $1\frac{3}{16}$ inches in diameter with a $\frac{5}{16}$ -inch lift, made of alloy steel.

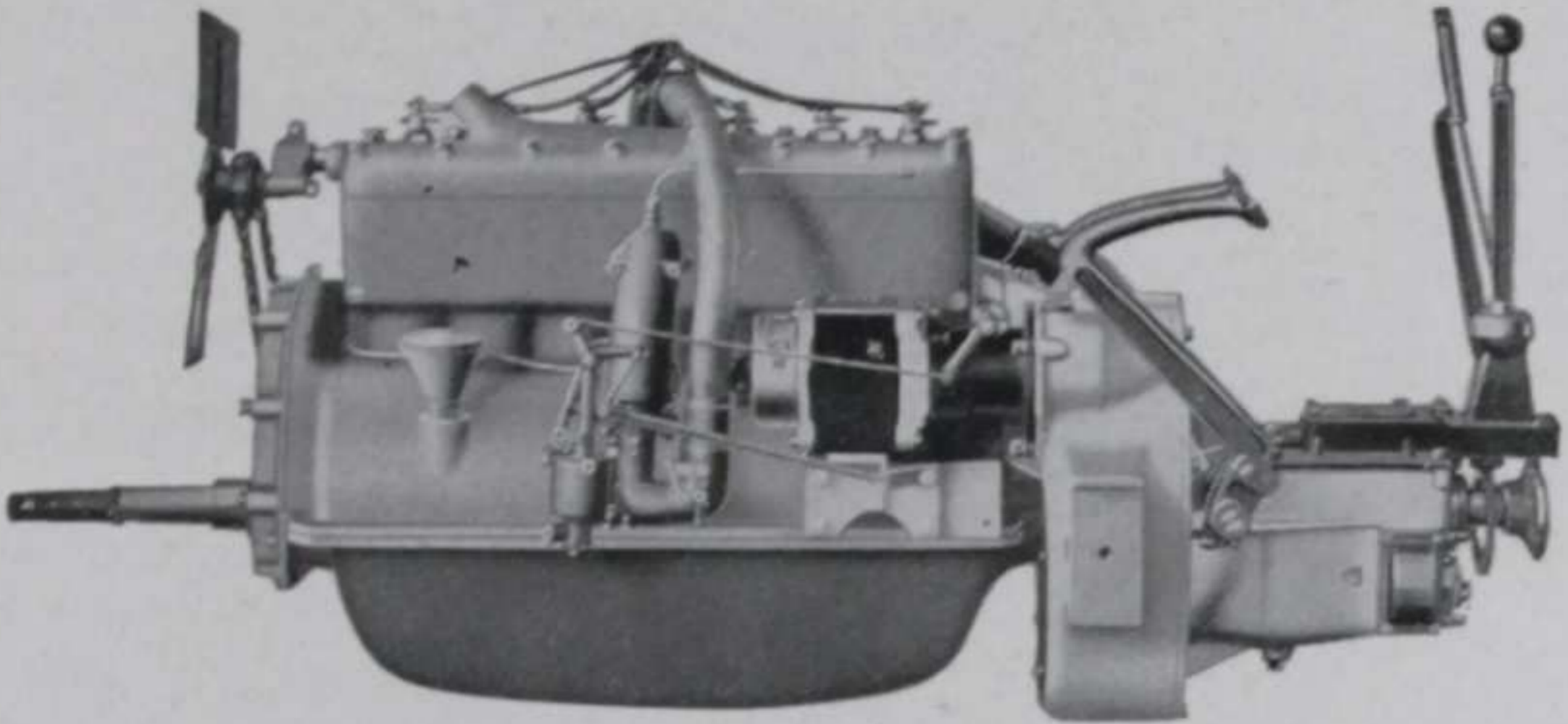
The pistons are $3\frac{1}{8}$ inches in length and equipped with three leak-proof piston rings.

Cooling system consists of a centrifugal water pump, located on valve side, and driven in line with the lighting generator; a large hexagon honeycomb radiator with a capacity of four gallons, insuring ample radiation and cooling at all times, and a two-blade aeroplane fan of pressed steel running on ball bearings, and provided with a rocker-arm adjustment for belt stretch.

The most important part of the electrical system is the new Westinghouse generator, which automatically regulates the current it supplies.



The unique seating arrangement and unusual roominess a feature of the "Six-40" four-passenger roadster. The fourth or auxiliary seat folds into the dash when not in use.



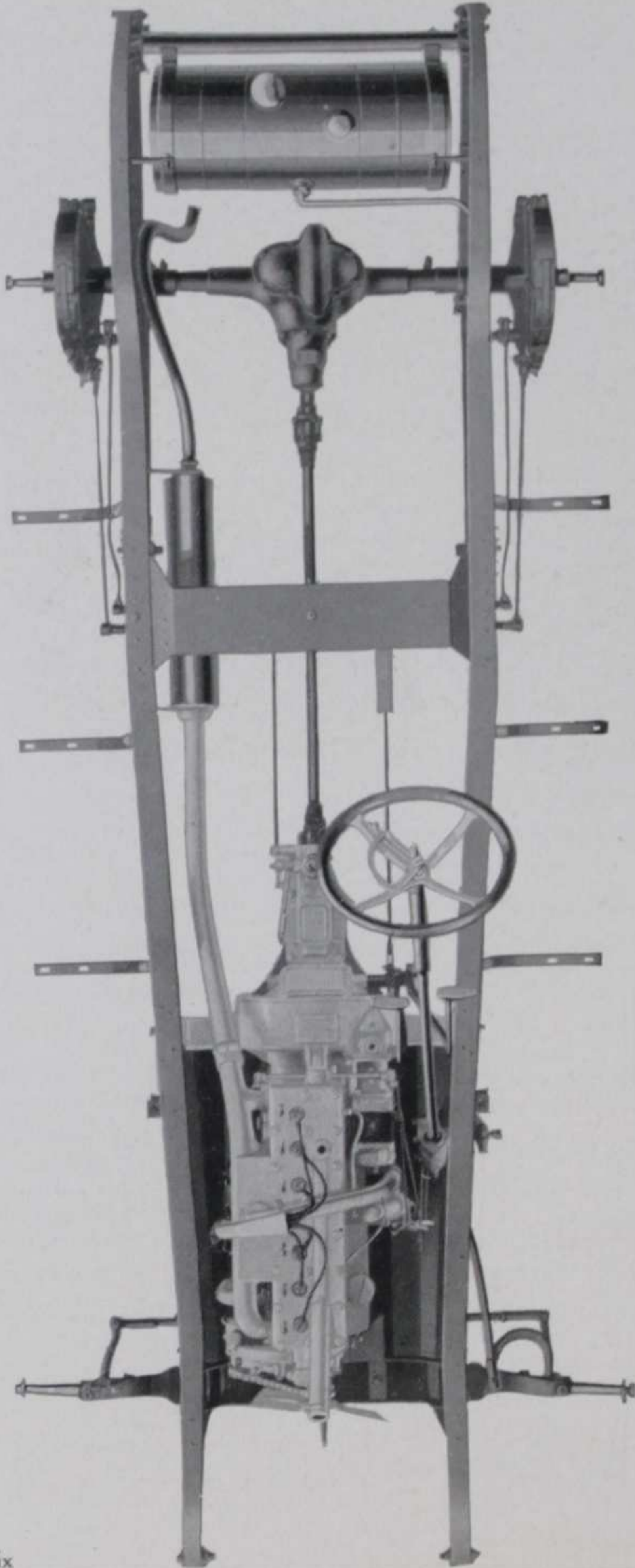
Left side of "Six-40" motor; the carburetor and the Westinghouse separate starting motor is geared to the fly wheel by the automatic Bendix shift or inertia pinion.

according to the demand on the system. An automatic cut-out switch closes the circuit to the 6-volt 80 ampere-hour battery, when the generator speed is such that it can charge the battery. This switch automatically opens the circuit when the speed drops to such a point that the battery tends to discharge.

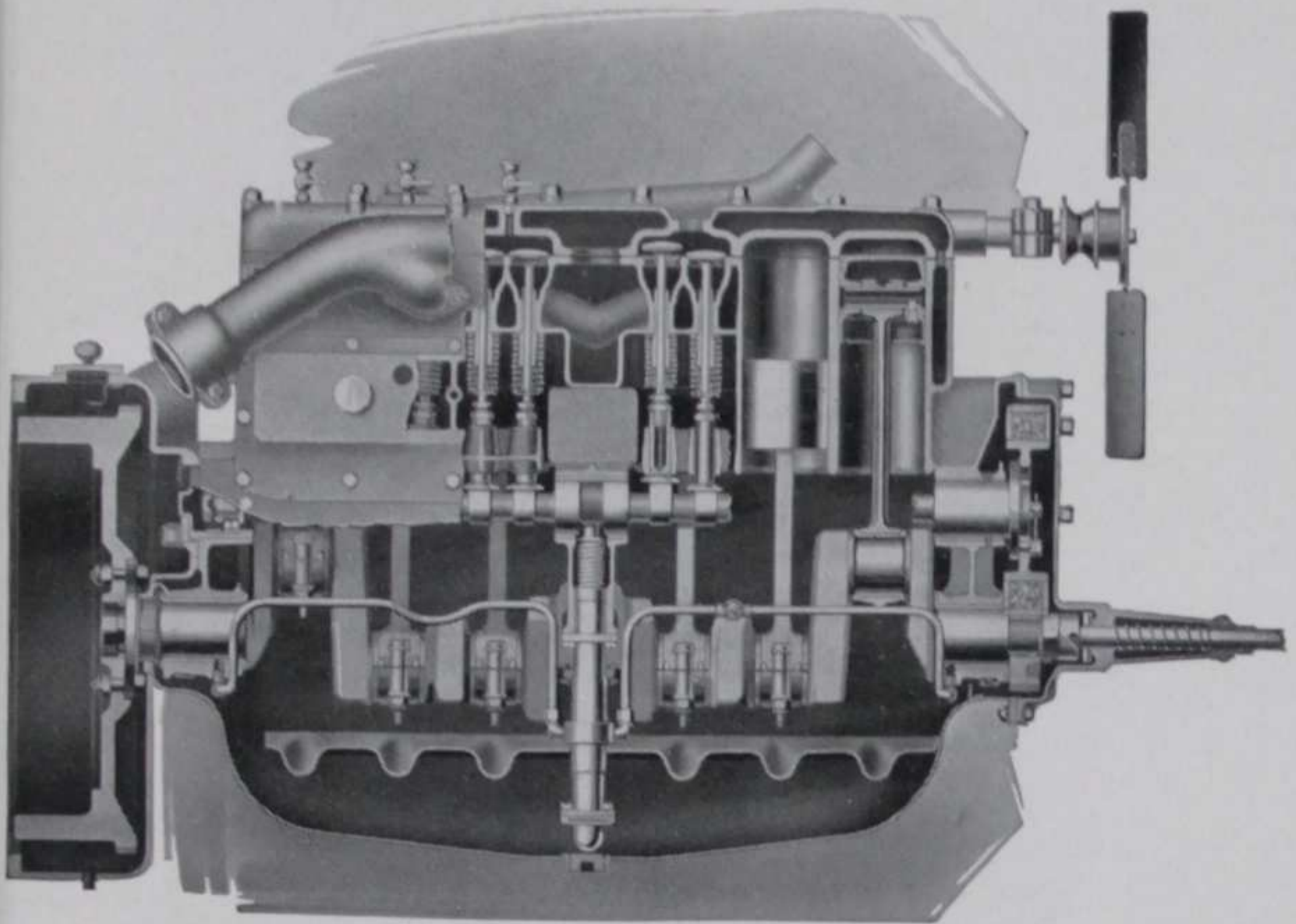
The Westinghouse ignition unit is one that has reached the highest state of perfection. It is self-contained in that it has combined in one unit, the interrupter, the spark coil and condenser, and distributor. Three wires lead from battery to ignitor unit, so that the poles are automatically changed each time the ignition switch is turned. Current for the ignition is supplied from the storage battery, but the coil will operate from dry cells (to be used in case of an emergency).

The lighting system consists of the Westinghouse generator and lighting switch in connection with a 6-volt and 80 ampere-hour storage battery. A single pair of headlights are used with double bulbs, 18-candle power, for road driving, and small bulbs of 4-candle power for dimming.

The starting system consists of a motor and a simple foot-operated switch in connection with an automatic pinion shift device. This automatically meshes the driving pinion with the engine fly-wheel teeth when the starting switch is closed, and demeshes it when the engine runs under its own power.



Elimination of all unnecessary parts, clean, sturdy design and lightness without sacrifice of strength is the key-note of the "Six-40" chassis.

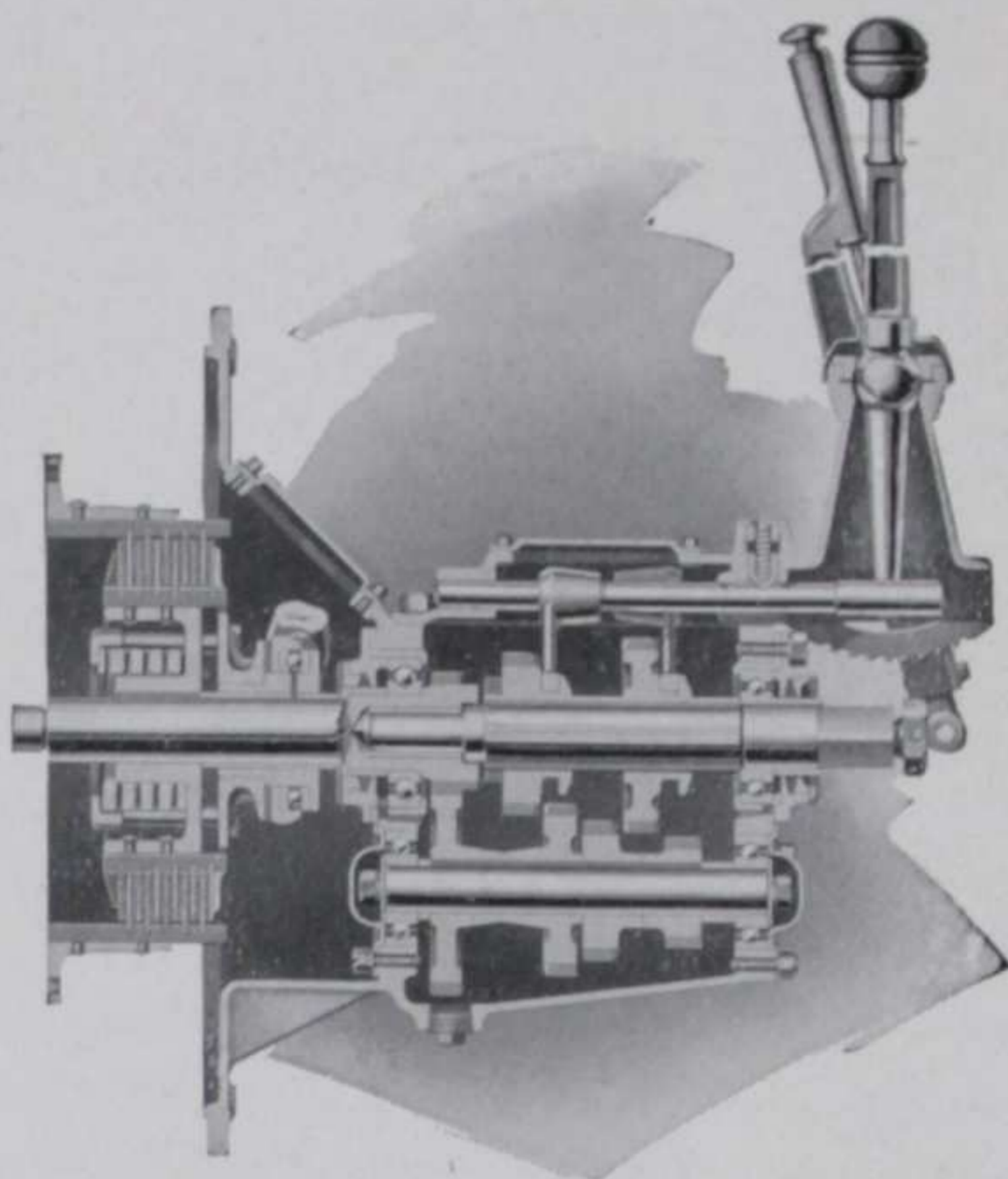


Cross section of the "Six-40" motor, illustrating lubrication system and accessibility of entire motor. Note especially the wide Fabroil timing gears.

The clutch is the dry multiple disc—eleven discs lined with Multi-bestos, of which five are driving and six are driven; discs 8 inches in diameter, made of saw steel. An annular bearing is used for clutch release, this bearing being lubricated by the oil from the transmission.

The transmission is of unusually neat and compact design. The gears of $3\frac{1}{2}\%$ nickel steel have a face width of $\frac{3}{4}$ inches, the counter shaft is 1 inch in diameter and main shaft is $1\frac{9}{16}$ inches. They are mounted on four annular ball bearings with adjustment provided for taking up end play. The reverse idler gear is mounted on a plain bronze bearing. The gear reductions in the transmissions are: $2\frac{1}{2}$ -1 on first; $1\frac{7}{10}$ -1 on second; and 1-1, or direct on third, reverse is $3\frac{4}{10}$ -1.

The "Hotchkiss" drive is used, while further flexibility is added and weight eliminated by the floating tubular propeller shaft $1\frac{1}{2}$ inches in diameter with $\frac{5}{32}$ -inch walls. The shaft is equipped with two double ball and socket universal joints, and has a fore and aft travel of 2 inches.



Cross section of clutch and transmission showing short, sturdy shafts and full annular ball-bearing equipment.

The large sturdy rear axle is equipped with Brown-Lipe spiral bevel differential, of the latest floating type, carried on Hyatt high-duty roller bearings with adjustable ball thrust to take care of side thrust. The short drive pinion shaft is carried on two unusually large bearings which are adjustable, allowing take-up for wear or play on the pinion shaft. The drive shafts are chrome-nickel steel, $1\frac{1}{4}$ inches in diameter.

The gear ratio is $4\frac{5}{2}$ to 1: 12 teeth in the drive pinion and 53 on the ring gear.

Four brakes are provided, all on the rear wheels: service brakes contracting with foot lever; emergency brake expanding operating with hand lever; lined with the highest grade brake lining and provided with adjustable brake rod ends, also having extra adjustments on external or service brakes for adjusting brake bands to the brake drum as well as adjusting for wear. Brake drums are bolted to the wheels by six bolts. Drums are 14 inches in diameter with 2-inch face or width.



Front axle with 100% thrust genuine annular ball bearings used in front wheels.
Note unusual "heft" and sturdiness of the forging and steering knuckles.

The front axle is the Elliot type "I" section drop forging without welds. The drag links are so designed that a minimum turning radius is provided. The car turns in a 25-foot circle.

Front wheels are extra-heavy, second-growth hickory with 1½-inch spokes bolted in hub by twelve bolts. The wheel bearings are 100 per cent thrust Gurney annular ball bearings.

Rear wheels are extra-heavy, second-growth hickory with twelve spokes bolted in the hub by twelve bolts and bossed. Six heavy bolts hold the 14-inch brake drum to the wheels. Rear wheels run on Hyatt high-duty roller bearings.

The rims are new style Firestone demountable, carrying 32x4 inch. straight-side tires, with non-skid on rear wheels.

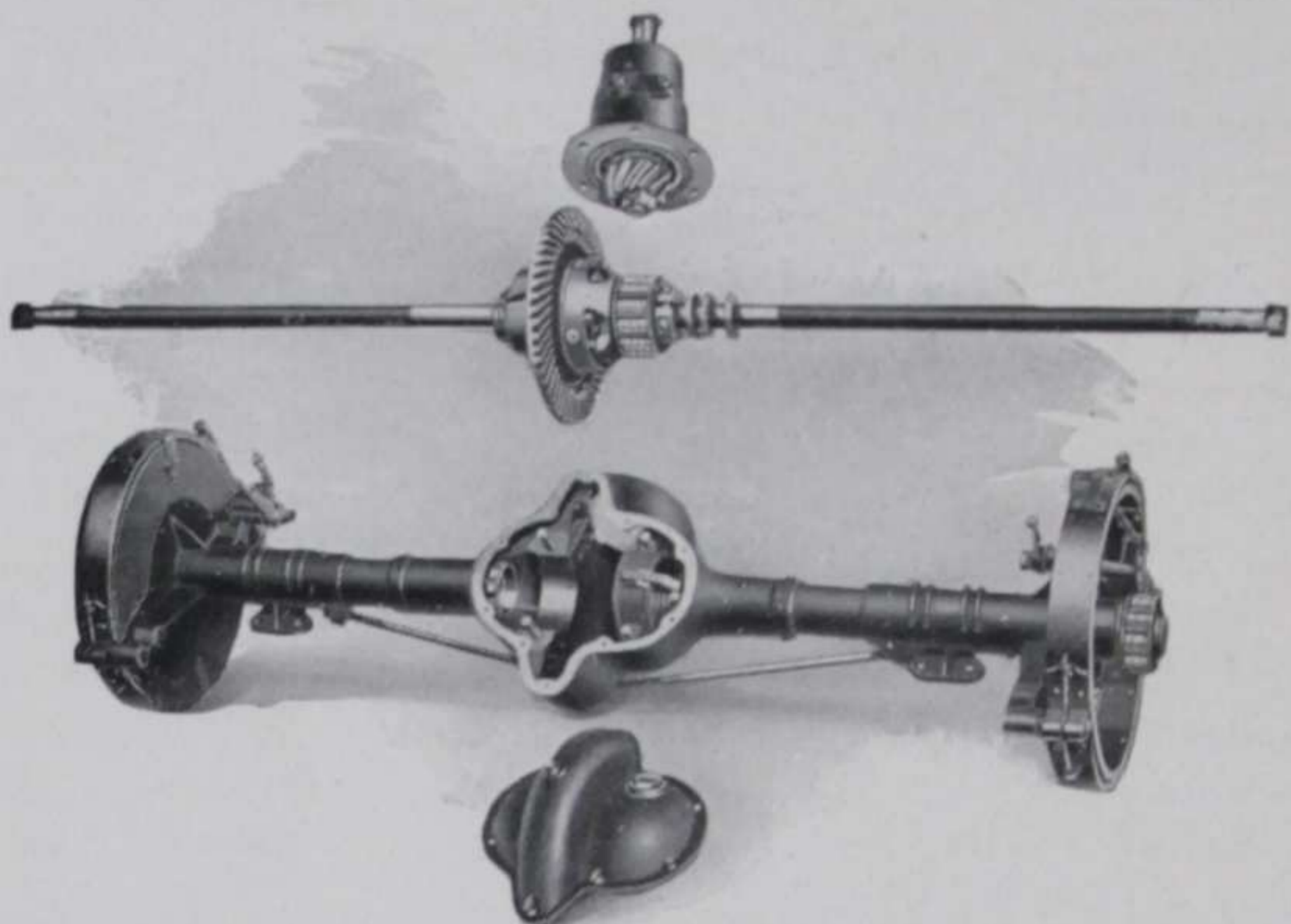
The steering is left hand side, irreversible worm to sector, with adjustment for taking up wear and lost motion. 18-inch steering wheel with spark and throttle control located on top of wheel. Vibrator horn button on head of steering column. Steering column black enameled with aluminum spider on steering wheel. Control levers nickeled.

The center control ball-and-socket type of gear shifting is used with three speeds forward, and one reverse.

The wheel base is 120 inches.

Gasoline supply is from a sixteen-gallon round steel tank located on rear of chassis. The tank is suspended from the tubular rear cross member and brackets attached to the side rails of the frame, relieving the tank from all strains that are so often the cause of leakage. Gasoline gauge on top of tank; gauge is removable. Gasoline is conveyed from tank to the carburetor by means of the Stewart-Warner vacuum system.

The car is upholstered in the very highest grade, long-grain, bright finish **real** leather, curled hair, and double springs.



The "Six-40" rear system disassembled to show spiral bevel differential and bearing mountings of differential and wheels. Also note the very large and efficient brakes.

The auxiliary seats in the tonneau are of the single-leg construction, which makes it possible to locate the seats very close to the side of the body providing an arm rest, with the additional advantage of the wide aisle between the two auxiliary seats.

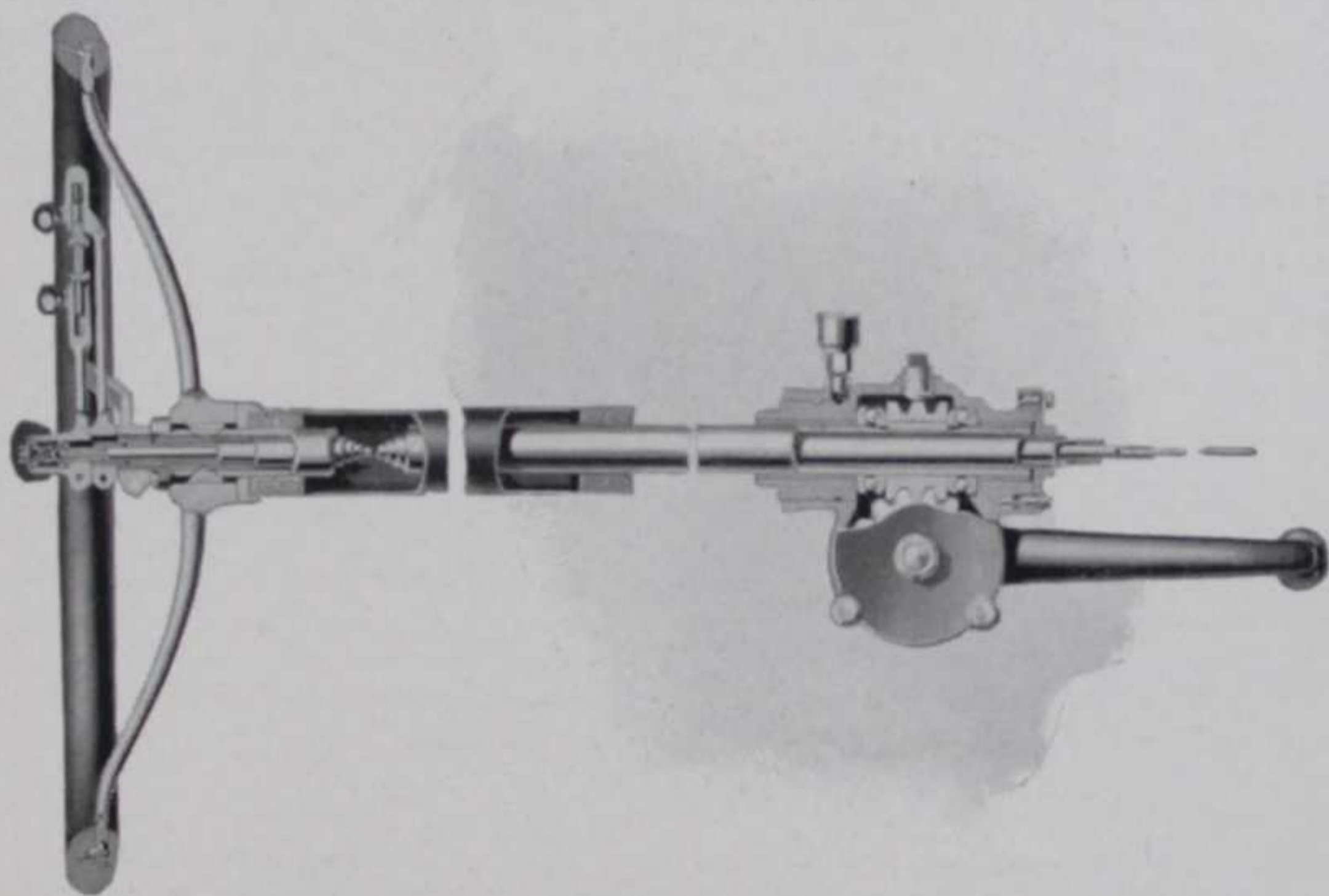
Carrying out the luxurious finish of this car: the instrument board is detachable, faced with sheet steel in mahogany finish, which, with the nickel instruments located on this board, gives a very attractive and handsome appearance, as the rest of the car is lined throughout with bright-finish leather. The tonneau floor is covered with a high-grade fawn color carpet, while that part of the front compartment subject to wear by the driver's feet, is lined with aluminum, adding greatly to the appearance of the car.

The standard equipment includes the Chase leather improved one-man top with one-piece, roll-up back curtain and Collin's quick detachable side curtains; the doors are provided with the Blackmore adapters so that the curtains swing with the door. The slanting wind shield gives a clearer vision in rainy weather and eliminates annoying reflections

in night driving, while a rubber strip between the upper and lower sections is provided for use in cold and stormy weather.

All bodies are finished in that rich, distinctive, dark wine color, black fenders, and splash aprons. The bodies are hand filled, rubbed, and finished. Even the chassis is finished by hand, using no paint spray of any kind such as is the custom on nearly all other cars of this class. This makes the painting more expensive but gives longer life, and a better wearing finish. Twenty coats of paint, including filler, rubbing varnish, and finish, are used in insuring a handsome and attractive finish.

STANDARD EQUIPMENT—Stewart-Warner speedometer driven from drive shaft. Electric vibrator horn with button on top of steering post. Foot rail, robe rail, foot accelerator; one extra Firestone rim, which is held in place by a special tire holder, kit of tools, jack, pump, tire outfit, etc.



Cross section of steering gear and wheel with sector and control levers, as well as horn wire and button.

Standard Warranty

All Marion-Handley cars are sold under the regular standard warranty sanctioned by the National Automobile Chamber of Commerce, to which most of the leading Automobile Manufacturers belong.

