Matheson Automobile C

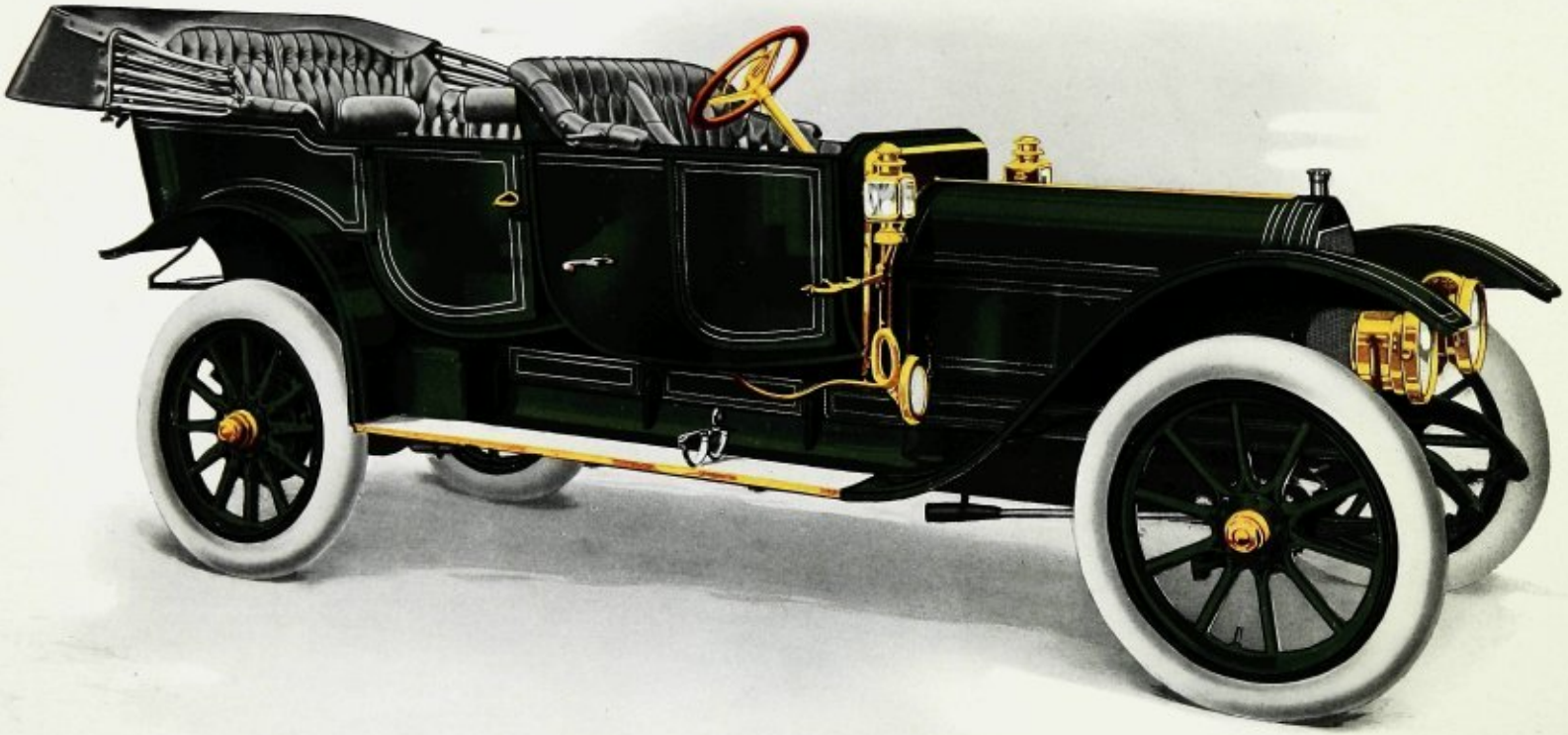
Matheson Cars

Catalog No. J-1

Series "B"

"Built for those who use the best"

"Built for those who use the best"



"Silent Six," Touring, fore-door, seats seven, $4,000

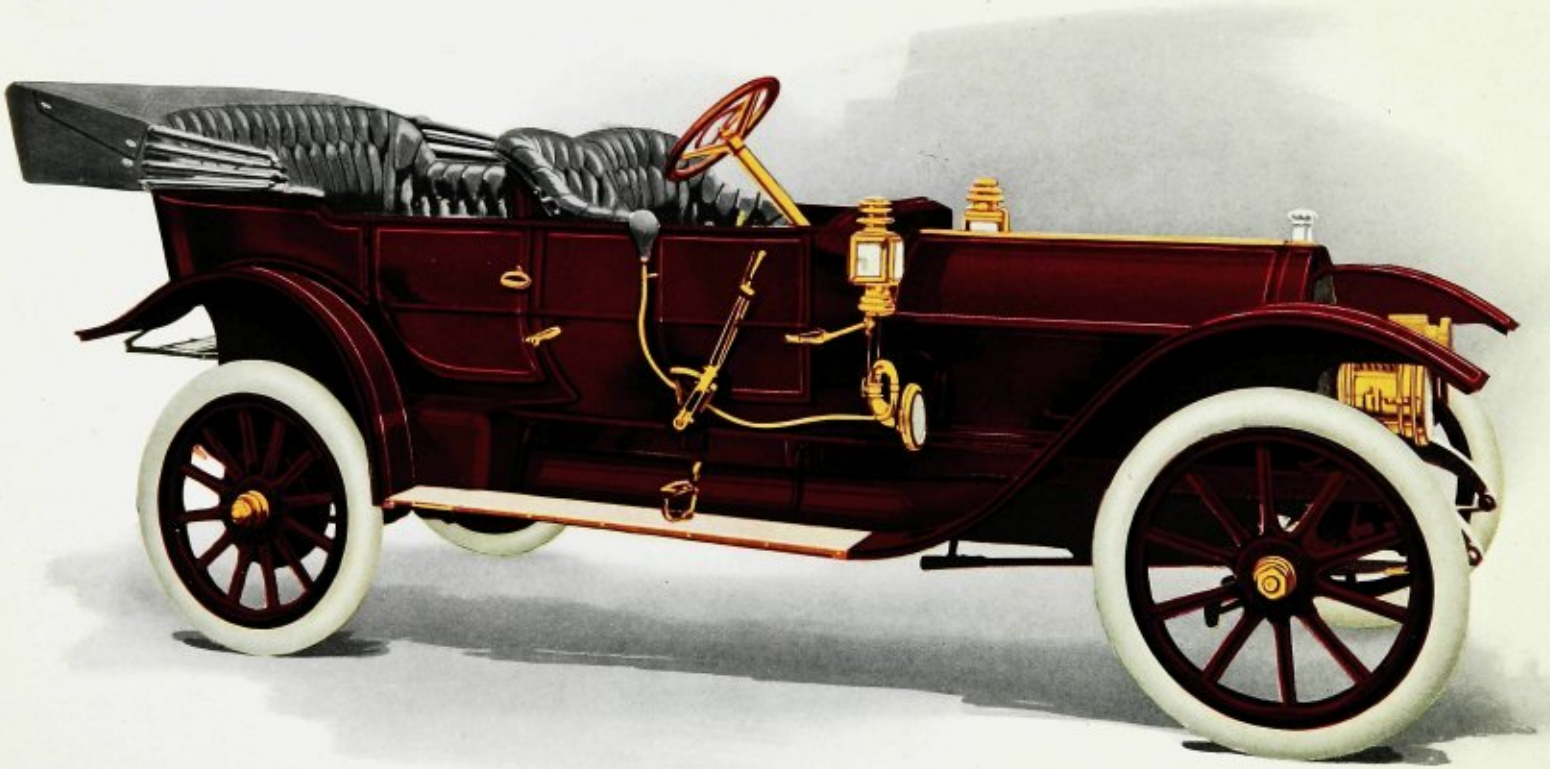
"Built for those who use the best"

"Built for those who use the best"

Matheson Cars

Matheson Automobile Company
Wilkes-Barré, Pennsylvania
New York City Salesrooms, Broadway and Sixty-second St.

"Built for those who use the best"



"Silent Six," Touring, fore-door, seats five, $3,750

"Built for those who use the best"

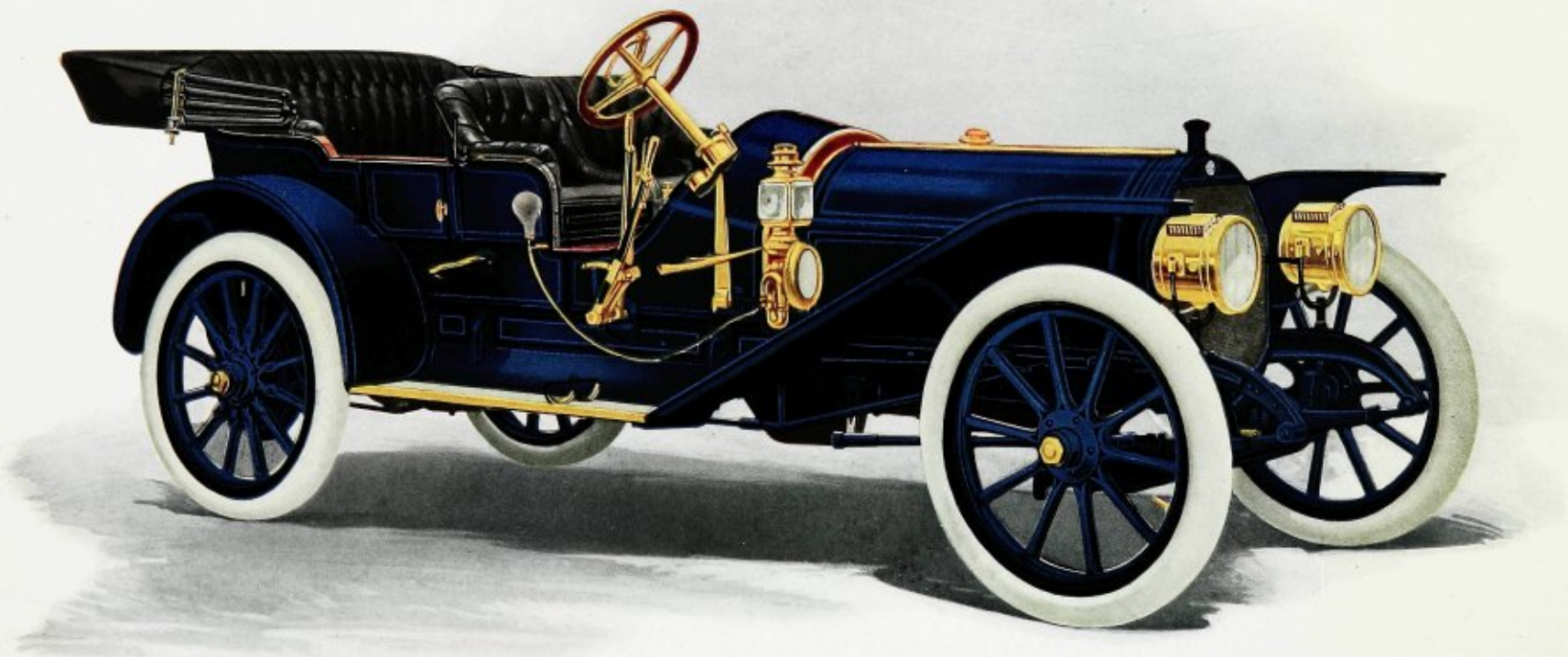
TWO YEARS AHEAD

While other makers were holding back to see what the high class automobile trade would want, we were investing hundreds of thousands of dollars in the development of our "Silent Six." We foresaw what would happen when automobile buyers learned to know the meaning of the overlapping stroke in the six-cylinder motor.

The "Silent Six" is a car of accomplishments. You know what to expect of it because of what it has accomplished repeatedly in every sort of public contest and in the private service of discriminating owners everywhere.

The Matheson "Big Four" which has been a consistent winner of first honors for years, is recommended to those preferring a luxurious, powerful seven-passenger car of four-cylinder type.

The "Silent Six" and "Big Four" Matheson cars are the result of fourteen years of successful development and manufacture of high grade automobiles exclusively.



"Silent Six" Toy Tonneau, seats four, $3,500

"Built for those who use the best"

THE "SILENT SIX"

The Matheson "Silent Six" is designed to compete mainly with the highest powered, highest priced six-cylinder cars of Europe and America. In competitive tests of every sort it has time and time again demonstrated its superiority. As for silence in operation it is unequaled. As for speed and dependability, its record of twelve first prizes in twelve consecutive contests is unparalleled, not to mention its WORLD'S RECORD for cars selling under $4,500, established in the 24-hour race, on the one-mile circular dirt track at Brighton Beach, N. Y., August 19-20, 1910—1178 miles in 24 hours.

As compared with all other six-cylinder cars selling at higher prices, we claim the following:

(1) It is the most SILENT in operation.

(2) It is the lightest in weight per horsepower.

(3) Its motor develops the most power in proportion to cylinder dimensions.

(4) It has the largest bearing surfaces in proportion to the cylinder dimensions of the motor.

(5) It is the most flexible—can throttle down to a rate of three miles per hour in high gear, with 3 to 1 gear ratio, without missing, without jerking and without slipping the clutch.

(6) Its mileage per gallon of gasoline is greater.

(7) Its mileage per gallon of lubricating oil is greater.

(8) Its mileage per set of tires is greater (owing to its lighter weight, perfect balance and multiple-disc clutch).

(9) It has the most reliable and indestructible clutch (multiple-disc).

(10) It has the strongest and most responsive, irreversible, full ball bearing steering gear.

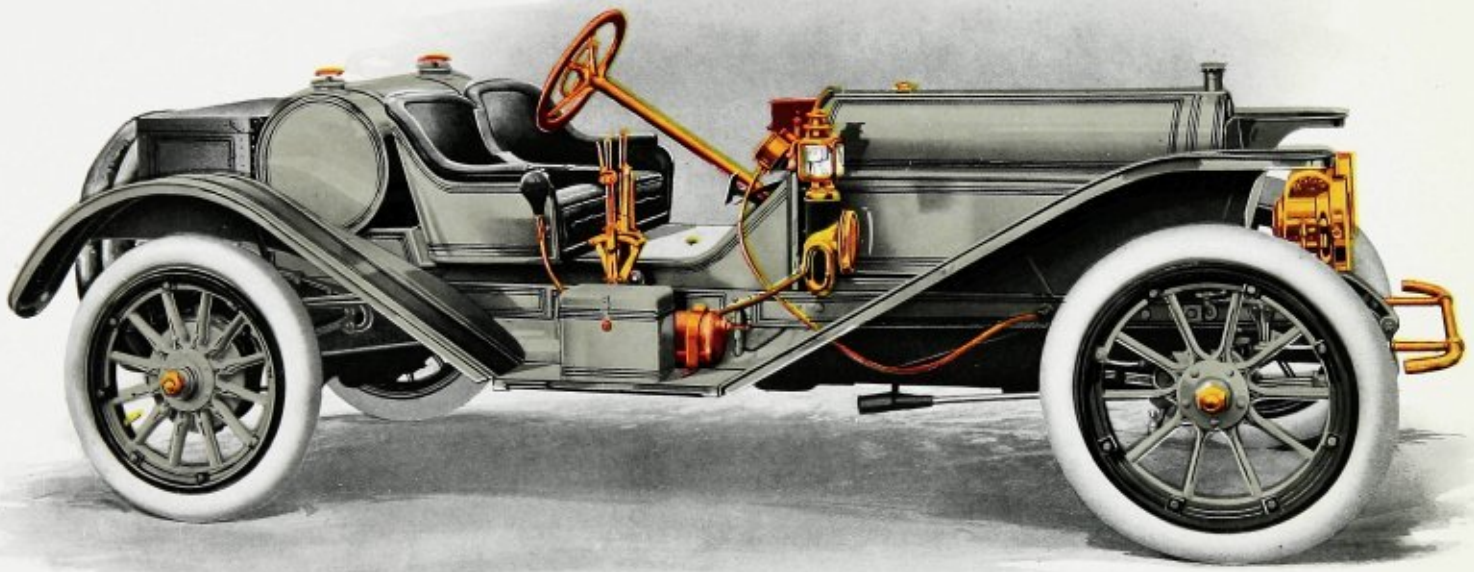
(11) It has the easiest riding qualities.

(12) It has the strongest transmission and rear axle construction.

(13) It has the best designed straight line drive through a silent, frictionless, double universal.

(14) It has the most dependable interlocking device in conjunction with selective transmission.

(15) It has the handsomest lines of design, the body is luxuriously upholstered and the whole car is superbly finished and equipped.



"Silent Six," Speedster, $3,500

"Built for those who use the best"

"SILENT SIX" DETAILS

Motor. 50 h.p., 6 cylinders, water cooled, vertical type, cylinders cast in pairs, with integral water jackets. Offset cylinders. The cooling of the motor is insured by a powerful fan back of the radiator.

Valves. Large inlet and exhaust valves in the head mechanically operated and interchangeable. A special device permits the removal of the valve cages by the undoing of only one nut for each cylinder.

Carbureter. Double jet. Fed by pressure. A throttle placed in the supply pipe, between the carbureter and the motor, is controlled by a foot lever and also by a small hand lever on the steering post, which may be operated independently of each other.

Ignition. Double, affording two entire independent systems. High-tension. Bosch 3-pole magneto with storage battery for starting and reserve. Two sets of spark plugs.

Cam Shaft. Cut from the solid bar, no pins or keys being used to fasten cams to shaft.

Crank Shaft. One piece forging. Two large discs (which form a part of the crank shaft) insures its perfect balancing. The flywheel is attached to the crank shaft by a flange of liberal proportions, forged integral with the shaft.

Control. The throttle and spark levers are located on top of the steering wheel, engaging with a sector which is fixed so as not to revolve with the steering wheel. An auxiliary throttle is operated by foot, independently of the throttle above the steering wheel. All gears (three speeds forward and one reverse) are operated by one lever, conveniently located at the right of the driver and next to the emergency brake lever.

Flywheel. Of liberal diameter and so designed as to contain the multiple-disc clutch case in its hub.

Crank Case. The crank case is of aluminum, of the box type, forming a solid pan from the radiator to the back of the flywheel, thus giving an easy access to all parts of the motor with full protection to the working parts of the motor. The lower section is the reservoir for the oil used in the auxiliary splash and lubrication of the main bearings, and is cast with compartment walls for each cylinder; it is removable for access to mechanism without disturbing any bearings or other parts.

Lubrication. Oil basin in the crank case is divided into three crank pits by ribs extending from the base of the well to the bearings. Each crank pit has an overflow to the oil well below, from which the oil is drawn by gear-driven gear pump forced through copper pipe to distributor and from there to engine gears, centre oil pit, and rear oil pit through sight feed on dash, overflowing back to well in the base, being filtered before being used again. The constant level splash system is supplied by gear pump. Capacity four gallons, sufficient for 1,000 miles.

Bearings. Anti-friction white metal boxes used in all bearings which are of extra large size.

Muffler. Exceedingly efficient and absolutely noiseless; provided with a cut-out.

Cooling System. Honeycomb radiator in front. The circulation of the water is effected by means of a powerful gear-driven centrifugal pump. Very large pipes are used.

Gasoline Tank. Suspended below the frame at the extreme rear; 25 gallons capacity.

Clutch. Multiple-disc, consisting of 49 saw-steel discs, affording a friction surface of 1,500 square inches. This clutch is practically indestructible, and is absolutely reliable. It runs in oil and is located in the hub of the flywheel.

Transmission. Combined with rear axle, selective type of sliding gear, having 3 speeds forward and 1 reverse, direct drive on the third speed. All shafts are mounted on imported annular ball-bearings. The gears and shafts are of the finest nickel steel specially treated. All gears run in oil bath. All gears are easily removed.

Gear Ratios. Toy Tonneau, 2¾ to 1; Touring Cars, (5 passenger), 3 to 1; Touring Car, (7 passenger), Limousine and Landaulet, 3¼ to 1.

Drive. Straight line shaft drive, thus affording the maximum efficiency from the motor to the wheels.

Frame. Pressed special steel of the drop type, of liberal dimensions, reinforced by trusses.

Springs. Semi-elliptical front, and full scroll elliptical rear, affording the maximum of comfort.

Axles. Nickel steel forgings; I-beam front, full floating rear.

Steering Gear. An entirely new design which has proven the finest steering gear on the market. Enclosed in dust proof case; very sensitive and quick to respond. It has ball-bearings and a worm of quadruple thread which makes the steering gear absolutely irreversible. Stops are provided so that the front wheels cannot strike the fore and aft steering connections. 18" steering wheel of especially neat design and attractive finish.

Wheel Bearings. Front, Timken roller; rear, annular imported ball-bearings.

Wheels. Front, 36 x 4 inches; rear, 36 x 4½ inches on open cars of 125½ wheel base. Front and rear 36 x 4½ inches on open cars of 135-inch wheel base. Rear wheels 37 x 5 inches on closed cars of either length wheel base.

Wheel Base. 5 passenger, 125½ inches; 7 passenger, 135 inches.

Brakes. Four brakes, two contracting brakes, operating on the outside of drums attached to the rear wheels, two internal expanding band brakes operating inside the drums.

Hood. Opens from either side; quickly removable.

Guards. Detachable; front guards have inner shield extending to the chassis frame.

Body. Bodies are of sheet steel, luxuriously upholstered, roomy and especially comfortable. In general, we have adopted the foreign body lines, which are universally recognized as unsurpassed for refined taste and beauty.

Equipment. Two large acetylene search lights and Prest-o-lite gas tank, 2 side and 1 rear oil lamps, horn, complete tool outfit, complete tire repair outfit, tire tools; tire carriers and straps, foot rail, coat rail, floor mats, baggage rack, oil gun, jack, tire pump and full mohair extension top complete with side, front and rear curtains and envelope for top when laid back. Shock absorbers are furnished on rear springs only of Limousines and Landaulets.

Painting and Upholstering Colors. Standard colors carried in stock for quick shipment are:

Touring cars, Matheson deep wine, blue and green, upholstered in black leather, dull finish.

Toy Tonneaus, deep blue with black leather or cream with green leather.

Limousines, Town cars and Landaulets, Matheson deep wine, blue and green, with whipcord or broadcloth upholstering in shades to harmonize.

Special colors and trimmings to order only and at extra cost.

PRICES

	Gear Ratio	135-inch Wheel base	125½-inch Wheel base
With Touring body, seats five, two-door	3 to 1		$3,500
" " " " " fore-door	3 to 1		3,750
" " " " seven, fore-door	3¼ to 1	$4,000	
" Toy Tonneau body, seats four, hooded dash	2¾ to 1		3,500
" Speedster body, seats two	2¾ to 1		3,500
" Limousine, or Landaulet body, seats seven	3¼ to 1		4,700
" Town car body, seats six	3¼ to 1		4,700
Chassis only (without body, or fenders or top but with tires and balance of standard equipment)		3,600	3,250
Separate body—Limousine Town car or Landaulet			1,450
Painting, special colors (usually 30 days delay) extra		50	50

"Silent Six," Town Car, seats six, $4,700

"Silent Six," Limousine, seats seven, $4,700

"SILENT SIX" AWARDS

New York-Atlantic City, 312 Miles Reliability Contest, May 10-11, 1910. Perfect score.

National Hill Climb, Giant's Despair Mountain, Wilkes-Barré, Pa., June 14, 1910. First prize in club event, breaking all previous stock car records. Time 1 minute 46⅝ seconds, rate of 42 miles an hour up a circuitous course of 6,000 feet, the grades ranging from 10% to 25%.

Atlanta to New York, 1063 Miles Road Tour, June 6-13, 1910. Perfect score over roads hub deep with mud and water during six days and nights of continuous raining, and, the same car started the very next morning, at six o'clock, June 14, in the.

New York-Montauk Light, 378 Miles Reliability Contest, winning another perfect score.

Baltimore, Md., Hill-Climbing Contest, June 18, 1910. Two First Prizes. Best time for all stock classes. Lowered all previous stock car records for the course.

Port Jefferson, N. Y., Hill-Climbing Contest, June 26, 1910. First prize, breaking all previous stock car records in its class for the course.

Towanda, Pa., Hill-Climbing Contest, June 26, 1910. First prize, breaking all previous stock car records for the course.

Birmingham, Ala., Race Meet, (circular mile track), June 9 1910. Amateur established new stock car amateur record of one mile in 59 seconds.

Cincinnati, Ohio, Race Meet, June 10, 1910 (Latonia circular mile track). First prize in 5-mile amateur event.

Munsey Historic Tour, August 16-27, 1910. 1,550 miles. Perfect score.

Burlington, Ia., Hill-Climbing Contest, December 4, 1910. First prize, establishing a new record for the course.

Brighton Beach Motordrome, N. Y., 24-hour race, August 19-20, 1910. World's record of 1178 miles for stock cars under $4,500 on one-mile circular dirt track. All during this terrible gruelling grind of 24 hours continuous running, not a single repair, replacement or adjustment of any mechanical part was made (except renewing five spark plugs). And at the conclusion of the race it was unnecessary to tighten a single nut, bolt or screw, or to repair, replace or adjust any part, not even to take up a bearing—an unparalleled demonstration of dependability.

Indianapolis Motor Speedway, Ind., September 5, 1910. Second place in 5-mile stock car handicap, twenty contestants. Time, 3 minutes 46⅝ seconds, rate of 76½ miles an hour.

Indianapolis Motor Speedway, Ind., Sept. 5, 1910. Second place in 5-mile stock car event.

Washington, D. C., Hill-Climbing Contest, Aug. 29, 1910. Three first prizes, establishing new records for the course.

New York-Danbury Endurance Run, Nov. 29-30, 1910. Perfect score.

Guttenberg, N. J., Race Meet, November 24, 1910. Second place in ten miles free-for-all, against eleven contestants.

"BIG FOUR" AWARDS

World's Record, carrying seven passengers one mile in 50⅝ seconds (rate of 71 miles an hour), Atlantic City Race Meet, September 5, 1906.

Match Race with English-Daimler, for purse of $500.00, September 4, 1906, Atlantic City Race Meet, one mile in 59⅘ seconds.

New York-Chicago Mid-Winter Record, December 23-30, 1906.

Philadelphia-Harrisburg Mid-Winter Endurance Contest, January 1-2, 1907. The Matheson was the only car out of twenty-eight contestants to finish with a perfect score.

New York-Boston Winter Record, March 15, 1907.

Wilkes-Barré Hill-Climbing Contest, May 30, 1907, "News" Gold Medal for best time of the day in all gasoline classes per horse-power pound.

Wilkes-Barré Hill-Climbing Contest, May 30, 1907, Board of Trade Cup; new record for gasoline cars, 1:59⅘ against the greatest number of contestants ever recorded at any automobile meet in America up to that time.

Wilkes-Barré Hill-Climbing Contest, May 30, 1907, Gold Medal first prize in Free-for-all event, covering a course of 6,000 feet ranging from 10% to 25% grade in 1:59⅘.

St. Louis Twenty-four Hour Track Race, July 3-4, 1907, second place against a field of ten contestants.

Chicago Twenty-four Hour Track Race, July 13, 1907, second place.

Long Island Automobile Club Endurance Run, two days, 130 miles, May 30-31, perfect score.

New Jersey Automobile and Motor Club Endurance Run, three days, 415 miles, June 1, 2, 3, 1907; perfect score, carrying eight passengers.

Automobile Club of America Sealed Bonnet Contest, four days, June 19-22. Two Matheson cars finished with perfect scores, one covering 600 miles and the other 700 miles.

Albany Automobile Club Endurance Run, 700 miles, perfect score. Only three out of the eighteen contestants finished with perfect scores.

Williamsport, Pa., Hill-Climbing Contest, July 13, 1907. Two Matheson cars won first and second places against 11 contestants, both cars establishing new records for the course.

Morris Park, N. Y., One Hour Record of 59 miles in 60 minutes on a circular track September 26, 1907.

Match Race, 5 miles, Morris Park Track, N. Y., September 26 1907.

One-half Mile in 17 Seconds (rate of nearly 106 miles an hour) at Atlantic City Race Meet, September 26, 1907.

Newark, N. J., 24-Hour Endurance Contest, November 15-16, 1907, covering a course of 472 miles with 6 passengers in which the Matheson started first and finished first with an absolutely perfect score against a field of 22 contestants.

Philadelphia-Allentown 172 Miles Mid-Winter Endurance Contest, January 1-2, 1908. Two Matheson cars finished with absolutely perfect mechanical scores against a field of 42 contestants.

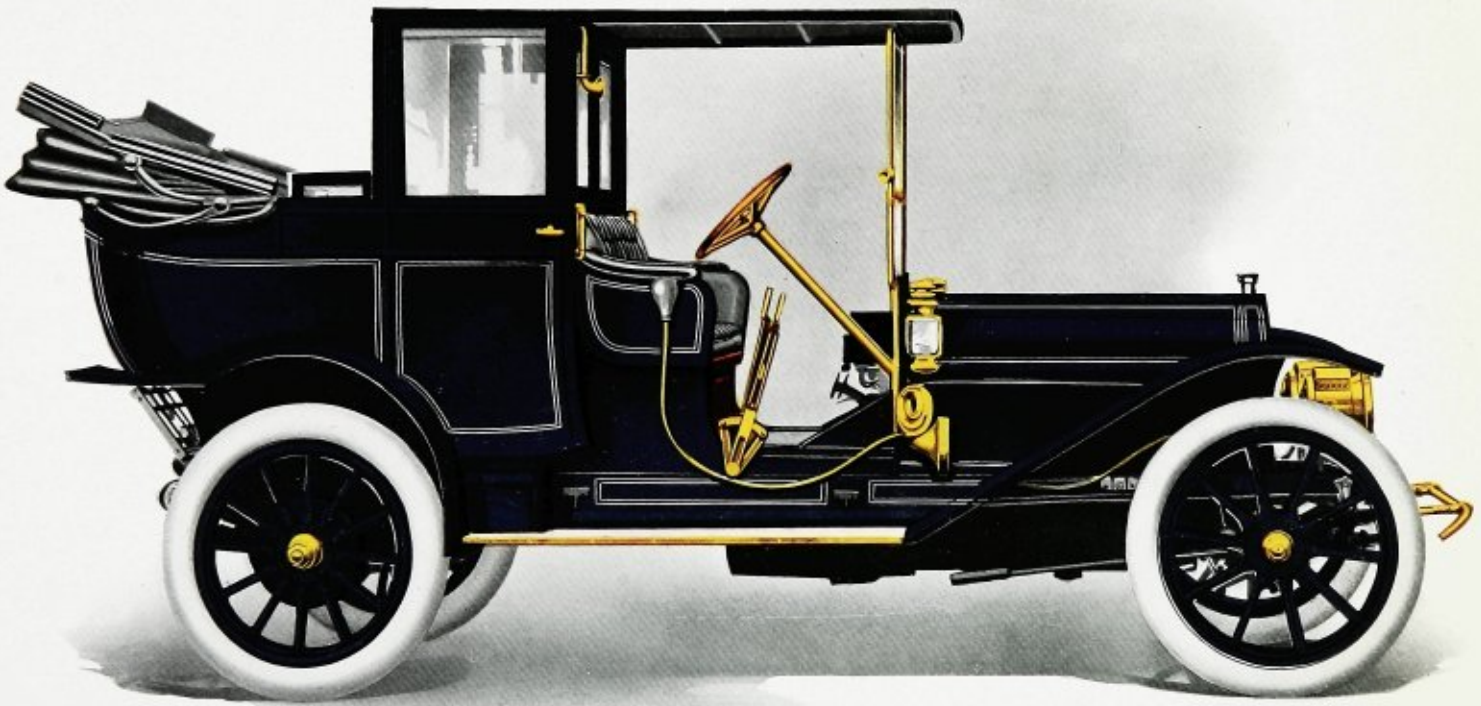
Philadelphia-Wilkes-Barré 300 Miles Mid-Winter Endurance Contest, January 1-2, 1909. Three Matheson cars finished in first, second and third time places against a field of 32 contestants. In this contest Matheson car No. 7, was awarded the MacDonald and Campbell $600 trophy.

Binghamton, N.Y. Automobile Club 1907 Annual Endurance Run, 500 miles, perfect score.

Washington-Hagerstown 168 Miles Endurance Run, May 15, 1909. Two Matheson stock cars entered by private owners finished in first and second places, winning the "Washington Post" Cup against a field of 18 contestants.

New York-Boston 247 Miles Endurance Run, March 11, 1909. Two Matheson stock cars entered—both finished with perfect scores.

One Gallon Efficiency Contest, May 11, 1909. A regular stock 4-cylinder Matheson touring car carrying 7 passengers covered a distance of 15⅝ miles through New York City traffic and over Long Island roads on one gallon of gasoline, defeating 16 other contestants.



"Silent Six," Landaulet, seats seven, $4,700

"Built for those who use the best"

THE SECRET OF SILENCE

Everyone who has seen the Matheson "Silent Six" wonders how such extreme silence could be obtained in a gasoline motor. The explanation is simple. Given a gasoline motor that is silent in operation when new, it will stay reasonably silent *if there be no wear*. The problem, then, is to eliminate the *causes* of wear, which are mainly these:

(1) Inaccurate workmanship. (Triple inspection and working to 1/1000 of an inch accuracy in dimensions insures precise workmanship in the "Silent Six".)

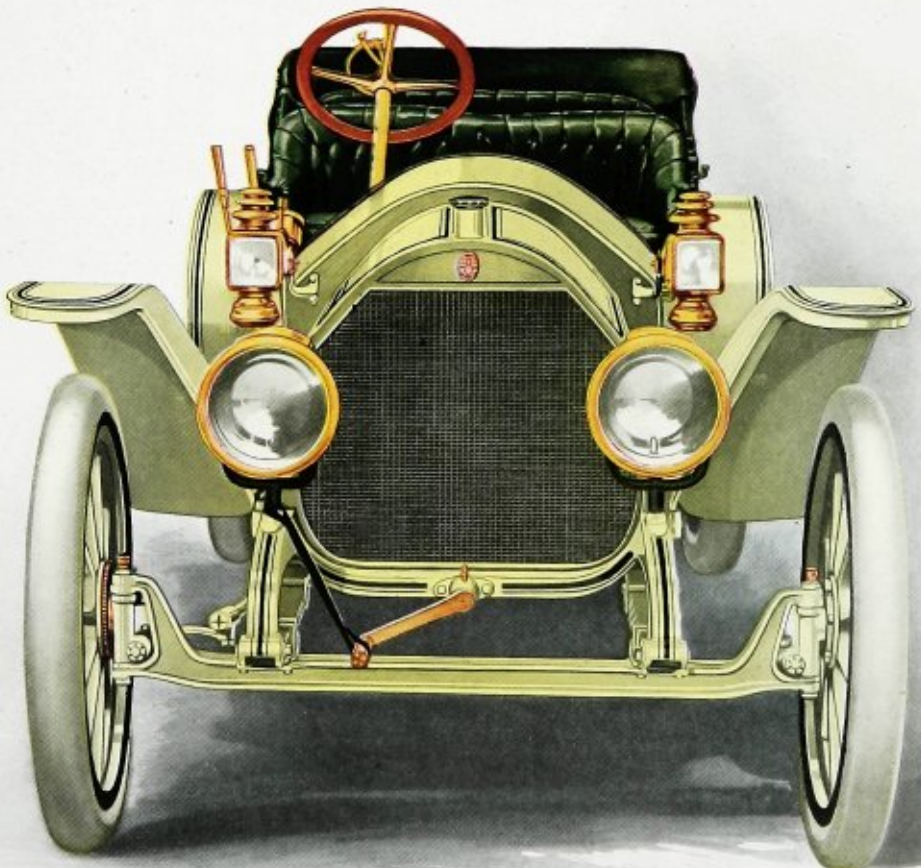
(2) Undue heat. (The "Silent Six" has overhead valves with an *active* circulation of water all about the most compact possible combustion chambers.)

(3) Inadequate lubrication. (Pump and splash feed is used in the "Silent Six," 4½ gallons of oil being contained in the engine base.)

(4) Undersized bearing surfaces. (In proportion to cylinder dimensions, the bearing surfaces in the "Silent Six" are the largest to be found in any six-cylinder car.)

(5) Unsuitable materials. (All materials used in the "Silent Six" bearings and other parts are subjected to rigid laboratory tests to insure the highest possible quality.)

It is especially interesting to observe that the very conditions which produce silence in a motor car, are also the conditions which result in the minimum cost of mechanical upkeep (because wear is minimized) and in the greatest economy of fuel and oil consumption.



"Silent Six," Toy Tonneau

CONSTRUCTION

Valves in the cylinder heads have always been characteristic of Matheson construction. For many years this system was used in no other car. Today, however, its superiority over the side pocket valve system is recognized by a very large proportion of the foremost automobile makers of both continents. For example, in the last Grand Prize race in France, the motor of each and every car participating was built with valves located in the cylinder heads.

The prime advantages of locating the valves in the cylinder heads, in place of in pockets cast in the cylinder sides, are:

(1) Only about one-half the surface is exposed to the heat of the explosion.

(2) The entire explosion chamber is water-jacketed.

(3) The valve cage seats are effectively water-jacketed, thus preventing the warping of the valve cage seats or the scaling of the valves and consequent loss of compression and uniform efficiency.

(4) The explosive is all directly over the piston, consequently no appreciable time is lost in igniting the whole explosive charge after the spark is introduced directly into the center of it, therefore, it is unnecessary to govern the speed of the motor by advancing or retarding the sparker lever.

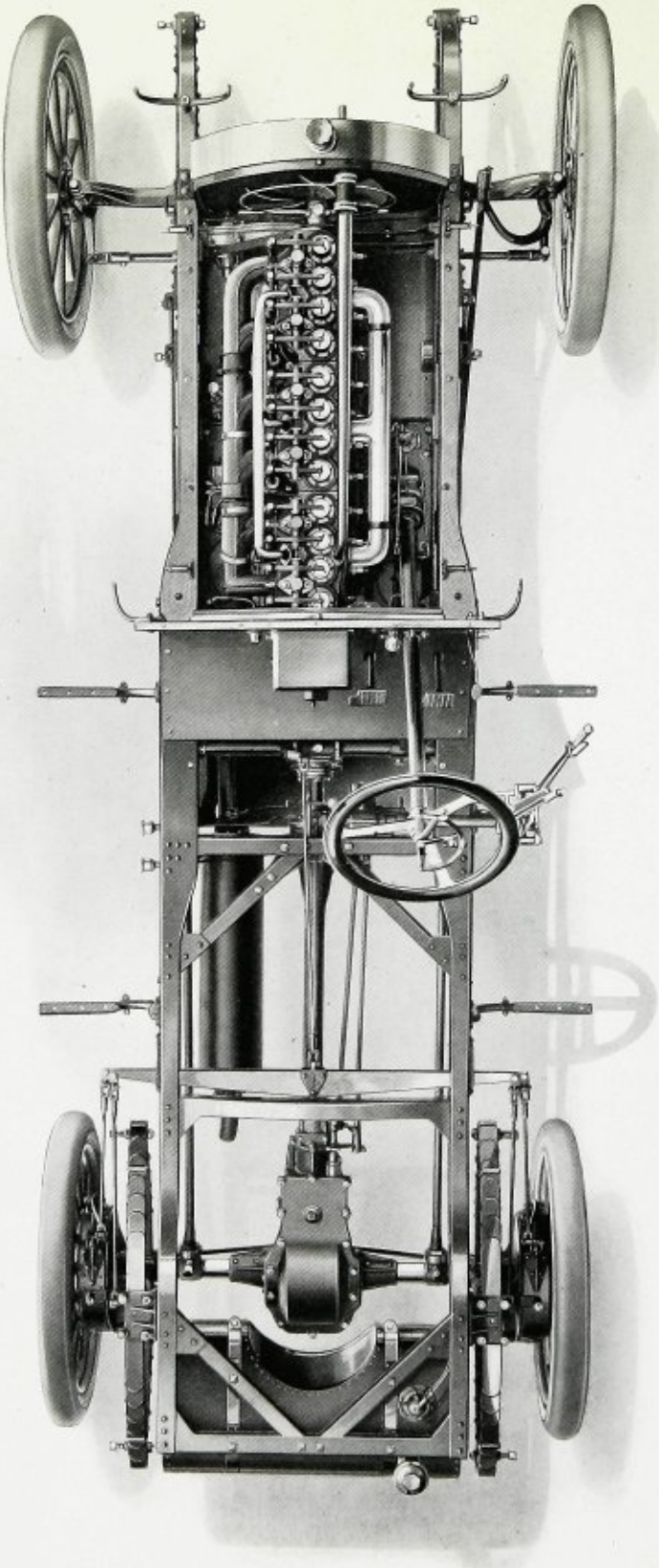
(5) Heat, which is the one most destructive element in a gasoline motor, is successfully eliminated, hence the life of the motor is enhanced, due to the absence of the warping and distorting of cylinder walls, valve stems, valves, etc., caused by heat.

(6) Extreme simplicity and accessibility.

Double ignition jump spark is employed in which two independent sets of spark plugs are used, one set having as its current source a 6-magnet high-tension Bosch magneto and the second seta6-volt 80-ampere hour storage battery, which also provides means for self-starting.

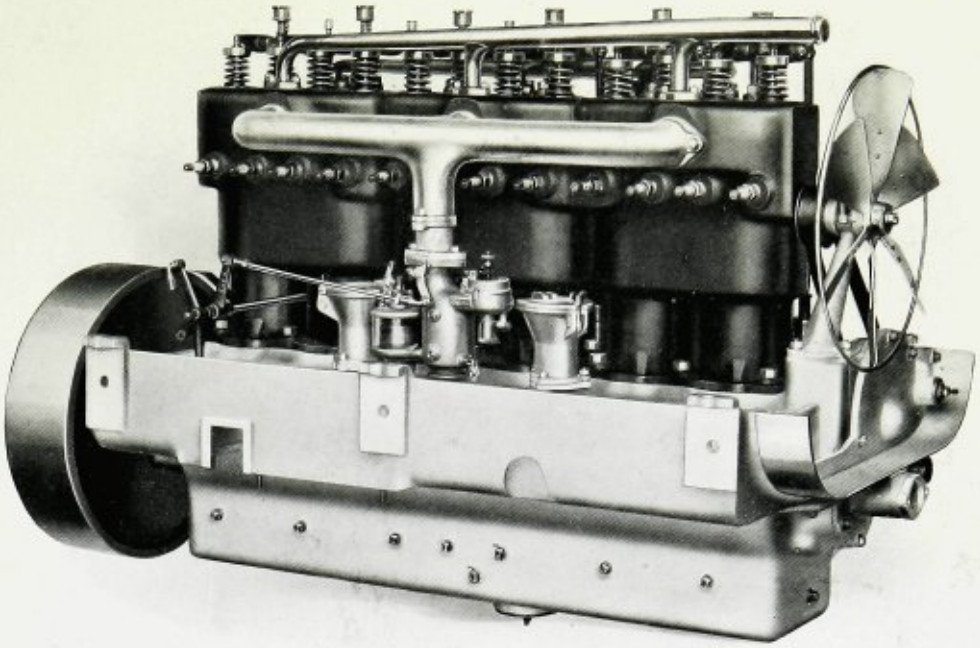
Not only has the most approved system of lubrication been employed, but in order to reduce bearing wear to the minimum, all bearings have been made larger than the corresponding bearings in any other motor of like cylinder dimensions and these bearings are kept flooded with oil by a particularly efficient lubricating system. The oil basin in the crank case is divided into three crank pits by ribs extending from the base of the well to the bearings. Each crank pit has an overflow to the oil well below, from which the oil is forced through copper pipe to a distributor thence to engine gears, centre oil pit, and rear oil pit through sight feed on dash, overflowing to well in the base. It is filtered before being used again. A pocket of oil is constantly maintained over each main bearing. The constant level splash system is supplied by gear pump. Capacity four gallons.

This type motor is the costliest of all types to construct, but it is also the most efficient and the most economical in oil and fuel consumption and in maintenance cost.



"Silent Six" Chassis

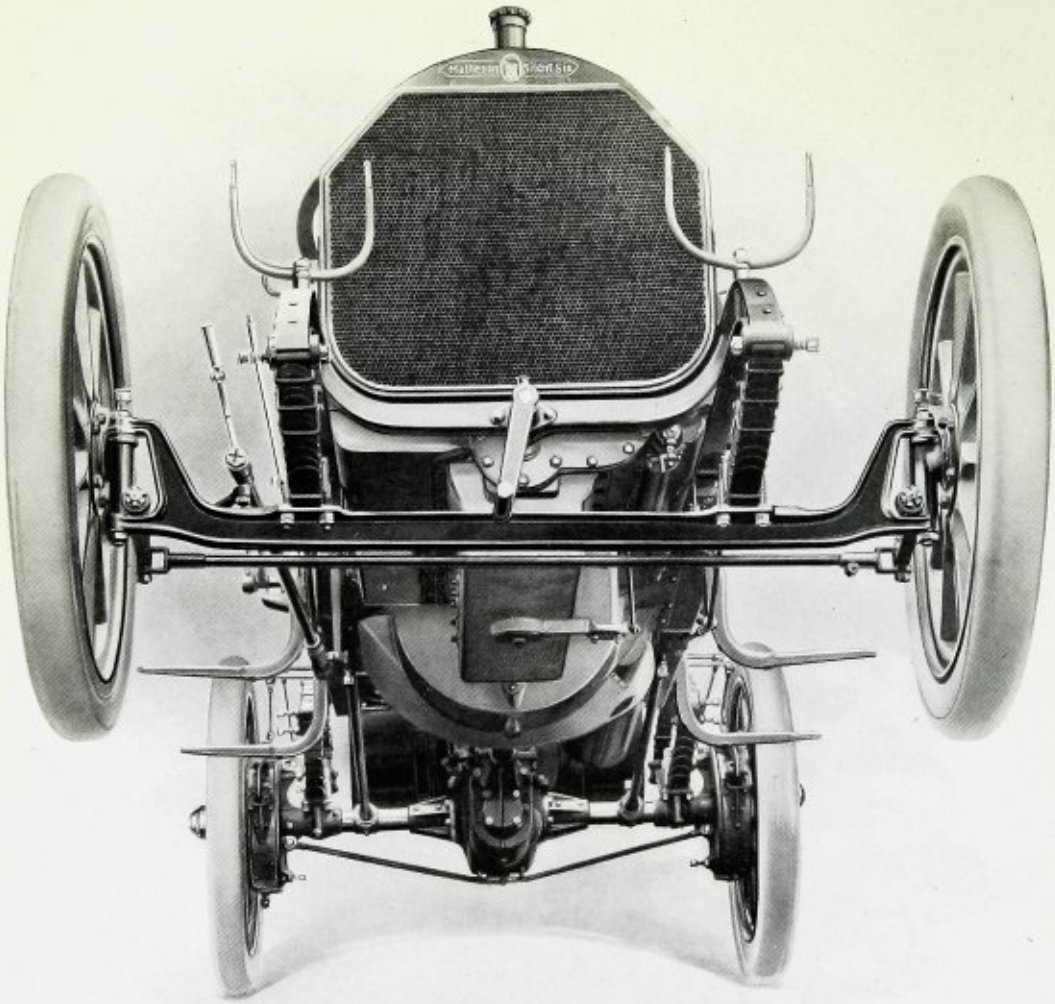
"Built for those who use the best"



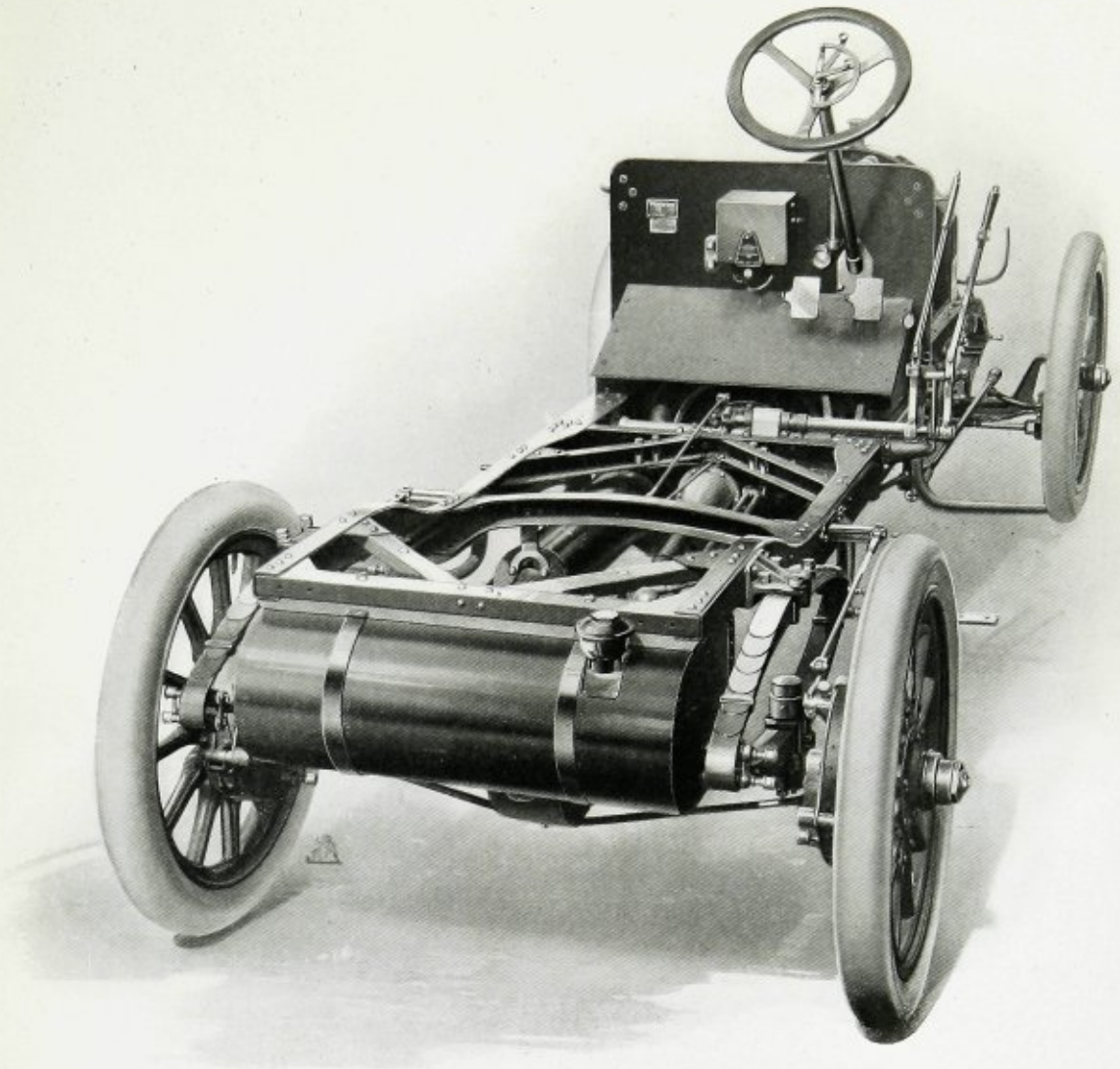
The carbureter is the double-jet type, which enables the quantity of explosive mixture to be varied without affecting its quality. Therefore, this type carbureter, in conjunction with the system of valves in the cylinder heads makes it possible to throttle the motor so low as to enable the car to travel at a rate of three miles an hour, while in high gear, with perfect ignition in all cylinders. The great value of this extreme flexibility is appreciated in city traffic, where constant gear changes are unnecessary in operating the "Silent Six."

The gasoline tank has a capacity of twenty gallons. It is located in the safest place, below the frame at the extreme rear of the car. The gasoline is fed to the carbureter by pressure from the exhaust, so does not depend upon gravity, thus eliminating all trouble in ascending severe grades. This system enables the lead from the carbureter to the explosion chambers of the cylinders to be reduced, which is a strong advantage over the gravity system which requires the carbureter to be placed at the lowest possible point and, consequently, too great a distance from the explosion chambers for the best results.

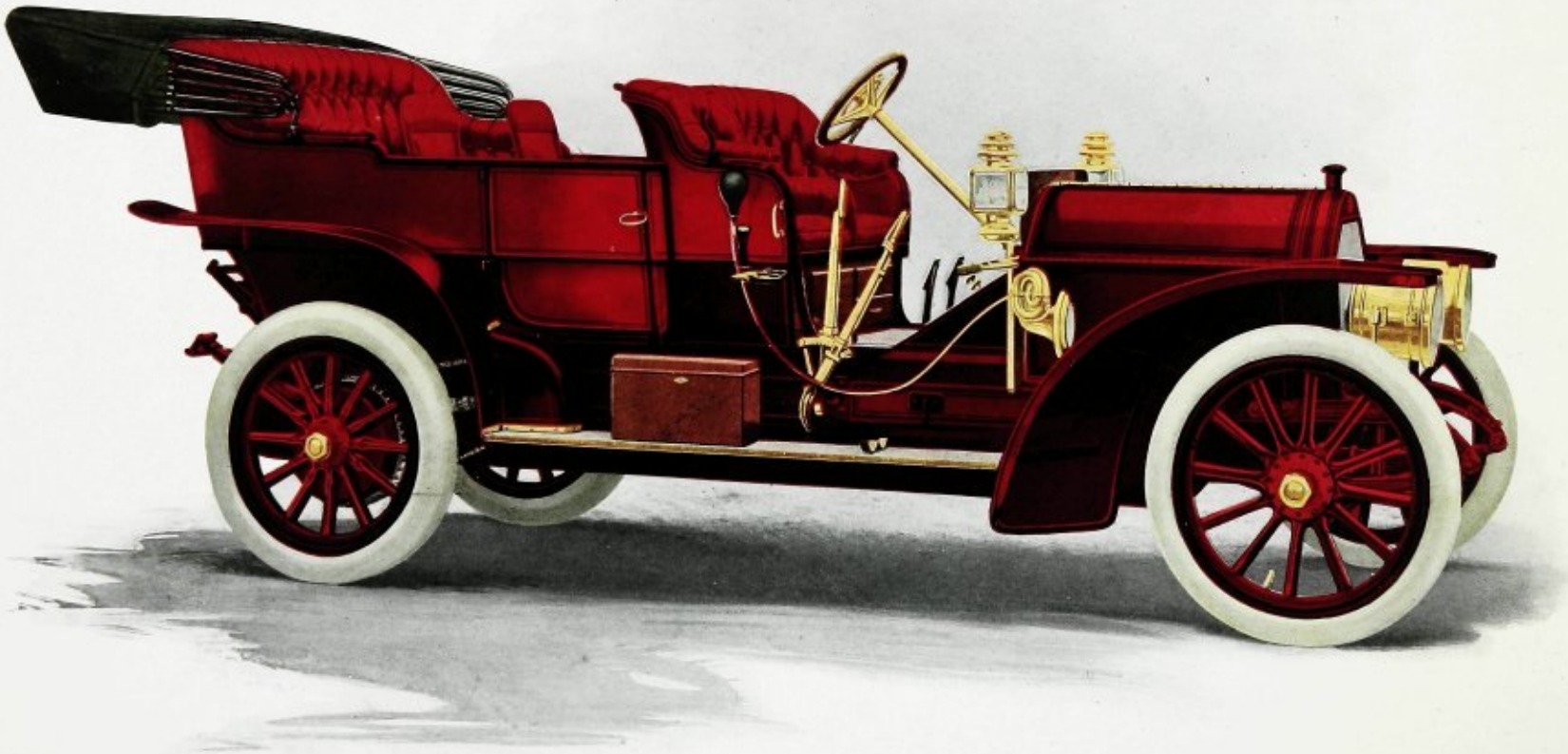
All working parts of the motor are protected from road drift by the aluminum web of the motor base, which extends clear to the frame side members. The motor bearings and the flywheel are protected by an aluminum casing, which is bolted to the motor base, and which also serves as the oil retainer for the splash lubrication.



No economy has been exercised in the selection of the highest grades of materials for each and every part, nor in the processes of manufacture necessary to produce all working parts to accurate dimensions, in order to make like parts strictly interchangeable. Furthermore, irrespective of manufacturing cost, only the most approved features of construction have been incorporated in this design: such as, valves located in the cylinder heads, exhaust and intake pipes located on opposite sides of motor, Bosch 6-magnet high-tension magneto in conjunction with double ignition system, double-jet carbureter, pressure fed gasoline from tank suspended to the rear of frame, motor cylinders cast in pairs, both hand and foot throttles, pump and splash



lubrication, multiple-disc clutch, selective transmission, interlocking device to prevent error in shifting gears, straight line shaft drive, drop frame, scroll elliptic springs, honeycomb radiator even with front axle, etc., etc. Compare these features, one by one, with the corresponding features of other Sixes (not to mention the costly material, and extreme accuracy of workmanship characteristic of Matheson construction), in order to better understand why the Matheson "Silent Six" is easily the best car of its type obtainable. See page 28 for description of multiple-disc clutch, which is employed in both four- and six-cylinder Matheson cars. See page 9 for six-cylinder car details.



"Big Four," Touring, seats seven, $4,000

"Built for those who use the best"

THE "BIG FOUR"

This car is designed to compete mainly with the finest and highest priced imported cars.

Its construction embraces throughout the best features of the most popular French, German, and Italian machines. In the purchase of such a car, the element of uncertainty is eliminated, for the reason that its thorough reliability and constancy in severe service have been put to the test for many years past, by hundreds upon hundreds of the best known and most competent automobile purchasers throughout this country, to whom we are indebted for the following statistics:

Average mileage per Matheson "Big Four"	12,840 miles
Average repair expense per car for 12,840 miles traveled (exclusive of tires and batteries)	$36.41
Equivalent to $\frac{2.8\,3}{1000}$ths of one cent. per each mile of service.	
Average miles per gallon of gasoline	11 miles
Average miles on original set of tires	4,076 miles

The above figures indicate what may be reasonably expected of every Matheson "Big Four," year after year, for many years. It is easily the most indestructible car on the market and the most economical to maintain. It is impossible to buy more complete or more luxurious furnishings than comprise the standard equipment of every Matheson "Big Four."

"Big Four," Landaulet, seats seven, $4,500

"Big Four," Limousine, seats seven, $4,500

"Built for those who use the best"

"BIG FOUR" DETAILS

Motor. 50 h.p. four cylinders, water cooled, vertical type; individual cylinders with integral water jackets. Gears are encased. Cylinders, pistons and piston rings are ground.

Carbureter. Multiple-jet type, furnishing the correct mixture at all speeds. Gasoline is forced into the carbureter by a gear-driven pump. A throttle placed in the supply pipe between the carbureter and the motor is controlled by a foot button and also by a small hand lever on the steering post, which may be operated independently of each other.

Ignition. Option of low or high tension (dual). Bosch magneto geared direct to the motor.

Control. The throttle and spark levers are located on top of the steering wheel, engaging with a sector which is fixed so as not to revolve with the steering wheel. An auxiliary throttle is operated by foot, independently of the throttle above the steering wheel. All gears (four speeds forward and one reverse) are operated by one lever, conveniently located at the right of the driver and next to the emergency brake lever.

Valves. Inlet and exhaust valves in the head, mechanically operated and interchangeable. They seldom require regrinding.

Cam Shaft. Nickel steel cut from the solid, no pins or keys being used to fasten cams to shaft.

Crank Shaft. Nickel steel, turned from the solid forging; has five bearings. On its flywheel end is a flange of liberal proportions, which is also a part of the forging itself, and to which is bolted the flywheel, castellated nuts being used.

Flywheel. Of liberal diameter and so designed as to contain the multiple-disc clutch case in its hub. The propeller blades or vanes which form its spokes, constitute the fan which draws the air through the radiator and over the engine.

Transmission. Selective type of sliding gear, having four speeds forward and one reverse. Direct drive on the fourth speed. All shafts are mounted on imported Hess-Bright ball bearings. The gears and shafts are of the finest nickel steel specially treated. All gears run in oil bath.

Drive. Two side chains are driven by interchangeable sprockets and drive through the rear sprockets, which are cast integral with the emergency brake drums, which are bolted to the rear wheels.

Sprockets. The driving sprockets are bolted to flanges on the jack shaft and may be readily removed. They are interchangeable. Ball and socket joints provide universal connections with the differential, thus eliminating all torsional strain on the sprocket shafts. The sprocket shafts are also mounted on imported Hess-Bright ball bearings. The rear sprockets are cast integral with the steel brake drums, which are bolted through the spokes of the rear wheels.

Frame. Pressed steel, bottle neck type. All cross members, reinforcing plates and spring hangers are permanently secured by rivets.

Springs. Front, 35 inches; rear, 52 inches.

Axles. I-beam type, front and rear. Nickel steel forgings.

Steering Gear. Worm and sector type, enclosed in dust-proof case; very sensitive and quick to respond.

Steering Knuckles. Nickel steel, set very close to the hubs of the front wheels, making steering very easy. Mounted on imported Hess-Bright ball bearings.

Crank Case. Aluminum, divided vertically between the cylinder bases by solid walls which support the middle bearings of crank shaft. Upper section forms cylinder support and support for the main bearings. The lower section is the reservoir for the oil used in the auxiliary splash lubrication of the main bearings, and is cast with compartment walls for each cylinder; it is removable for access to mechanism without disturbing any bearings or other parts.

Bearings. Anti-friction bearing bronze boxes used in every bearing except where annular ball bearings are used.

Lubrication. Positive, automatic, force, multiple, sight feed. Starts and stops automatically with the engine. Auxiliary splash lubrication is afforded the main engine bearings in the lubrication crank pit.

Muffler. Exceedingly efficient; provided with a cut-out.

Cooling System. Honeycomb radiator in front. The air is drawn through the cooler tubes by means of the vanes or fan blades in the flywheel. The circulation of the water is effected by means of an absolutely reliable gear-driven gear pump.

Gasoline Tank. Heavy copper, suspended below the frame at the extreme rear; 30 gallons capacity. A gear-driven pump supplies the carbureter with gasoline.

Clutch. Multiple-disc, consisting of 51 discs, affording a friction surface of 1,500 square inches. This clutch is practically indestructible and is absolutely reliable. It runs in oil and is located in the hub of the flywheel. There is no other type of clutch equally efficient.

Wheels. Front, 36 x 4 inches; rear, 36 x 5 inches.

Wheel Bearings. Imported Hess-Bright annular ball bearings.

Wheel Base. 128 inches.

Tread. 56½ inches.

Brakes. Four brakes in all. Two are contracting asbestos lined brakes operating on drums attached to differential (sprocket) shafts, operated by foot pedal. Two are internal expanding clutch brakes of bronze, placed in the sprocket drums bolted to the rear wheels, protected from dust by an aluminum shield and operated by emergency brake lever.

Hill-Pawl. Consists of a simple pawl operating in the rear sprocket teeth; this device enables the car to be stopped on up-grade without recourse to the brakes.

Dust and Mud-proof Casing. Sufficiently strong to withstand the roughest usage. It extends from the front of the car to the rear of the transmission case, protecting all working parts from dust and mud.

Hood. Opens from either side; quickly removable.

Guards. Detachable; guards have inner shield extending to the chassis frame.

Equipment. Two large acetylene searchlights and generator, 2 side and 1 rear oil lamps, 1 horn, 1 complete tool outfit, 1 complete tire repair outfit, tire tools, tire carriers and straps, coat rail, foot rail, floor mats, 2 auxiliary seats in tonneau and baggage rack.

Body. Aluminum, luxuriously upholstered in genuine hand-buffed leather, exceptionally roomy and comfortable. In general we have adopted the foreign body lines, which are universally recognized as unsurpassed for refined taste and beauty.

Painting and Upholstering Colors. Standard colors carried in stock for quick shipment are:

Touring cars, solid deep carmine body, fenders, hood, radiator and running gear; striping black. Leather, choice of deep red or black; also, solid deep blue body, fenders, hood, radiator and running gear; striping one quarter inch wide lighter blue, bordered on either side by fine line old gold. Leather, black.

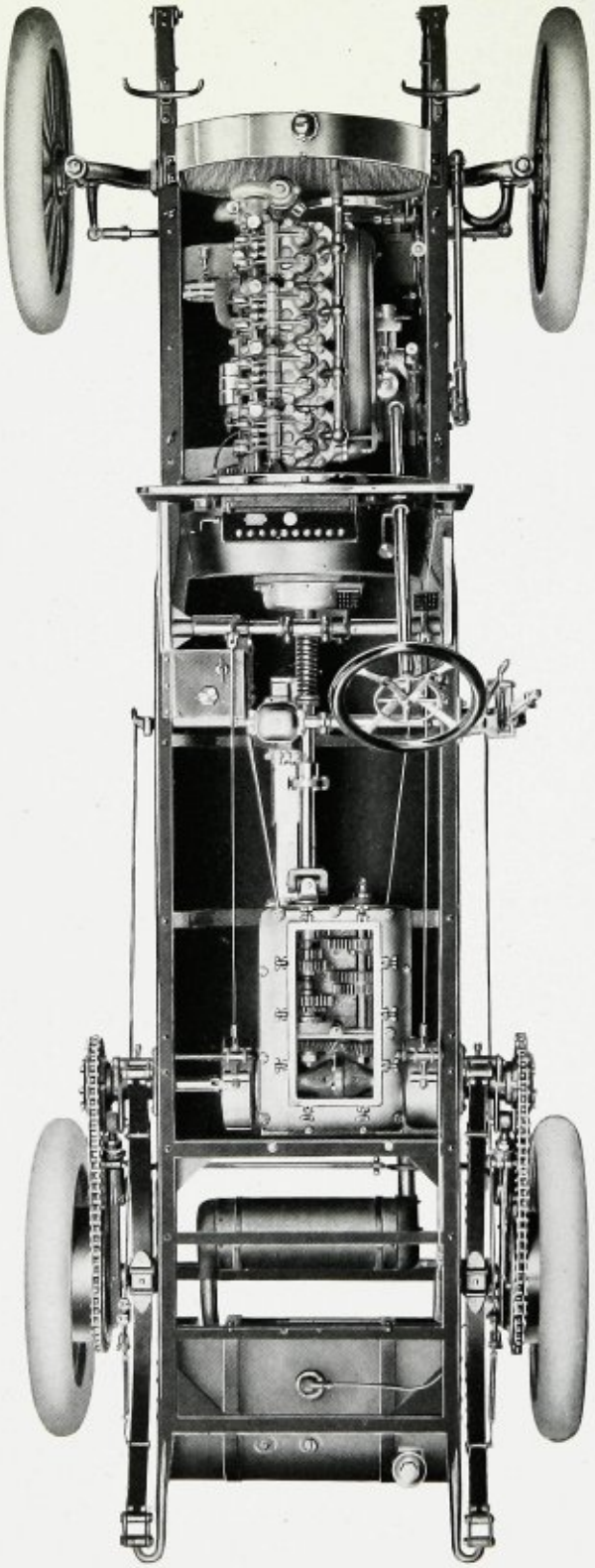
Toy Tonneaus, solid deep blue body, fenders, hood, radiator and running gear; striping one quarter inch wide lighter blue, bordered on either side by fine line old gold. Leather, black; also, solid Valentine cream body, fenders, hood, radiator and running gear; striping black. Leather, medium deep green.

Limousines and Landaulets, choice of solid deep green, wine, blue or brown. Upholstering, whipcord in Limousines and morocco leather in Landaulets of shades to harmonize with body colors.

PRICES

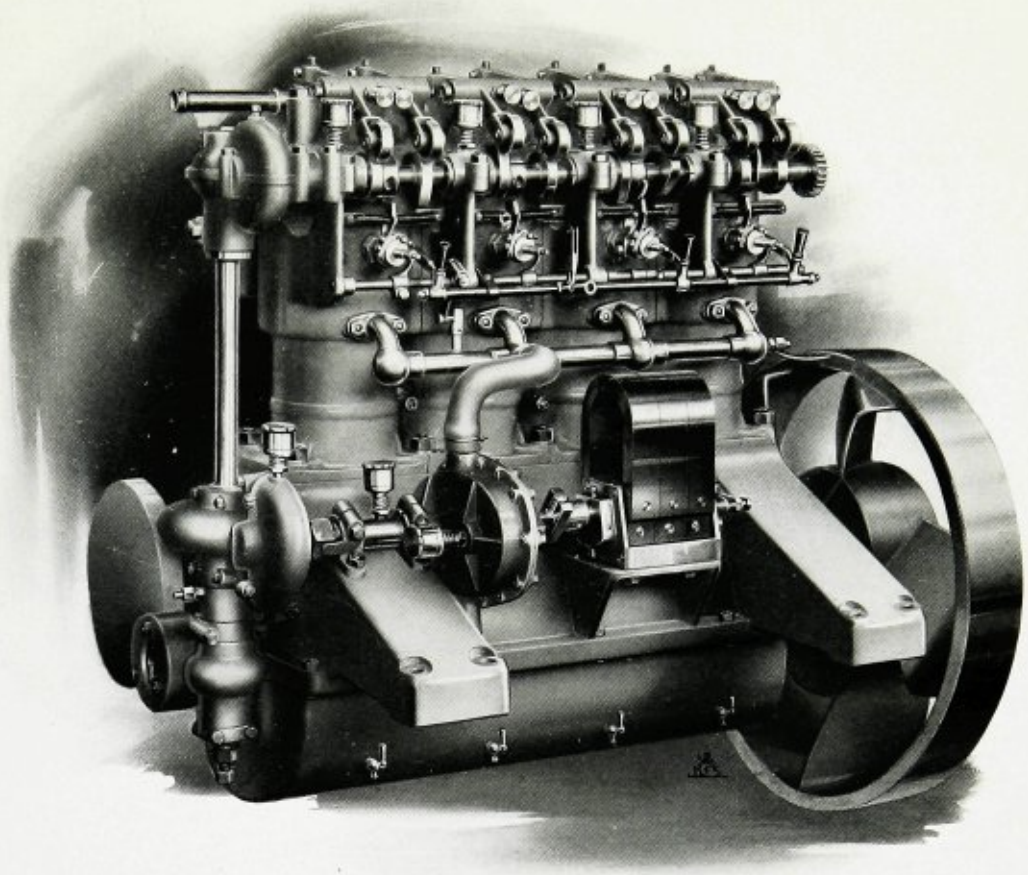
(All models are 50 h.p.)

Touring car (seats seven), page 20 ..... $4,000
Limousine (seats seven), page 22 ..... $4,500
Landaulet (seats seven), page 22 ..... $4,500



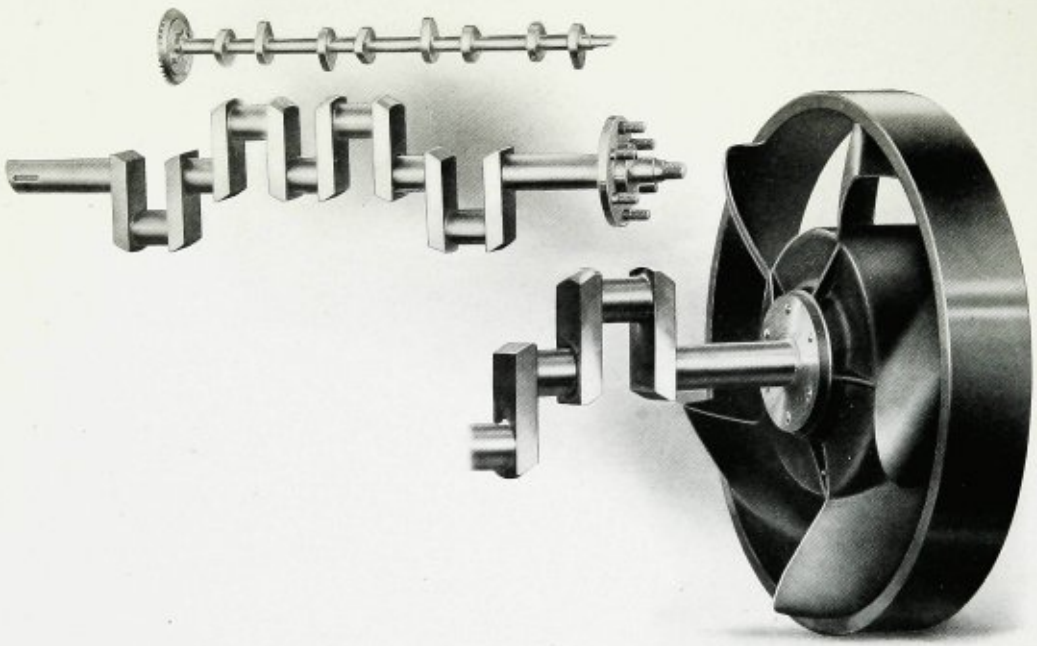
"Big Four" Chassis

"Built for those who use the best"



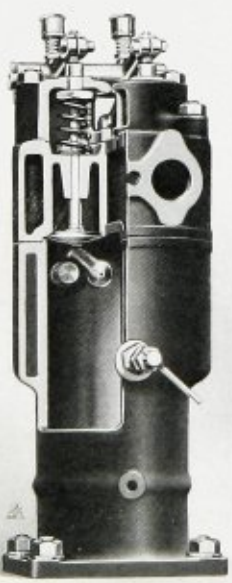
The "Big Four" motor differs from the "Silent Six" motor mainly in that the ignition is by a particularly efficient low tension system, using Bosch magneto, geared direct to the motor. Only one main wire is needed to carry the current to all four cylinders. The motor can be started on the magneto by cranking, without a battery or coil, but eight cells and coil are connected for starting the motor and as reserve current source. Jump spark dual ignition with high tension Bosch magneto is optional.

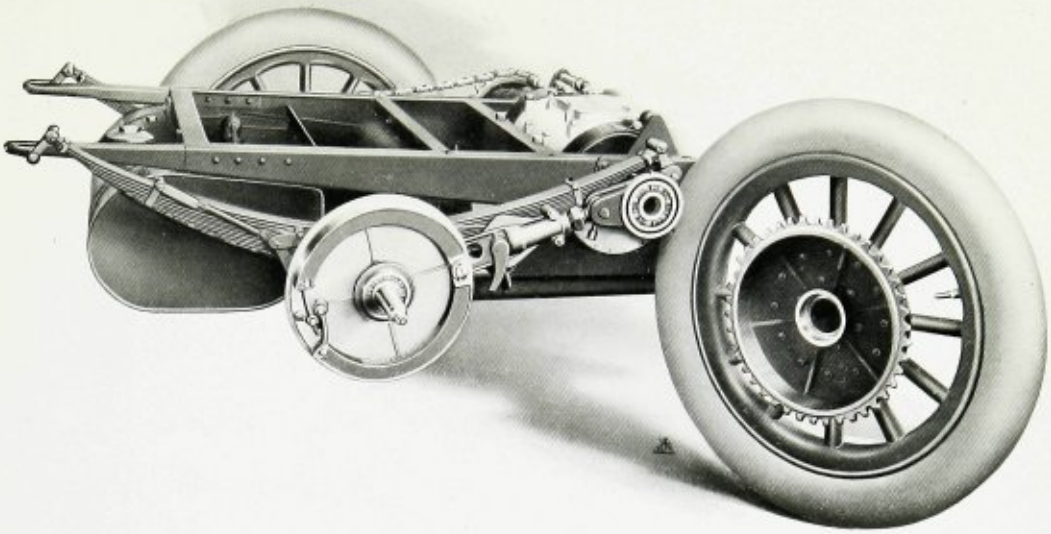
The valves, both inlet and exhaust, are located in the cylinder heads. They seldom require regrinding, because they cannot heat to the point of



scaling. It is obvious, therefore, that these valves are permanently tight, thus giving the engine uniformly greater power than is possible in other types of engines requiring regrinding of valves. The valves are operated direct through rocker levers from the half-time shaft, located directly in line with the valves on the side of the cylinder heads, and supported by brackets bolted to the sides of the cylinders, permitting unobstructed removal of heads or valve containers.

With this construction, uneven strains or distortions of the cylinder barrel, due to uneven expansion in operation, are avoided. Owing to the absence of pockets, which cause friction both in the introduction of the charge and the exhaust of the burned gas, the maximum amount of mixture is introduced into the explosion chamber where it mixes with the minimum amount of burned gas and, as a result, the mixture is much purer and of greater quantity than is possible in a pocketed engine. Then, when the explosion takes place, there is the least possible time consumed between the producing of the spark and the explosion of the charge, inasmuch as the spark is produced almost in the centre

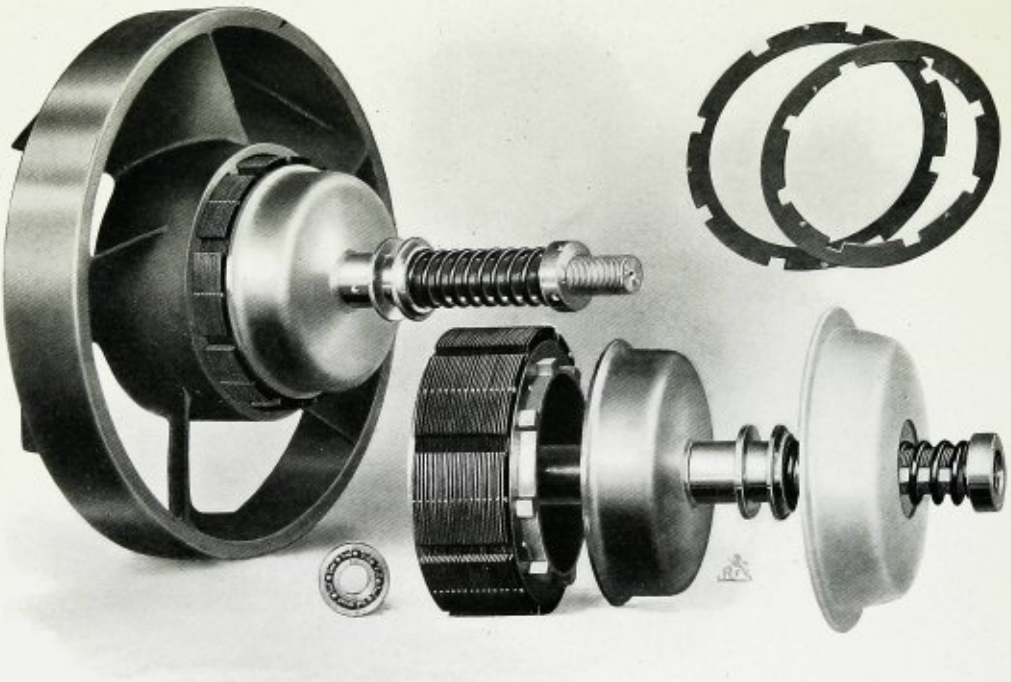




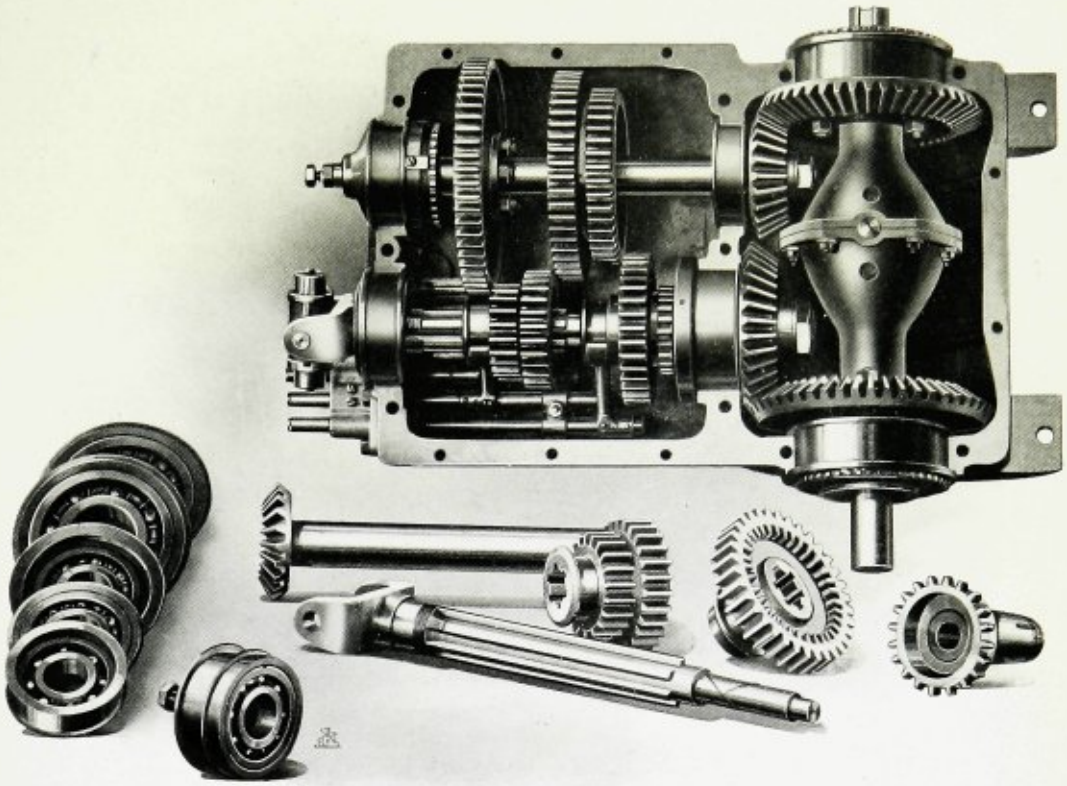
of the charge, which is directly over the piston instead of in a side-pocket, necessitating it to travel through a passage to the main explosion chamber.

By virtue of the instantaneous explosion of the charge, due to the valves being in the heads, and to the exceptionally fat spark, which is produced by the Matheson low tension ignition device, it is unnecessary to manipulate the spark advance lever in order to govern the speed of the motor. The spark is retarded for starting in order to avoid a back fire; but, after the motor has been started, the spark is advanced to the limit, or nearly so, and left there, no matter whether the car may be running at a rate of six miles or sixty miles an hour.

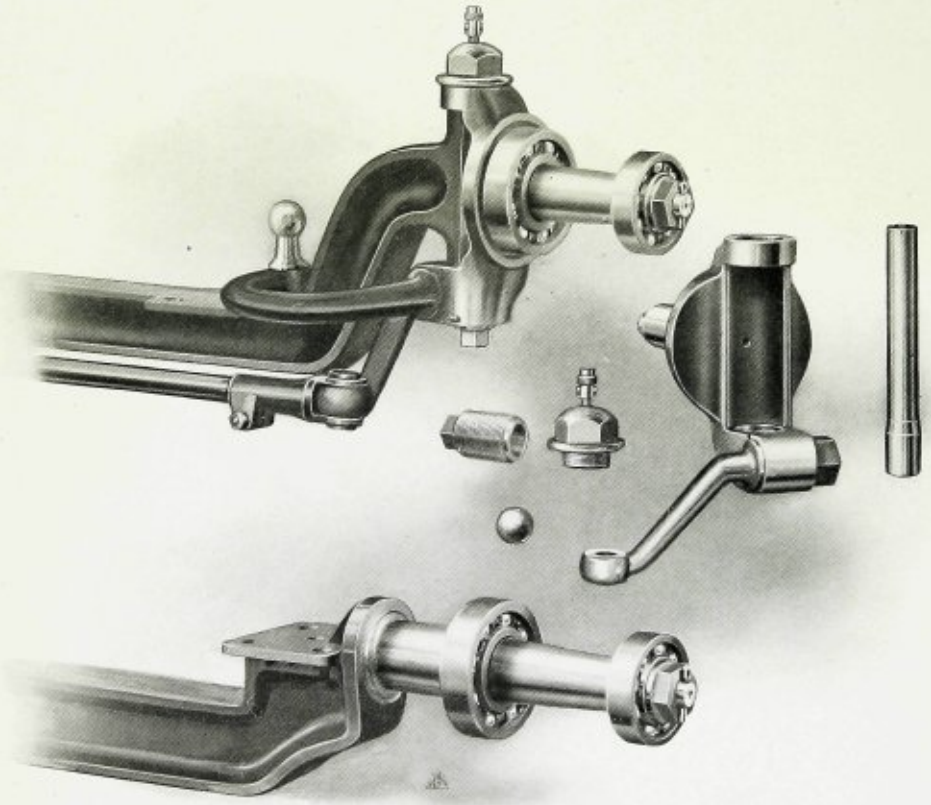
The Matheson carbureter (patented) is of the multiple-jet type, furnishing the correct mixture at all speeds and varying the quantity without affecting the quality of the mixture. Gasoline is delivered into it by a gear-driven plunger pump, and any surplus not required returns to the tank by gravity. There is no waste, every drop being converted into power. It is so flexible that when the car is running on the level in the fourth or highest speed gear, the engine may be throttled so as to give a range in speed of six to sixty miles an hour, by simply manipulating the throttle.



The clutch is the multiple-disc type, consisting of fifty-one discs of saw steel, giving a friction surface of approximately 1,500 square inches. Twenty-five of these discs are held in place in the clutch case, which constitutes the hub of the flywheel and are, therefore, driven by the engine shaft. The other twenty-six discs are attached to a drum which is secured to the transmission shaft. These discs are, of course, placed alternately, that is, the first disc is attached to the transmission shaft, the next to the engine shaft, the next to the transmission shaft, etc., etc. The discs are kept free from engagement by the four small lugs which are riveted through each disc. When the clutch pedal is released, the tension of a coil spring presses the discs into engagement, but as these discs run in oil, the engagement is gradual and, therefore, the car starts smoothly and without any jerk. Aside from the fact that this multiple-disc clutch is permanently effective, it is also extremely economical, as it requires the least possible attention and no replacements whatever, for there is nothing about it to wear out during a long period of normal service.



The transmission is the selective type of sliding gear, four speeds forward and one reverse. The fourth speed is direct drive through one set of bevel gears. The first, second and third speeds forward and the reverse are driven through the second set of bevel gears. It is obvious that any trouble with the fourth speed bevel gears would not affect the driving on the first, second and third speeds; also, any trouble with the second set of bevel gears would not interfere with the driving on the fourth speed. Due to this system of double bevel gears, the work and strains are divided, which naturally prolongs the life of these driving gears. This system embraces the very highest type of construction, and the employment of the very best mechanical principles in design. All the gears and shafts are of the finest nickel steel especially treated, and are practically indestructible. All shafts are mounted on imported Hess-Bright ball bearings of liberal size. All gears run in an oil bath. The operating bars and yokes are also of nickel steel forgings. The gears have a face of 1¼ inches and are of 5 pitch.



In order to make certain of the strength of axles, steering knuckles, and spindles, only the finest grade of nickel steel forgings obtainable has been used in the construction of these parts. Liberal factors of safety have been introduced in order to eliminate absolutely any possible chance of the breaking or binding or these vital parts. Notice the substantial proportions of the front and rear axles, and of the steering knuckle and spindle. Imported annular ball bearings are used in both front and rear wheels. The spindle is placed very close to the hub of the wheel, thus accomplishing very quick and sensitive steering with the least possible effort at the steering wheel. The spring-seats are forged integral with both front and rear axles. There is no way in which the construction of these parts could be improved upon, regardless of expense. And beauty of design has been accomplished as well.

"Built for those who use the best"

W A R R A N T Y

(Standard Warranty of National Association of Automobile Manufacturers, adopted May 4, 1910)

WE WARRANT the motor vehicles manufactured by us for ninety days after the date of shipment, this warranty being limited to the furnishing at our factory of such parts of the motor vehicle as shall, under normal use and service, appear to us to have been defective in material or workmanship.

This warranty is limited to the shipment to the purchaser, without charge, except for transportation, of the part or parts intended to replace the part or parts claimed to have been defective, and which, upon their return to us at our factory for inspection, we shall have determined were defective, and provided the transportation charges for the parts so returned have been prepaid.

We make no warranty whatever in respect of tires or rims.

The condition of this warranty is such that if the motor vehicle to which it applies is altered, or repaired outside of our factory, our liability under this warranty shall cease.

The purchaser understands and agrees that no warranty of the motor vehicle is made, or authorized to be made, by the Company, other than that herein above set forth.

Matheson Automobile Company

Wilkes-Barré, Pennsylvania

New York Branch, Broadway and Sixty-second St.

Rogers & Company
Chicago New York