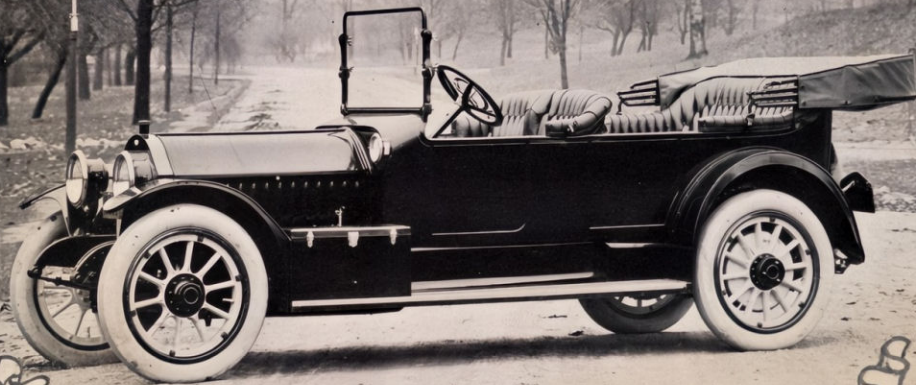


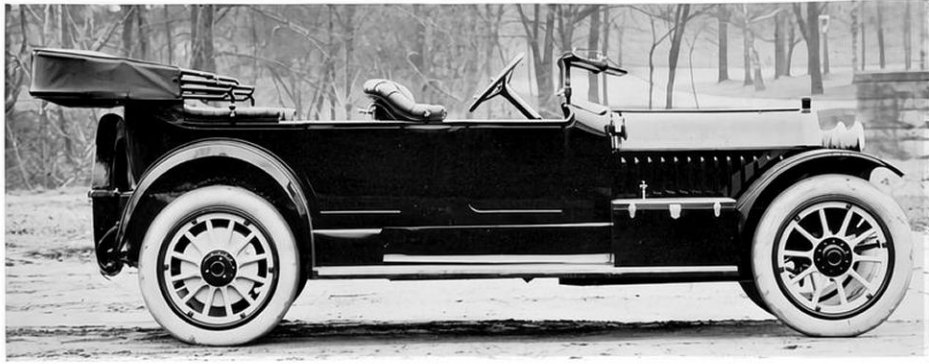
"The Easiest Riding Car In The World"

The MARMON

"FORTY ONE"



"Sixty Years of Successful Manufacturing"

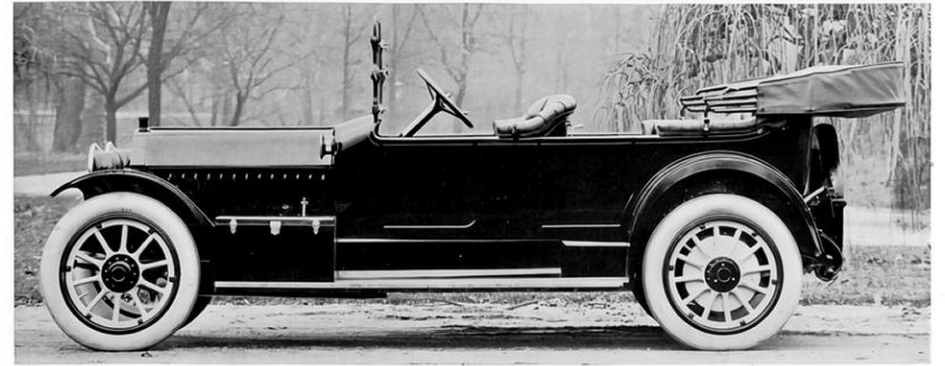


THE MARMON

THE newest product of builders famous the world over for the remarkable quality of their motor cars is naturally the highest as well as the latest expression of their skill in design and long experience in manufacturing. Marmon accuracy has become the ideal standard of shop practice in the automobile industry, just as the Marmon oiling system, the Marmon

pressed steel axle housing, accessible differential and various other features of Marmon design have become standards among the higher grade cars.

The Marmon Forty-One is not a hurried design. There are no weaknesses due to haste, ignorance or lack of experiment and test. There is nothing accidental about it, either good or bad. It is a thoroughly rational six-cylinder car of moderate size and power at a reasonable price. It is designed and built with exactness as to



"FORTY ONE"

weight, power, strength and safety at the highest speeds and under the heaviest strains. Its motor is a marvel of smooth, velvety operation and flexibility. So minute has been the effect to obtain absolute quiet that even the cam shaft and valve tappets run in circulating oil baths.

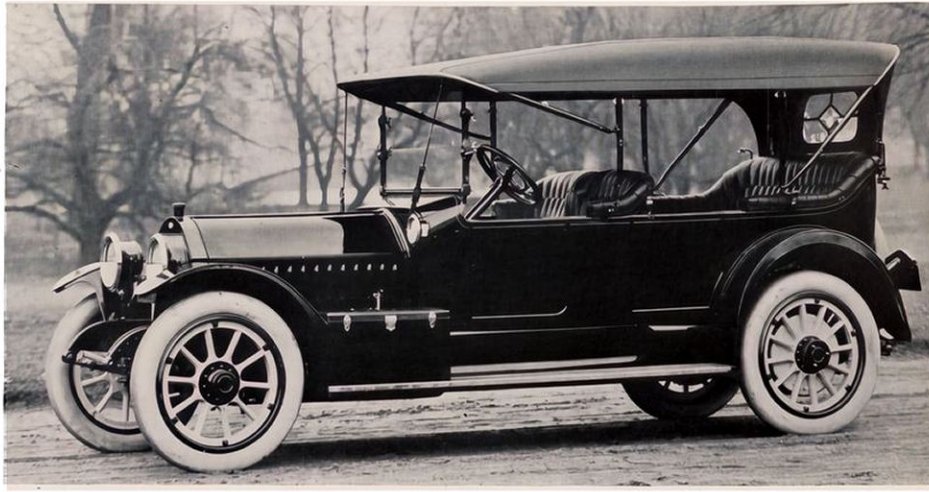
It goes without saying that the electrical equipment and manifold conveniences and luxuries are not only complete, but the best that can be had.

The grand result is a remarkably easy riding car of ample capacity and power for five passengers over the most difficult roads and grades, that throttles down to a crawl or goes at breathless speed without gear shifting and has every convenience and luxury of equipment known to motor-dom—and not a few that have been heretofore unknown.



DETAILED DESCRIPTION

The Motor



MARMON METHODS

YEARS of successful experience in the manufacture of high class machinery, a principle that places quality first in the choice of every piece of material, the utmost care and accuracy in every slight detail of design and manufacture, the elements that have built up a world-wide reputation for the name "Marmon," stand back of the value of the Marmon "Forty One." The careful test and choice of material, the repeated inspection of every working operation which the Marmon standard of quality requires, make this a car to give the best of service through years of usage. Marmon cars have proved this value. The Marmon car of many seasons past is still giving the highest class of service.

In giving the particulars of this car we ask that you do not judge it merely by specifications. Such details as we may mention are but surface indications of its value. The farther into details you go, the more reasons you will find for admiring it.

The operation of the car will bring you better knowledge of its superior features. And years of service will back up this knowledge with thousands of proofs of its greater value.

The first really great test of a completed car lies in the opinions of the men who have brought it into being. The months of unremitting toil and effort that lie before the first car is ready for the owner, either spell success or failure for the model.

At the time the first of the Marmon "Forty One" cars was ready for the buyer, after hundreds of thorough tests, we took the statements of the men who had worked upon it.

Together they stand as one of the strongest endorsements ever placed upon an automobile.

To a man, these experts, who have worked upon many cars in the past, pronounce this car to be right in every detail.

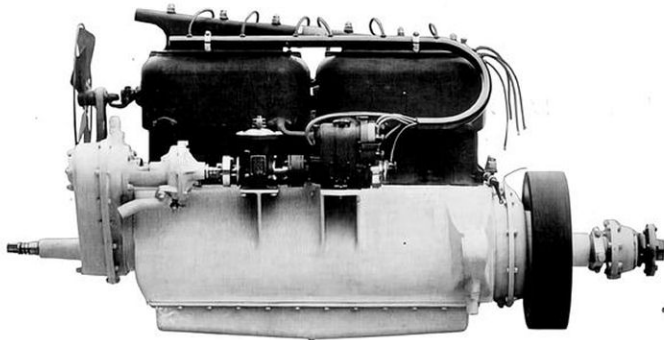
We are satisfied you will share in their enthusiasm, if you will but investigate the facts that lie back of Marmon "Forty One" design, materials and construction.



THE motor has six cylinders, the dimensions being $4\frac{1}{4}$ -inch bore by $5\frac{1}{2}$ -inch stroke, L-head pattern cast three in block. The cylinders are high grade, close grained semi-steel castings which makes for durability and they are of a design which provides large water circulating space and large valves. The valves are enclosed and the base of the cylinders on the valve side are extended and finished to carry the valve tappets. Thus when the cylinders are removed the valve tappets are lifted off with them so that the valve adjustment is not disturbed. This feature also makes possible the valve tappet lubricating system which is fully described further on. The L-head type of motor reduces weight, requires only one cam shaft and one pair of cam gears and simplifies the construction and makes it possible to place such items as the water pump, air pump and magneto in convenient and accessible positions without interfering with valve accessibility. The Ignition is simplified, only one set of plugs being necessary to obtain maximum efficiency and the proximity of the intake manifold to the exhaust manifold facilitates carburation. This type of construction results in a motor of very clean-cut design accessible in all parts and easily kept clean.

The crank case is a one-piece aluminum alloy casting of cylindrical or barrel type in which the crank shaft and cam shaft are inserted from the ends, this construction giving the maximum strength with the least weight. As will be noted, by referring to the illustrations, the crank case is a very substantial casting having accurately machined seats which carry the seven main bearings and these bearings are held in place by long bolts passing through the cylinder flanges and on to the bottom of the crank case. This results in exceptionally strong and rigid construction, combined with light weight. In the crank case a tunnel is formed for the cam shaft and when the latter is in place, the ends are closed, making an oil tight compartment. The cam shaft is mounted on eight bearings, including an outboard bearing in the cam gear cover and each of the twelve cams is keyed and pinned to the shaft close up to a bearing, thus avoiding the possibility of springing the cam shaft. This idea of mounting the cam shaft in a closed tunnel is new and original and results not only in perfect lubrication being obtained but also adds greatly to the quietness of the motor. Another innovation is to be found in this crank case construction which practically eliminates the use of piping in conjunction with the oiling system. The oil ducts supplying the oil to the crank shaft main bearings are all formed in the casting itself, thus doing away with the possibility of broken connections and leaky pipes. The crank shaft is a finely finished one-piece steel forging, having bearings of large dimensions. It is mounted in seven main bearings with white brass bronze-backed, removable bushings. The use of a seven-bearing crank shaft in a six cylinder motor, substantially mounted as it is in this motor, results in very strong and durable construction, obviating the whip in the crank shaft itself and the resulting vibration which occurs where fewer bearings are used. The valve tappet guides are white brass die castings of a new form avoiding the possibility of breakage and providing large bearing surface. The tappets ride the cams on rollers and are made hollow to facilitate lubrication. The connecting rods are long and well proportioned with bronze-backed white brass bushings in the rod end and bronze bushing for the piston pin. The pistons carry four rings at the top and an oil ring at the bottom. The upper rings fit over bull rings which carry the pins, thus allowing the rings to turn freely without the possibility of the ends lining up and leaking. On the right side the crank case carries an integral bracket supporting the electric motor generator and on the left side integral brackets supporting the magneto, air and water pumps. The cam shaft is driven by one pair of gears and the magneto and pump shaft by a silent chain. The air pump supplying pressure to the gasoline tank is made without valves and has an adjustment with which the pressure is easily regulated. This pump is driven by an eccentric on the magneto shaft and is mounted in an accessible position on the crank case. The centrifugal water pump is substantially mounted on the crank case and made easy of access. On the same shaft which drives the magneto an air pump for inflating the tires is mounted. This is a single cylinder diaphragm pump which supplies clean air without the possibility of injecting oil into the tires and is arranged to be easily put in operation by throwing a simple pinned clutch into engagement. The electric starter is mounted on the intake side of the motor connecting through a gear reduction box and by means of a silent chain running on a gear on the forward side of the fly wheel.

PAGE FIVE



Marmon "Forty One" Motor, Showing Mounting of Magneto, Tire Inflator, Water and Air Pumps

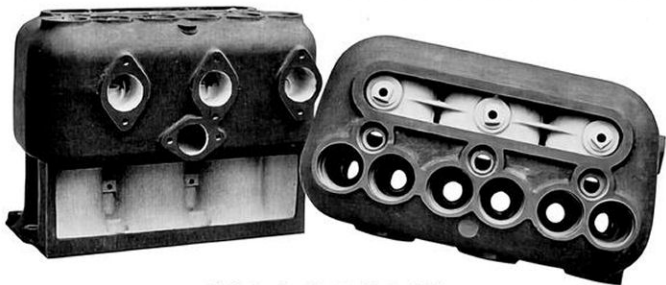
This chain drive is entirely enclosed and runs in oil. A cone clutch of new design is used having an asbestos fabric facing with relief or pickup adjustable springs underneath the surface. The pickup portion of the surface is about one third of the entire amount which results in a clutch of long life with remarkable ease of pickup. It is extremely simple in its parts and operates easily and smoothly.

Oiling System

The oil is carried in a sump or reservoir, the level of oil being below the sweep of the cranks. The oil enters the reservoir through a conveniently placed filler containing a screen and before entering the pump it passes through another screen in the bottom of the reservoir. A gear pump driven by gears from the cam shaft is also placed in the bottom of the reservoir and this delivers the oil under pressure direct to all of the seven main bearings of the crank shaft. The crank shaft is hollow and holes in the shaft register with grooves in the bearings allowing the oil to flow through the shaft into the connecting rod bearings and through tubes along the connecting rods to the piston pin bearings. In addition to this hollow crank shaft circulating system of lubrication which we have been using for many years and for which the Marmon motor is famous, special provision in the Model 41 Motor is made for lubricating the cam shaft and tappets. Oil is delivered to the tunnel in which the cam shaft is mounted and through which the oil circulates, its only escape being out through the tappets and into the valve tappet chamber. From this chamber the oil drains back into the crank case, the valve tappet chamber being entirely closed except at the drain points. The tappets are hollow and the valve adjusting screws are drilled, allowing the oil flowing under pressure to not only flow through the tappet guides but through the tappets, thus supplying a cushion of oil against the lower end of the valve stems as the valves are raised. It will thus be seen that the cam shaft and valve tappet mechanism run practically submerged in a circulating oil bath and the lubrication so cushions all the moving surfaces as to make their operation extremely quiet. The cam gears and silent chain drive for the magneto shaft also run in a circulating bath of oil. All oil returns to the reservoir and is used over and over. An oil gauge on the dash indicates the pressure under which the system is working and the pressure may be easily regulated by an adjustment placed conveniently outside of the crank case. A sight gauge on motor indicates the quantity of oil in the sump. This system of lubrication is not only the most economical in the consumption of oil but is the most reliable and dependable.

Mounting of the Motor

The motor is mounted on a practical and effective three-point support. The forward end of the motor rests in a semi-circle cradle formed by the forward cross-member of the frame with a metal strap over the upper half.



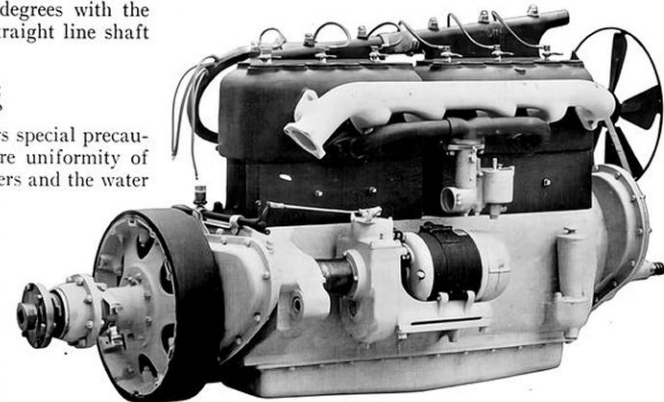
Cylinders Are Cast in Blocks of Three

The rear end of the motor is carried on arms integral with the crank case fitted with large bolts in brackets attached to the frame. This gives a flexible three-point support which avoids all possible strains on the motor through any weaving or twisting of the frame. The motor is mounted slightly lower in the rear

than in front sloping about 2½ degrees with the object of obtaining, as we do, a straight line shaft drive to the rear axle.

Cooling

In the molding of the cylinders special precautions have been taken which insure uniformity of thickness in the walls of the cylinders and the water spaces, liberally proportioned, surround the cylinders completely, giving proper distribution and free circulation of the water. The radiator is of the cellular type of one of the best makes obtainable. It is mounted on trunnions supported flexibly within the frame channel, thus relieving the radiator from strains. Pet cocks are provided for draining the entire water circulating system, including the pump.



Right-Hand Side of Motor with Starter, Carburetor and Oil Filler

Ignition

The latest type water-proof, high-tension dual magneto is used, mounted on the left side of the motor. The wiring from the magneto is neatly arranged and well protected within a metal tube. The drive to the magneto is through a double universal adjustable coupling which is noiseless. The installation of the magneto, tire and water pumps are above the top of the frame, giving extreme accessibility, and either one may be disconnected and removed without disturbing the others. Markings on the flywheel and a pointer make it easy to check up the timing.

Transmission

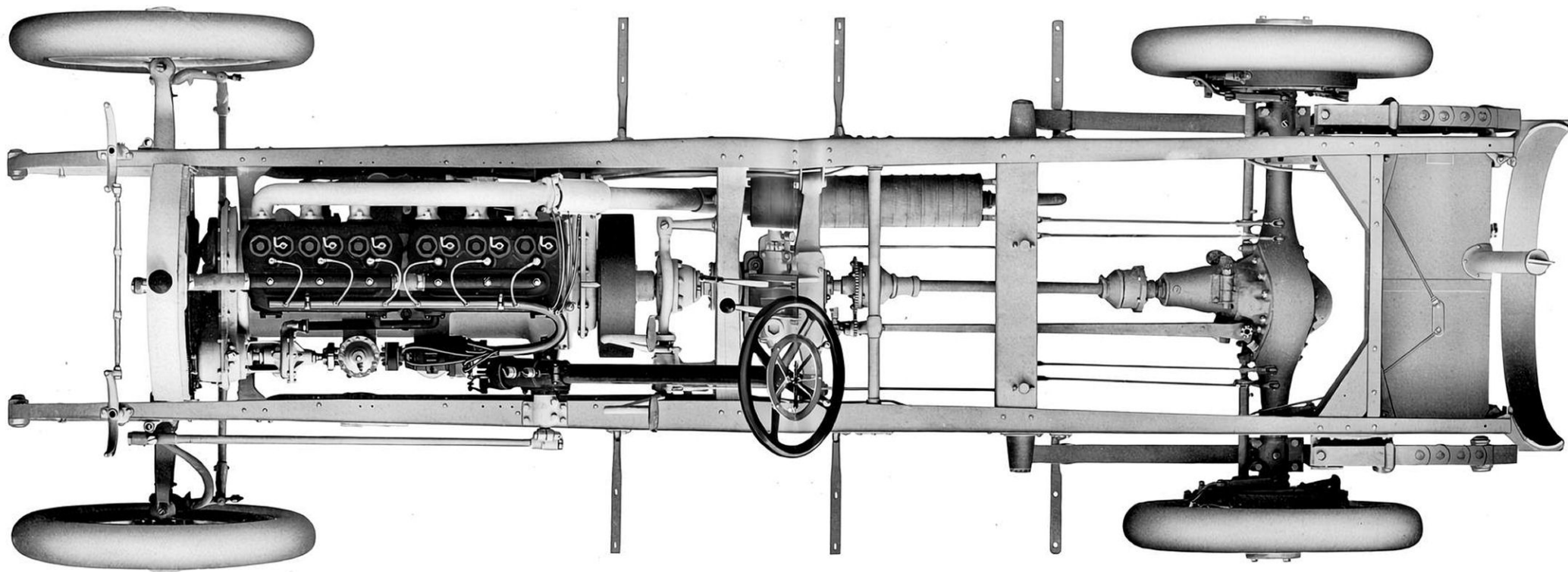
The transmission is of the selective type, three speeds forward and reverse. Like the motor the transmission case is mounted on flexible three-point support also sloping slightly to the rear and centrally located. The forward end of the transmission case is suspended in a large single bearing from the center cross-member of the frame and the arms extending from the rear of the transmission case are secured by large eye-bolts to brackets within the frame channel. This mounting relieves the transmission from any possible strain set up by springing or weaving of the frame and facilitates the straight line shaft drive. The transmission is not only accessible through the floor board in front but may be easily removed from the chassis by dropping it down without disturbing the body in any way. The top cover carries the mounting for the emergency brake and for the shifting lever, the H-slot plate coming flush with the top of the floor board. The gears and shafts of the transmission are of chrome nickel steel, heat treated, mounted on large conical roller bearings. The case is oil tight and dustproof. A lining bar fixture is used for accurately locating both the motor and transmission.

Straight Line Drive

As before stated, the shaft drive is practically on a straight line with the crank shaft in the motor and the bevel gears in the rear axle thus saving power and minimizing wear of the bearings and universal joints. There are three universal joints, one between the clutch and the transmission and two back of the transmission, these universals being mounted within oil-tight dust-proof coverings requiring attention for lubrication probably no more than once or twice during a season's use.

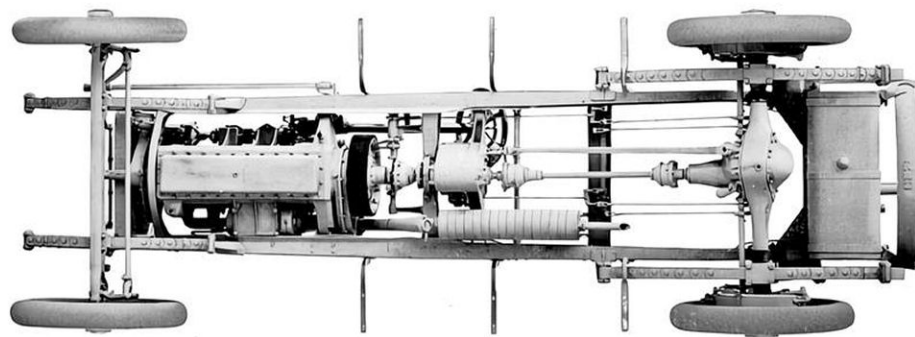
Rear Axle

The rear axle designed to meet the requirements of the Model Forty-One chassis is of the full floating type. The housing is of pressed steel, giving great strength combined with light weight. The differential is mounted in large adjustable conical roller bearings easily accessible through the rear cover of the axle. The pressed steel axle housing and differential accessible through a cover in the rear of the axle are features of original Marmon design first used in Marmon cars. The wheels are mounted also on large conical roller bearings carried on the axle tubes and are driven by the floating drivers within having integral jaw clutches mating in the outer end of the wheel hubs. Provision is made to prevent oil or grease from within the axle housing leaking out the ends of the housing into



View from the Top

The Chassis

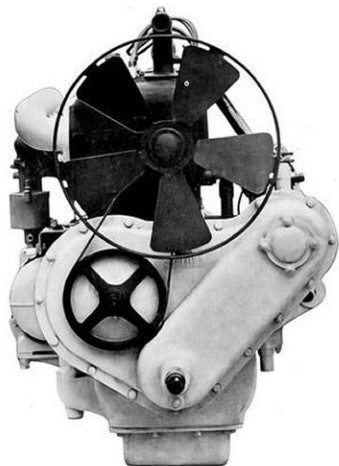


View from the Bottom



STURDY, substantial, durable construction is the first impression one gains from a view of the Marmon "41" chassis. This is followed by admiration of the clean-cut design and the thoroughness with which the details are worked out. Of Marmon design (in every essential detail), it is an exceptionally well-balanced, well-proportioned chassis, each unit and part being in perfect relation to every other part—well calculated to do its work effectively and render maximum service. Its extreme simplicity, substantial mounting and the thorough protection to working parts has resulted in minimizing the number of parts that require close attention for lubrication or rattles. The ease of access to the various units and parts is readily apparent, this important item having received special consideration and thought in the general design.

The Marmon idea of straight-line shaft-drive is carried out in the Model "41" chassis in a most practical manner—the motor and transmission mounting sloping rearwardly each on three-point flexible support, being brought to exact alignment by the use of a special lining bar fixture. This feature minimizes the movement of the universals and saves power in its transmission to the rear wheels.



Front View of Motor

the brakes. The pinion shaft is carried on two large conical roller bearings with simple means for adjusting the same, also for adjusting the pinion to the bevel gear. A torque bar of ample proportions extends forward from the rear axle terminating in a ball end carried between spring cushions suspended from a substantial support carried across the frame. The spring pads of the rear axle are carried in bearings surrounding the axle tubes and swing underneath, and ample provision is made for lubrication.

Brakes

Two sets of brakes are provided on the rear wheels. One set is external contracting, $2\frac{1}{2}$ inch face by $17\frac{1}{2}$ inch in diameter. The other set is internal expanding, $2\frac{1}{2}$ inch face by 17 inches diameter. Simple, effective adjustments, convenient of access are provided. The surfaces are asbestos fabric against pressed steel drums which are securely bolted to the wheel hubs and also held by clips to the spokes. The operation of the brakes are through shafts and quills, bringing the brake rod connections toward the center underneath the body. The connections with the foot brake pedal and the emergency brake lever are through equalizers and the leverage is so arranged that slight pressure on the levers results in

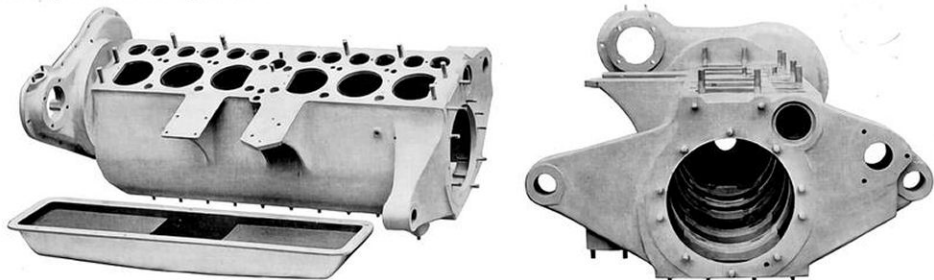
powerful setting of the brakes uniformly in both wheels.

Front Axle

The front axle is a very substantial heat treated forging, I section. The spindles and steering connections are also heat treated forgings of liberal proportions insuring strength and durability. The weight on the spindles is carried in large conical roller bearings mounted within the top of the axle yokes. The wheels are also carried on conical roller bearings.

Steering Gear

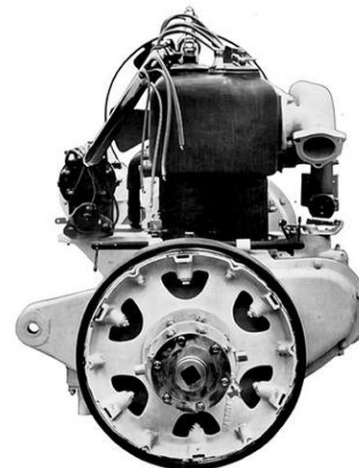
The steering gear is designed especially with the end in view of great durability combined with ease of operation. It is of the worm screw and worm wheel type, the working parts being mounted in a substantial housing with ample bearing surface and means for positive and thorough lubrication. The shaft which carries the steering arm has an outboard bearing mounted on top of the frame. The column is of large diameter, enameled black. The steering wheel is 18 inches in diameter, the spider being a solid aluminum casting including the rim covered with a polished wood grip. The arms of the wheel are also enameled black. The connections at the bottom for the throttle and ignition control are mounted in substantial and durable brackets neatly and compactly designed. The throttle lever on the wheel is at the left and the spark lever is at the right, both levers being held to position by means of friction against a steel ring carried on top of the wheel. These parts are nickel plated. The method of holding these levers by friction instead of ratchets was first used on Marmon cars ten years ago and is now used generally. The push button for the electric horn is carried in the center on top of the steering wheel.



Crank Case and Oil Reservoir. Note Tunnel for Cam Shaft

Convenient Control

The steering column is mounted on the left side with the speed changing gear and hand brake lever in the center to the right. The left foot pedal operates the clutch, the right foot pedal the external contracting brake. The gear shifting lever works in an H-slot with provision to avoid accidental shifting from low into reverse. The hand brake lever with pawl and ratchet operates the internal expanding brakes. The accelerator pedal is very conveniently placed for comfortable operation between the clutch and brake pedal and a similar pedal used to operate the starter is placed to the right of the brake pedal. The driver's position is most comfortable with these various controls within easy reach, including the coil switch on the dash and the lever for adjusting the carburetor for starting. The lighting switch is placed on the heel board within easy reach of the driver as is also the lever which opens the muffler cut-out. The auxiliary hand air pump is concealed below the driver's seat on the left side with the handle in convenient position for operation.



Rear View of Motor

Dash Equipment

The dash fittings consist of an air gauge showing the pressure carried in the gasoline tank, an oil gauge showing the pressure of the oiling system, the coil and switch, the speedometer and clock and the carburetor adjustment, all flush mounted in a mahogany board carried within the cowl of the dash. The clock is rim wind and rim set, so mounted that it is released by the pressure of a spring, bringing it in position for winding or setting, after which it is pushed back to its place, flush with the board.

The Speedometer Drive

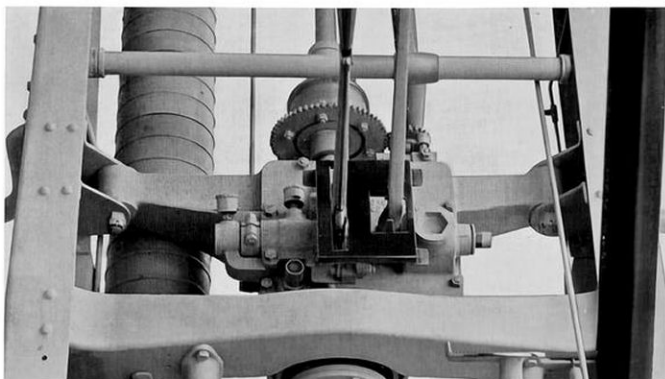
The speedometer drive is through a flexible shaft from a pair of gears mounted on the main drive shaft just to the rear of the transmission under the body. This method of driving the speedometer will be appreciated by those who have had experience with the old mounting on the front wheel, which resulted in frequent breaking of the flexible shaft and other annoyances due to the exposed position of the speedometer driving gears.

The Frame

The frame is a channel section pressed steel of liberal proportions, the side members being 6 inches maximum depth and tapering toward front and rear without sudden change of cross section. It is a double drop frame—that is, with kickup over the front and rear axles, providing abundant spring clearance combined with low body mounting. The frame has three cross members, the one in the rear having gusset plates. The side frame members extend beyond the rear cross member and are arched beneath, forming a seat and a support for the gasoline tank, which is held securely to its place by fabric faced straps, without the possibility of straining the tank. The tank may be easily removed. The ends of the side frame members also carry in a neat and substantial manner the holder for carrying an extra tire on rim. Provision is made for attaching the fittings necessary to carry two tires when desired.

Springs

The springs are of special alloy steel, carefully proportioned to suit the load to be carried, with a view of obtaining the maximum of easy riding qualities, and have self-lubricating spring leaves.



Transmission Gear Box Showing Three Point Suspension

The front springs are semi-elliptic, 2 inches wide by 39 inches long. The rear springs are three-quarter elliptic, scroll end, 2 1/4 inches wide by 57 inches long, and are mounted underneath the axle. The front and rear springs are equipped with eyes of such large diameter that they will accommodate spring bolts three-quarter inch in diameter, and the spring eyes are equipped with graphite and bronze bushes with flanged ends to take care of side thrusts and enclosed with dust-tight

washers. No grease cups are provided, as these graphite bushings require no lubrication and are extremely durable. The ends of the spring leaves themselves have slight depressions forged in them which are filled with a grease that lubricates the springs over many months, preserving the easy riding conditions and eliminating the squeak so common at this point. The up-kick of the frame over the front axle gives considerable spring clearance and obviates the necessity of using stiff front springs. The front end of the front springs and the reach rod of the steering gear are so laid out that their two arcs of movement neutralize, thus preventing the wobbling of the front wheels in going over uneven roads. The rear ends of the front springs are carried in substantial brackets attached underneath the frame, with the spring ends linked between the lower end of the brackets and the bottom of the frame. An additional refinement to the springs is the elimination of the center bolt holding the spring leaves together, as in the ordinary spring. The rear end is also provided with shock absorbers and rebound straps. A great deal of thought has been given to the spring suspension of Model Forty One, with the result that we have obtained extremely easy riding qualities which makes for the comfort of the passengers and adds to the life of the tires. The car tracks true, lays well to the road and handles beautifully at all speeds.

Wiring and Piping

The wiring for the light and starting system is carried in cables thoroughly protected and well secured within the side frame members. The piping for air and gasoline is also substantially mounted within the frame members.

Body

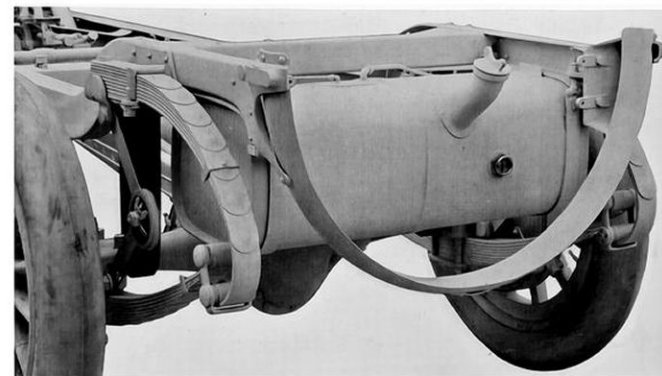
The body is of late design, convex curve type, of very substantial and durable sheet metal construction. The doors open forward and have concealed hinges, with door handles inside. The front doors are cut back of the forward edge of the front seat cushions, thus giving easy entrance to the front of the car, especially on the left or driver's side. The storage battery for the starting and lighting system is carried in a compartment under the front seat, and additional space under the front seat is had for carrying curtains and supplies, entrance to same being through a drop door in the tonneau. The rear seat accommodates three people with the utmost comfort and the tonneau has abundant space. The front seat has liberal room between the dash and seat, providing most comfortable position for both driver and passenger. The steering column being adjustable, the angle of the column can be altered to suit the driver. The front floor boards are readily removed and so mounted as to eliminate squeaks due to the movement of the frame and twisting of the body. The cowl dash carries a substantial mounting for the wind shield, which is secured in position without the use of braces.

The Hood

The hood is of sheet steel in two hinged panels on each side, with a panel on top bolted to the dash and to the radiator.

The Fenders

The fenders are of sheet steel of graceful design and very substantial construction, finely finished. A tool box is carried on the left side forward on the running board and a box for storage is similarly carried on the right side. Side shields are neatly mounted between the body and the running board, and a mud pan is provided which protects the under side of the car thoroughly and which is held in place securely by springs, allowing it to be easily removed or replaced and preventing looseness and rattling.



Showing Gasoline Tank, Rear Springs and Solid Mounting of Tire Carrier on Frame

The Gasoline Tank

The gasoline tank is of seamless steel of 25 gallons capacity, having a filler conveniently placed and a gauge indicating the quantity contained in the tank. The tank is carried in the rear, mounted to the frame, as previously described.

Upholstering

The upholstery is in hand-buffed black leather, tufted over spring backs and cushions, the very best of long white curled hair, leather welts and binding being used. The cushions are deep and luxurious and all in keeping with the quality of the car throughout.

Equipment

As delivered to the purchaser, the Marmon Forty One is complete and ready to run. The standard equipment includes the electric starting and lighting system, storage battery, electric headlights, side and tail lights, with connecting wires concealed within the brackets, shock absorbers and rebound straps in rear, improved self-supporting rain vision windshield affording ventilation, pantasote cape top with dust boot and curtains, speedometer and clock, electric light to illuminate the dash, electric horn mounted under the hood with push button on steering wheel, electric emergency lamp and cord, extra demountable rim, single tire carrier, coat rail, foot rest, jack, pump, tire repair outfit and tool equipment. The standard painting is blue-black body and running gear, with fine line cream stripe, and cream wheels with black stripe.



Seven-Bearing Crank Shaft



Dash Arrangement, Steering Wheel, Lighting Switch, Hand Air Pump and Muffer Cut-out Lever

The Marmon "Forty One"

Outline Specifications

FRAME Pressed steel. Double drop, affording ample spring clearance combined with low center of gravity. The side members are six inches maximum depth and tapered toward front and rear without sudden change of cross section.

MOTOR Water cooled, six cylinder, L-head, vertical, cast in blocks of three with enclosed valves. Bore $4\frac{1}{4}$ inches, stroke $5\frac{1}{2}$ inches. Seven bearing crank shaft.

HORSE POWER 41 to 70.

OILING Marmon system of automatic force feed lubrication in motor, delivering oil through the hollow crank shaft directly into the main bearings, connecting rod bearings and and piston pin bearings. Oil thrown off by movement of cranks lubricates the walls of the cylinders and the pistons. The cam shaft mounted on seven bearings within a tunnel runs completely submerged in a bath of oil circulating through it. The pressure forces the oil up through the valve tappets lubricating the guides thoroughly. The valve adjusting screws are drilled, allowing a stream of oil to flow through them forming a cushion of oil between the valve tappet and the valve stem. The oil returns through the drains to the oil reservoir as does also the oil which passes through the crank shaft bearings. The gears driving the cam shaft and the silent chain driving the magneto shaft also run in a circulating bath of oil. The oil pressure is regulated with an adjustable relief valve placed conveniently outside of the crank case. The oil is carried in a reservoir below the sweep of the cranks passing through a screen and is used over and over. There is no splash or churning of oil. The oil consumption, friction and wear are reduced to a minimum.

IGNITION High tension magneto and dry battery for starting, dual system. Single coil with lock on dash.

TRANSMISSION Selective type sliding gear arranged very compactly in a dust-proof oil-tight case mounted central on three-point support. Three speeds forward and reverse. Shafts mounted in large conical roller bearings. Operation with center lever working in H-slot. The gear-set is accessible below the front floor boards and may be readily removed from below.

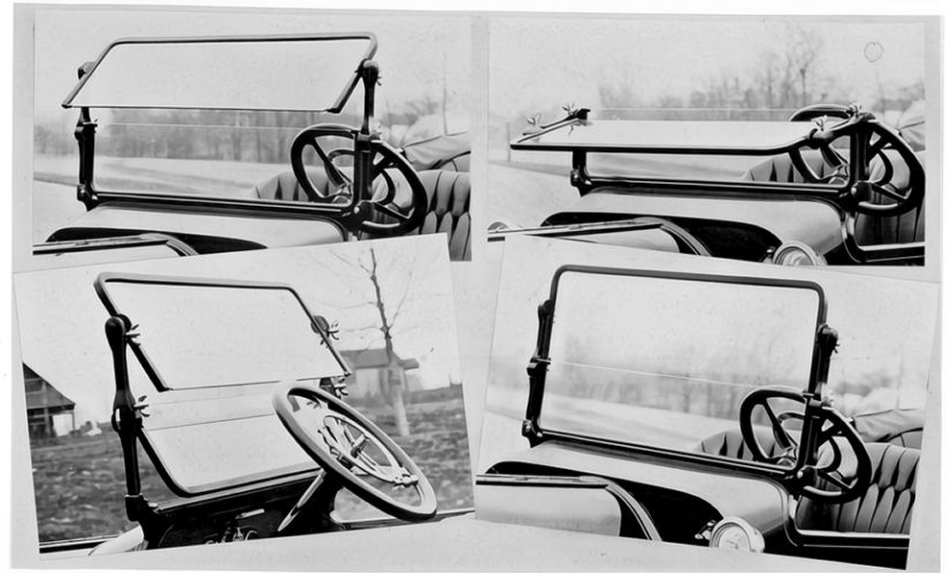
CLUTCH Asbestos fabric faced cone clutch with adjustable "pick-up" springs under the fabric. Large friction surface. Durable. Operates smoothly and requires little attention.

DRIVE Bevel gear. Straight line shaft drive which saves power and minimizes wear of bearings and universal joints. One universal between clutch and transmission and two universals back of transmission.

REAR AXLE Full floating type. Pressed steel housing, with bevel gear differential easy of access through axle housing directly from the rear, both features being original and first used in the Marmon. Differential mounted on conical roller bearings. Wheels are carried also on conical roller bearings mounted on the axle tubes driven by the floating axle shafts having integral jaw clutches at the outer end mating in the wheel hubs.

FRONT AXLE Forged steel I section. Weight carried by conical thrust bearings. Conical roller wheel bearings. Yokes and steering arms are alloy steel forgings given special heat treatment. Cross connection back of axle.

BRAKES One set, internal expanding 17 inches diameter by $2\frac{1}{2}$ inch face and one set external contracting $17\frac{1}{2}$ inch diameter by $2\frac{1}{2}$ inch face. Effective adjustments very easy of access. Brakes operated through equalizers.



Adjustments of the Ventilating Wind Shield

WHEEL BASE 132 inches. Tread $56\frac{1}{2}$ inches. Clearance 10 inches.

WHEELS Wood artillery. Interlocked spokes.

RIMS Quick detachable, demountable. One extra rim supplied.

TIRES 35 x 5 front and rear.

STEERING GEAR Irreversible, worm and worm wheel construction. Large bearings with ample provision for lubrication. 18 inch steering wheel with solid spider and grip. Horn button in center on top of wheel. Column of large diameter enameled black, as is also the wheel spider.

CONTROLS Left hand drive, center control levers. Improved spark and throttle levers on steering wheel held by friction, first used on the Marmon ten years ago and now used generally. Foot accelerator. Left foot pedal operates the clutch, right foot pedal one set of brakes, hand lever the other set of brakes.

CARBURETOR Automatic float feed with control from dash for starting.

GASOLINE TANK Seamless steel. Capacity 25 gallons. Tank suspended from rear end of main frame side members. Pressure from air pump on motor. A hand pump is also provided. Air pressure gauge on dash and gasoline gauge on tank.

FENDERS Sheet steel with metal shield between fenders and body, front and rear; side shields back of running boards. Neat fitting mud pan, easily removed. Wide running boards.

RADIATOR Cellular, mounted on a trunnion and with belt driven adjustable fan behind it.

SPRINGS Self lubricating. Front, semi-elliptic, 2 inches wide by 39 inches long. Rear, three-quarter elliptic, $2\frac{1}{4}$ inches wide by 57 inches long. Ends mounted with large self-lubricating dust-proof bushings and large spring bolts. Oil cups are unnecessary and none are provided.

BODY Convex curve type, of very substantial sheet metal construction. Concealed hinges. Doors open forward. Cowl dash with mahogany board on which the coil, speedometer, clock, air and oil gauges, and carburetor control are very neatly flush mounted convenient to driver.

HOOD Regulation hinged bonnet of sheet metal having center panel on top bolted to radiator and dash.

FINISH Blue black bodies with fine line cream stripe, running gears the same with wheels painted cream color striped in black. Nickel trimmings. Special colors at extra cost and additional time required.

UPHOLSTERING Best of genuine black leather; coil, spring backs, spring edge cushions, best of white curled hair. Leather welts and binding. Deep and luxurious cushions. Tufted upholstery.

CARRYING SPACE Commodious box on right front fender with corresponding tool box on the left front fender. Space under front seat with drop door in tonneau. Pockets in tonneau doors.

EQUIPMENT Electric starting and lighting system with storage battery easy of access, mounted under front seat; large electric horn lamps, electric dash and tail lamps all with wiring concealed within the brackets. License plate holder in combination with tail light. Bulls-eyes in the rear of the dash lamps throw light on the running boards. Lamps black enamel with nickel finish. Electric dash lamp. Switch for lights conveniently mounted on heel board of front seat. Pantasote cape top with dust boot and curtains; divided rain vision ventilating windshield, self supported from dash. Speedometer and clock mounted flush on dash with speedometer drive from gear on driving shaft underneath the car. Electric emergency lamp with long extension cord, electric horn mounted under hood with push button in center of steering wheel. Power tire pump mounted on motor. Shock absorbers and re-bound straps mounted on rear axle. Muffer cut-out. Single tire carrier in rear substantially supported from ends of side frame members. One extra demountable rim. Coat rack, foot rest, assortment of tools, oiler, jack and tire repair kit.

PRICES

Five Passenger Touring Car	.....	\$3250.00
Four Passenger Touring Car	.....	3250.00
Two Passenger Roadster	.....	3250.00
Speedster	.....	3500.00
Limousine (seats seven)	.....	4750.00
Landaulet and Coupe, prices quoted on application.		
Chassis, without dash and rear fenders, but with front fenders, hood lighting system and lamps and standard chassis equipment, painted in lead.	.....	3000.00

Warranty

THIS IS TO CERTIFY THAT we, NORDYKE & MARMON Co., of Indianapolis, Indiana, warrant each new motor vehicle manufactured by us, whether passenger car or commercial vehicle, to be free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good at our factory any part or parts thereof which shall within ninety (90) days after delivery of such vehicle to the original purchaser be returned to us with transportation charges prepaid, and which our examination shall disclose to our satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part, and we neither assume nor authorize any other person to assume for us any other liability in connection with the sale of our vehicles.

This warranty shall not apply to any vehicle which shall have been repaired or altered outside of our factory in any way so as, in our judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident, nor to any commercial vehicle made by us which shall have been operated at a speed exceeding the factory rated speed or loaded beyond the factory rated load capacity.

We make no warranty whatever in respect to tires, rims, ignition apparatus, horns or other signaling devices, starting devices, generators, batteries, windshields, speedometers or other trade accessories, inasmuch as they are usually warranted separately by their respective manufacturers.

NORDYKE & MARMON CO.