



**McFARLAN
SIX**

Catalogue
No. 32



SELF STARTING
Mc F A R L A N S I X



^o McFARLAN MOTOR CAR CO.

CONNERSSVILLE
INDIANA
· U · S · A

FOREWORD

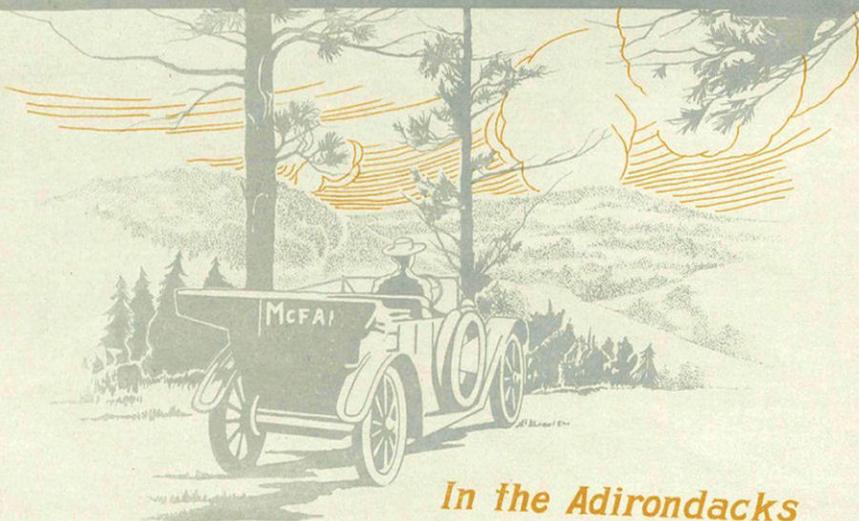


A MANUFACTURER, starting with an idea that is sound and stable, and having already a well equipped plant and a cohesive, efficient organization, might be well justified in claiming not only that his product deserves the consideration of the careful buyer, but also that it is much superior to the product of less efficient organizations and less sound ideas. If, eventually, that manufacturer's basic idea is universally adopted, its soundness is established. And if for years he has worked on his basic idea without deviation, and always with the view of improving his product so that its value to the purchaser is greater and greater, it is evident that his product will be more advanced in any given season than the product of a manufacturer who starts that season to produce goods along exactly parallel lines.

Such is the position of the manufacturers of the **McFarlan Six**.

Five years ago the first **McFarlan Six** was produced, and at that time it was the only medium priced, medium weight, six cylinder car on the world's markets. It was unique. The six cylinder car was not at all firmly established in the public's estimation, and there was general belief, regarded as well founded, that it never would come into general use.

But the builders of the **McFarlan Six** already had a large plant and an efficient organization. As the **McFarlan Carriage Company**, they had built fine carriages for the world since 1852. The third generation of the **McFarlan** family had been educated with



In the Adirondacks

FOREWORD

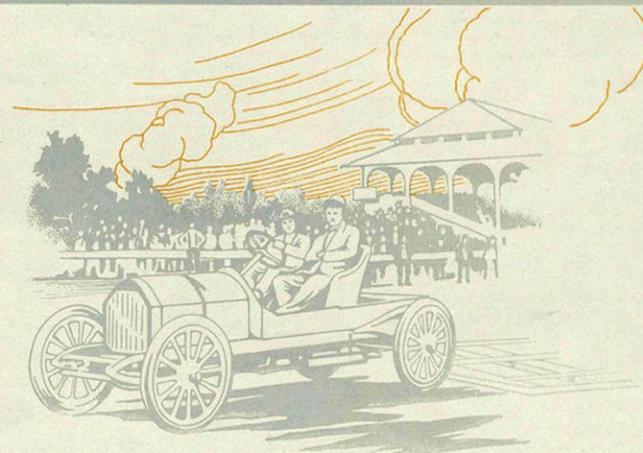
the view of their manufacturing automobiles. Their education was technical, and even included time spent in European automobile factories.

The prime idea evolved from this preliminary training was that the **McFarlan** name should not be identified with less than a six cylinder car. At that time it required real courage to back that idea.

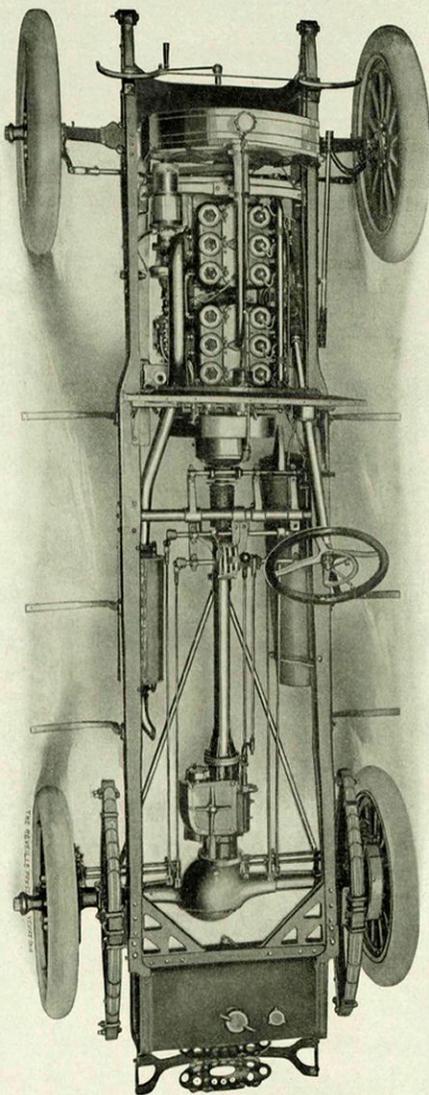
For the present season, nearly every manufacturer of automobiles who is wide-awake will attempt to build six cylinder cars. They must at least include six cylinder cars in their lines. For the majority of them, this season marks their initial experience with sixes. Regardless of their success individually, collectively they have justified and vindicated the **McFarlan** idea.

But for five years the builders of the **McFarlan Six** have been working on six-cylinder cars—working on a sound idea. For five years they have been improving, until now the **McFarlan Six** is so established that the price need not be considered in comparing it with nearly any other car on the world's markets.

Three chasses are offered, each an ultimate development of a chassis best adapted to the use for which it was intended.



A familiar sight at the last four Indiana State Fairs



TOP VIEW OF SERIES S CHASSIS

Specifications Series S

Motor—Will develop 57 horse power on brake test. "T" head type, with cylinders cast in blocks of three. Note that the "T" type motor is used on the highest priced cars built, because it is better, quieter, and runs with less vibration than any other type. Cylinders and pistons of cast grey iron. Four rings on each piston. Each ring cast and ground separately. Motor hung on three points.

Cylinder dimensions: 4" x 5". Bore stroke ratio, 1:1.25.

Valves: 2" in diameter.

Crank case: All aluminum, extra heavy.

Crank shaft: 2" in diameter. Three main bearings. End bearings, 3 $\frac{3}{4}$ "; middle bearings, 2 $\frac{3}{4}$ ". All bearings of nickel babbitt, die cast.

Connecting rods: Drop forged and heat treated. Bronze wrist pin bearings.

Motor gears: All helical or worm type. Very quiet in operation.

General construction: Valves are enclosed by aluminum plates, making motor practically dust proof. Motor as a whole is very compact, yet all parts are readily accessible. Spark plugs in port caps over intake valves. It will be noticed that the Electric Lighting Generator, Air Compressor for the starting system, and all motor accessories are positively driven. No belts from inaccessible points are used; evidence that these features belong, and were not added as an afterthought. Note over-all length of motor, remembering that a short crank shaft is a stiff one.

Self Starter—See page 20.

Electric Lighting System—See page 21.

Clutch—Multiple disc type, running in oil. A clutch with lots of experience built into it. No trouble whatever. It is enclosed in a case cast integral with the fly-wheel.

Lubrication—Circulating splash system. Oil circulated by gear pump, driven by spiral gear from intake camshaft. Sight feed on dash.

Cooling System—A genuine square tube cellular radiator is used. This is not a plain vertical tube with a false front. Capacity is ample. Water is circulated by gear-driven centrifugal pump.

Front Axle—One piece drop forging; I-beam section; special heat treated. All steering connections are behind and above the axle. Cup and cone ball bearings in wheels.

Rear Axle—Special full floating. Driving members carry no weight. For details, see page 22.

Transmission—Mounted on rear axle. Gears 3 $\frac{3}{4}$ per cent nickel. Nickel steel shafts. Sliding shaft is splined. Dental engagement for direct drive. Impossible to strip. Main shaft bearings double row annular balls. Counter shaft high duty rollers.

Control—Center control. Clutch and service brakes on pedals. Emergency brake on side lever. Spark and throttle controls on top of steering wheel. Also foot accelerator. Control set mounted on special cross member and very accessible for any adjustments.

Frame—Pressed steel from $\frac{3}{4}$ " stock; 4 $\frac{1}{2}$ " channel. All joints hot riveted. Gusset plates at all cross members.

Springs—Front, 39" x 2", seven leaves; rear, full elliptic, 40" x 2", eight leaves, double scroll ends. All springs oil tempered and full bright, leaves graduated in thickness to allow maximum action. Rear spring seats swivel.

Wheels—37" regular, 32" or 34" optional. Twelve spokes in each wheel, each spoke 1 $\frac{1}{8}$ " in diameter. Spokes swelled on rear wheels where brake bolts go through.

Rims—Firestone Quick Detachable Demountable.

Tires—37" x 4 $\frac{1}{2}$ ". Spares carried on rear of car.

Wheel Base—124"; 56", 61" tread, special.

Steering Gear—Worm and gear type. Irreversible. Ball thrust bearings. 18" notched walnut steering wheel. Aluminum spider.

Gasoline Supply—21-gallon tank, carried on rear of car. Pressure feed; pressure taken from exhaust through reducing valve. Four gallons in reserve. Multiple jet carburetor.

Ignition—Eisemann High Tension Dual System. Batteries for starting.

Painting—McFarlan brown, McFarlan green, flat green, blue black, on open cars. Closed cars, McFarlan green. Any color, except white, will be supplied on order.

Upholstering—No. 1 machine buffed leather over specially designed oil-tempered springs and white curled hair. Whipcord or heavy all wool cloth optional. Cushions of special patented design without corners.

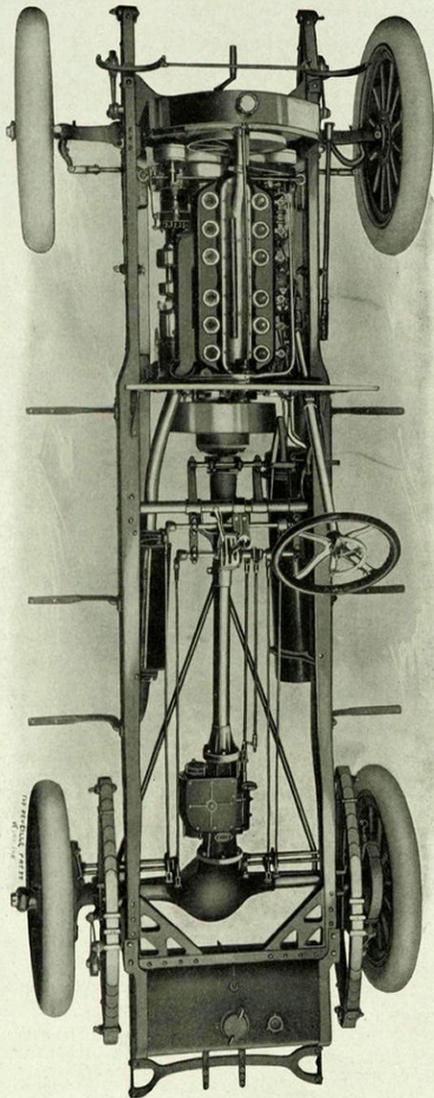
Equipment—Self-starter; electric lighting system; dash light; top of silk mohair; dust-hood for top; jack; pump and tools; demountable rims, with one spare rim; tire carrier; hose for pumping tires from starting system; rain vision windshield; speedometer with odometer; electric horn. Tail light designed so license plate may be hung on it.

Mountings—Black enamel and nickel.

Tool Boxes—Concealed.

Bodies—Two passenger Turtle Back Roadster; four and five passenger Touring; Standard Coupe; Turtle Back Coupe. Driver's seat accessible from either side of car. All bodies sheet steel over ash frames, built entirely in our own shops.

Weight—3,200 pounds.



TOP VIEW SERIES T CHASSIS

Specifications Series T

Motor—Offered as the ultimate answer to the demand for a medium weight, compact, flexible, powerful, dust proof, long stroke motor for use on American roads in the hands of the average American driver.

Cylinders—4" x 6", cast en bloc. Bore-stroke ratio, 1:1½. "T" head. Water circulates completely around and over every cylinder.

Valves—2" in diameter. Valve springs enclosed.

Crank Case—All aluminum. Extra heavy.

Crank Shaft and Bearings—Crank shaft, 2" in diameter. Four main bearings, die cast from nickel babbitt. End bearings, 4½" long, 2½" in diameter; middle bearings, 1½" long, 2½" in diameter.

Connecting Rods—Drop forged and heat treated. All reciprocating parts balanced perfectly before being assembled.

Motor Gears—All helical or worm type of fine pitch. Magneto and pump shafts run on ball bearings.

General Construction—Motor is exceedingly compact, yet parts are most easily accessible. All motor accessories driven direct from permanent connections. Note over all length of this motor, remembering that a short crank shaft is a stiff one.

Self Starter—See page 20.

Electric Light System—See page 21.

Clutch—Multiple disc type, running in oil. A clutch with lots of experience built into it. No trouble whatever. It is enclosed in a case cast integral with the fly wheel.

Lubrication—Special splash system. Very efficient. Oil level automatically adjusted for various speeds. Most economical system known. One instance of 1,800 miles on a gallon of oil is known.

Cooling System—A genuine square tube cellular radiator is used—not a vertical tube with a false front. Water is circulated by gear driven centrifugal pump. Fans in front of motor and cast in fly wheel.

Front Axle—One piece drop forging; I beam section; special heat treated. All steering connections are behind and above the axle. Cup and cone ball bearings in wheels.

Rear Axle—Special full floating. Driving members carry no weight. For details, see page 22.

Transmission—Mounted on rear axle. Gears 3½ per cent nickel. Nickel steel shafts. Sliding gear shaft is splined. Dental engagement for direct drive. Impossible to strip. All main shaft bearings double row annular balls. Counter shaft bearings high duty rollers.

Control—Center control. Clutch and service brakes on pedals. Emergency brake on side lever. Spark and throttle controls on top of steering wheel, also foot accelerator. Control set mounted on special cross member and very accessible for any adjustments.

Frame—Pressed steel from ½" stock; 4½" channel. All joints hot riveted. Gusset plates at all corners.

Springs—Front, 39 x 2, seven leaves. Rear, full elliptic, 40 x 2, eight leaves, double scroll ends. All springs oil tempered and full bright; leaves graduated in thickness to allow maximum action. Rear spring seats swivel.

Wheels—37" regular, 32" or 34" optional; 12 spokes in each wheel; each spoke 1½" in diameter. Spokes swelled on rear wheels where bolts go through.

Rims—Firestone quick detachable demountable.

Tires—37 x 4½. Spares carried on rear of car.

Wheel Base—124", 56" or 62" tread.

Steering Gear—Worm and gear type, irreversible. Ball thrust bearings. 18" notched walnut wheel. Aluminum spider.

Gasoline Supply—21-gallon tank carried on rear of car. Pressure feed. Pressure taken from small cam action pump on motor. 4 gallons in reserve. Multiple jet carburetor.

Ignition—Eisemann High Tension Dual System. Batteries for starting.

Painting—McFarlan brown, McFarlan green, flat green, blue black on open cars. Closed cars, McFarlan green. Any color, except white, will be supplied on order.

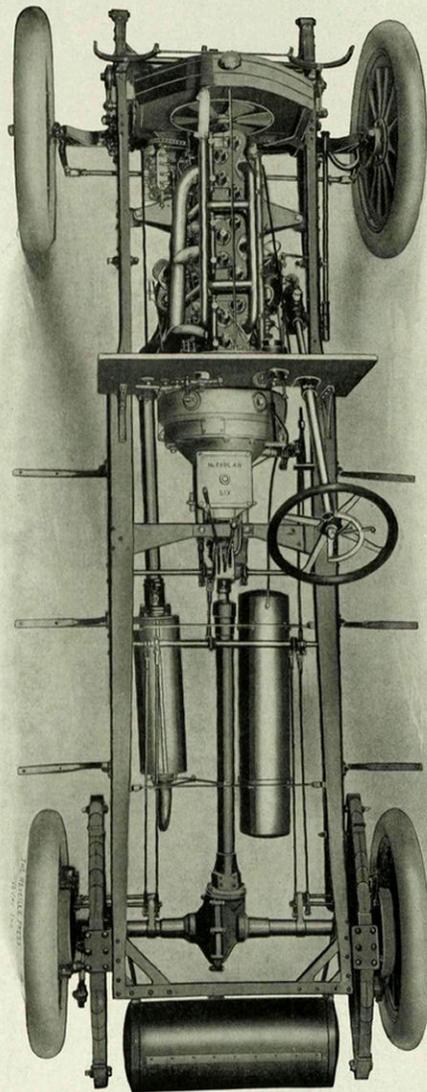
Upholstering—No. 1 machine buffed leather over specially designed oil tempered springs and white curled hair. Whipcord or heavy all wool cloth optional. Cushions very deep and of patented design without corners.

Equipment—Self starter; electric lighting system; dash light; top of silk mohair; dust hood for top; jack; pump and tools; demountable rims with one spare rim; tire carrier; hose for pumping up tires from starting system; rain vision windshield; speedometer with graduated and clock; electric horn; tail light so designed that license plate may be hung from it.

Mountings—Black and nickel.

Bodies—Two passenger Turtle Back Roadster; four and five passenger Touring; Turtle Back Coupe; Standard Coupe; six passenger Vestibuled Limousine. Driver's seat accessible from either side of body. All bodies sheet steel over ash frames; built entirely in our own shops.

Weight—3,200 pounds for open cars; Limousine, 3,900 pounds.



TOP VIEW OF SERIES M CHASSIS

Specifications Series M

This series is offered in answer to the demand for a high powered, high speed, overhead valve job. The motor is a development of our racing motor, and is the one that carries the McFarlan flag whenever it appears on the track. It is the most powerful motor for its size in the world, while at the same time it uses very little more gasoline and oil than numbers of smaller cars. In speedway races this model has made seventeen miles to the gallon of gasoline for two hundred miles. It is capable of a speed of 95 miles per hour under racing conditions.

Motor—Will develop 66 horsepower on brake test. Cylinders cast in pairs, 4½" bore, 5" stroke. Valves, 2" in diameter. Valves in heads of cylinders worked by overhead rocker arms and push rods.

Crank Shaft—1¼" in diameter, mounted on four bearings of die cast nickel babbitt. End bearings, 4½"; middle bearings, 2½".

Connecting Rods—Drop forged and heat treated. Very large bearings.

Clutch—Multiple disc in oil. Clutch lubricant is circulated by the fly wheel.

Lubrication—Lubricant is circulated by fly wheel. Connecting rod bearings lubricated by splash from constant level reservoir.

Transmission—Is unit with motor and bolted to crank case. Lubricated from circulating system of motor. Gears 3½ per cent nickel. Five double row annular ball bearings in transmission. Main shaft splined. Both shafts nickel steel.

Front Axle—One piece drop forging, 1 section. Heat treated. Cup and cone ball bearings in wheels. Steering connections behind and above axle.

Rear Axle—Full floating. Special design. Same general design as axles of Series S and T, shown on page 22. Various members run on eight double row annular ball bearings.

Self Starter—See page 20.

Electric Lighting—See page 21.

Control—Center control; both levers inside of body. Spark and throttle levers on top of steering wheel.

Foot accelerator. Clutch and service brakes on pedals. Emergency brake on side lever.

Frame—Pressed steel from ¼" stock. Hot pressed and hot riveted. 4½" channel. Gusset plates at all corners.

Springs—Front, semi elliptic, 39 x 2", seven leaves. Rear, full elliptic, 40 x 2", double scroll ends, eight leaves. Leaves graduated in thickness to allow maximum action. Special wide opening in rear springs. All leaves full bright.

Wheels—37", 12 1¼" spokes in each wheel. Quick detachable, demountable rims. 32" or 34" wheels optional.

Tires—37" x 4½". Spares carried on rear of car.

Wheel Base—128", 56" or 62" tread.

Steering Gear—Worm and gear type, irreversible. 18" notched walnut steering wheel. Aluminum spider.

Gasoline Supply—From 17 gallon tank under front seat. Gravity feed. 2½ gallons in reserve.

Ignition—Eisemann High Tension Dual System. Batteries for starting.

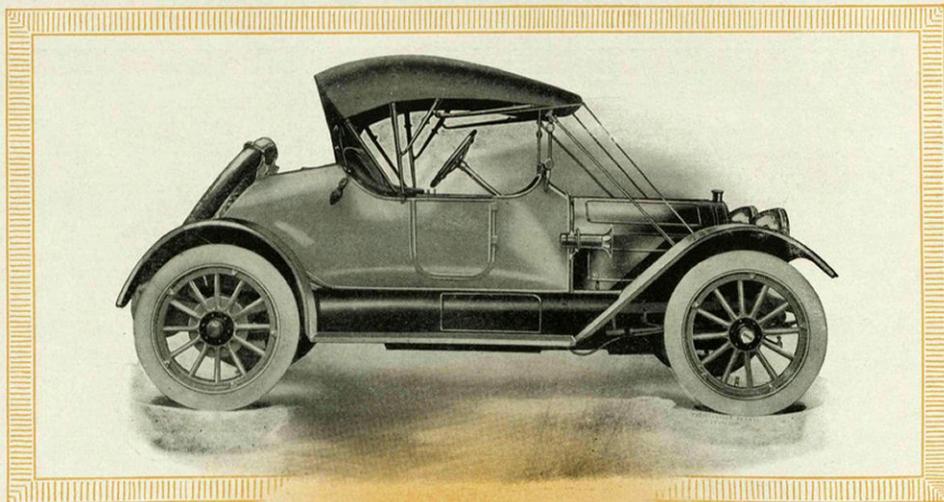
Upholstering—No. 1 machine buffed leather over specially designed oil tempered springs and white curled hair. Whipcord or heavy all wool cloth optional. Cushions of special patented design without corners.

Equipment—Self starter; electric lights; dash light; top of silk mohair; dust hood for top; jack; pump and tools; demountable rims with one spare rim; tire carrier; hose for pumping tires from starting system; rain vision windshield; electric horn; Warner Model R 2 Speedometer; tail light designed so license plate may be hung from it.

Mountings—Black enamel and nickel.

Bodies—Two passenger Standard Roadster; special double bucket seat Speedster; special four passenger long distance Touring; standard four, five and seven passenger Touring; seven passenger Vestibuled Limousine. Driver's seat accessible from either side of car. All bodies sheet steel over air dried ash frames; built entirely in our own shops.

Weight—3,600 pounds.

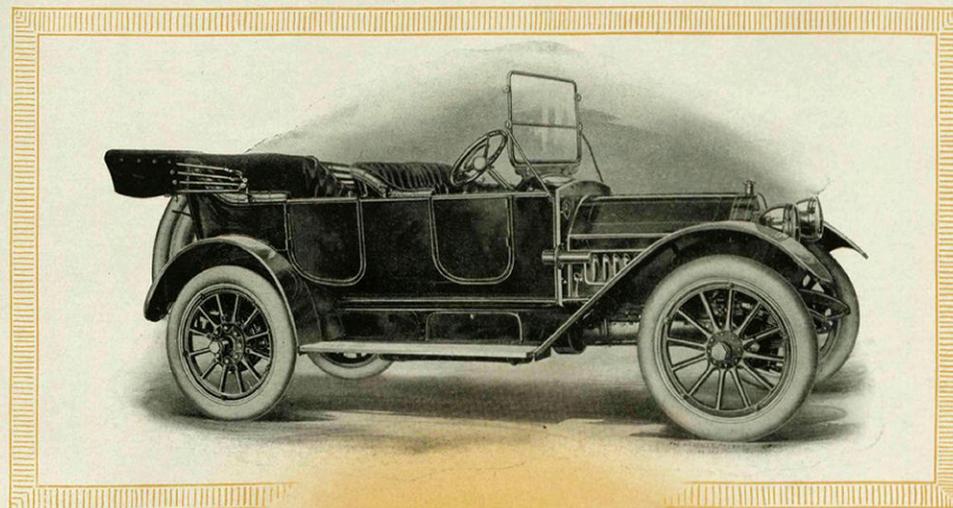
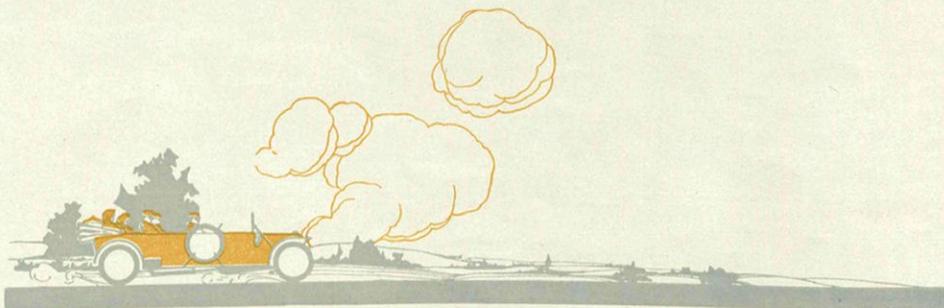


Model 24

THE prettiest of the turtle back models. Body swells and recedes gradually from dash to stern. No corners. This model features something rarely found in Roadsters—touring car comfort and ample luggage space. The cushions are deep and the passengers' position easy and natural. All of the space under the turtle back is available for luggage. The compartment is 40 inches long, 22 inches high and 36 inches wide. The door is in the rear and lifts upward. It is 36 inches wide and 25 inches high. The equipment is absolutely complete.

Model 24S, \$2,300.00

Model 24T, \$2,500.00

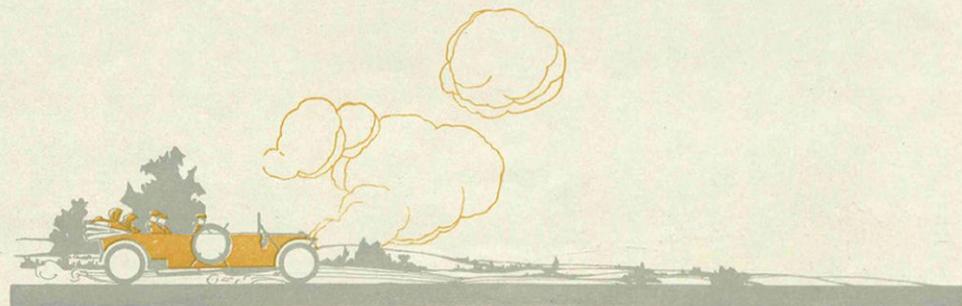


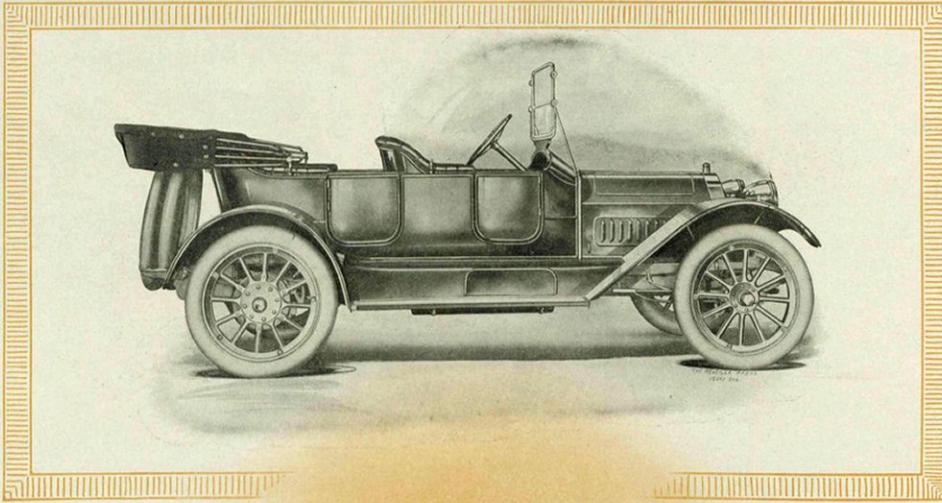
Model 26

A DIGNIFIED car, at home in any company. Fast enough, slow enough and comfortable enough for the most exacting. A five passenger model—plenty of room for five persons. It is hung low, and whether on pavements or country roads it is comfortable to a degree. Cushions are 9 inches deep. From top of rear cushion to top is 39 inches. Seats are just high enough and tilted just enough. In the T Series this car is perhaps the best all purpose car on the market at present.

Model 26S, \$2,300.00

Model 26T, \$2,500.00

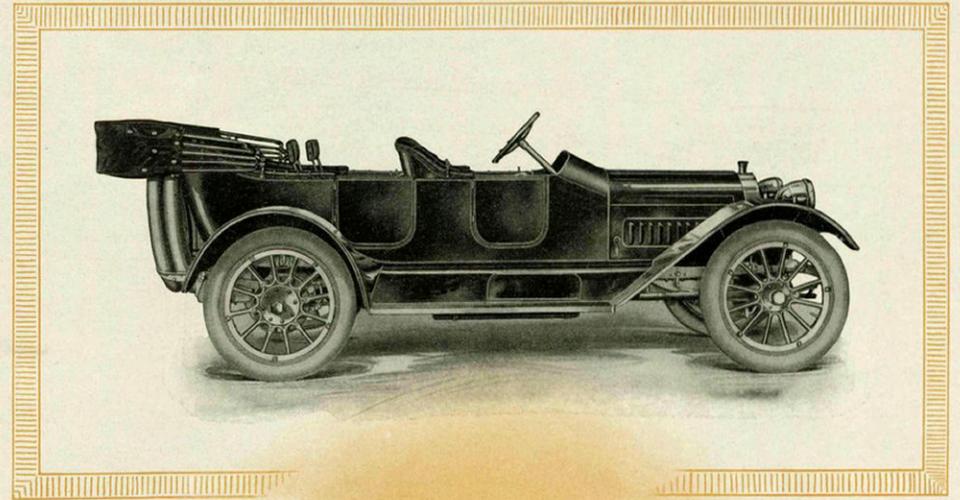
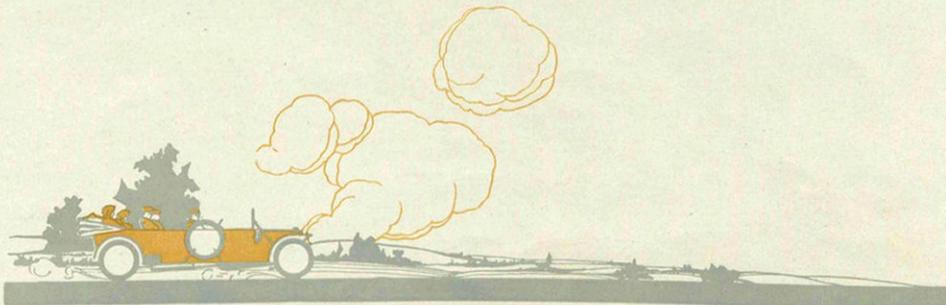




Model 28

THE past season's experience has led this company to believe that for city use the four passenger model is steadily gaining in popular esteem. More four passenger models have been shipped to the larger markets than ever before. Here is the McFarlan offering in this line. It resembles the Model 26 in its lines and outward appearance. The tonneau, while not so roomy as that in the Model 26, is large enough to allow plenty of sprawl room. The car as a whole is as large as the average roadster.

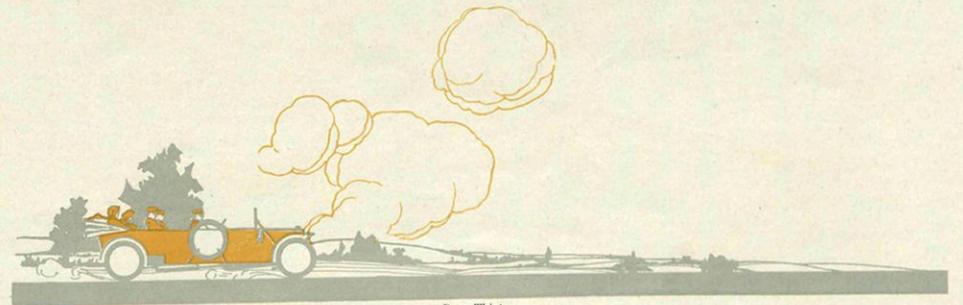
Model 28S, \$2,300.00 Model 28T, \$2,500.00

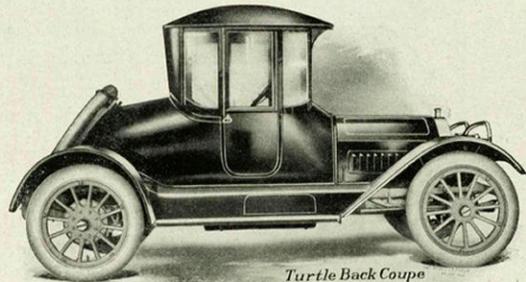


Model 27—Six Passengers

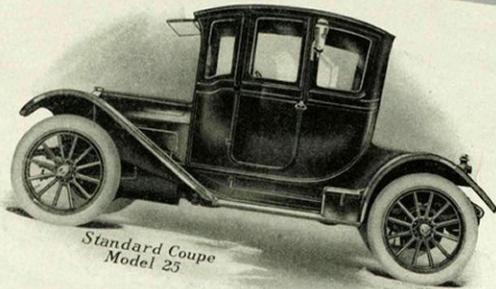
IF there is a "star" in the McFarlan line, this model is it. The demand for a six passenger model that can be used ordinarily as a four passenger car has reached large proportions. Here it is—one of the few really graceful treatments of this idea. Plenty of room in the tonneau. All passengers are comfortably seated, whether for knocking about town or a cross country run. Built only on the Series T chassis. The equipment includes a full set of Truffault Hartford shock absorbers.

Model 27T, \$2,590.00

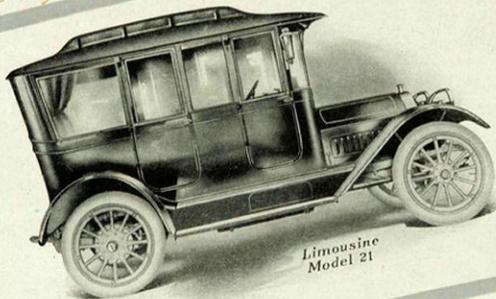




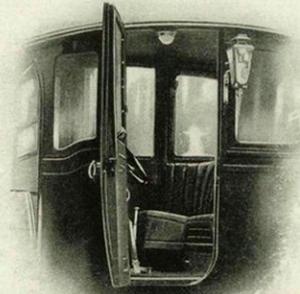
*Turtle Back Coupe
Model 29*



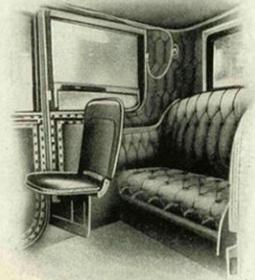
*Standard Coupe
Model 25*



*Limousine
Model 21*



Inside View Coupe

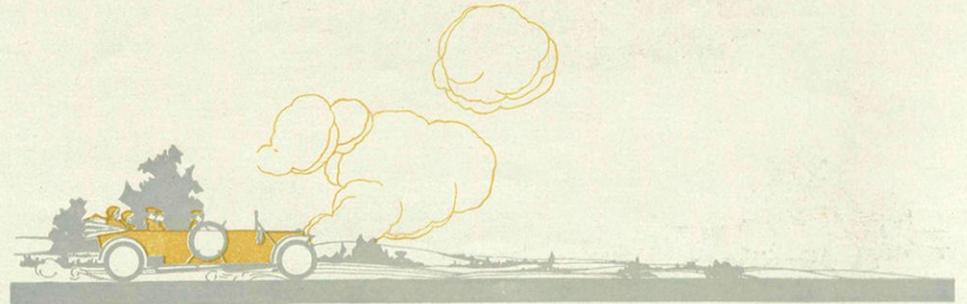


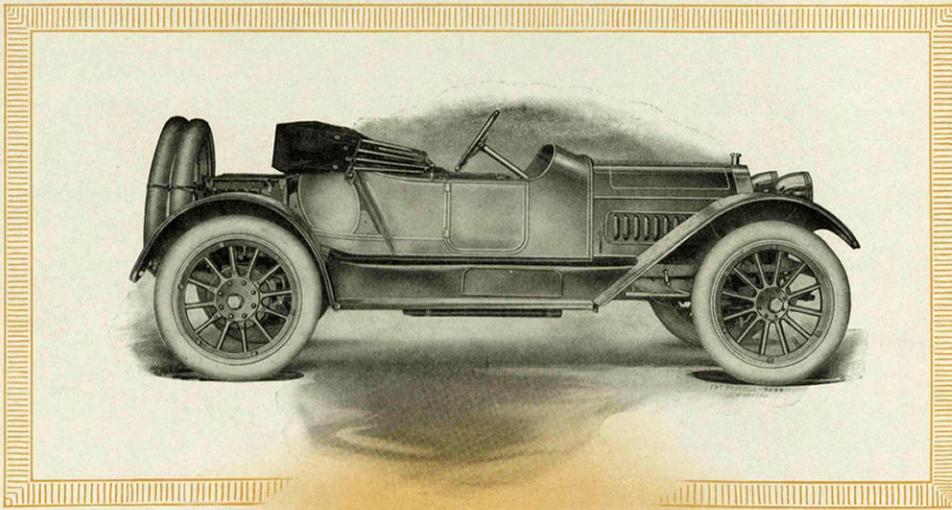
Inside View Limousine

IN the McFarlan closed cars all that is best is used. Outwardly they follow the most approved lines. Interiors give the impression of tastefully furnished, spacious rooms. Ventilation is perfect. The Model 29 Coupe is a two passenger, which can be opened up enough to make it comfortable for summer use. The Standard Coupe is a three passenger affair. The Limousines accommodate seven passengers. The glass between the two compartments may be dropped, making a one compartment body if desired. There is a bulb under the rear door that lights when the door is opened and illuminates the step. The driver's compartment is accessible from either side of the car. The equipment includes a speaking tube and all the dainty accessories.

Model 29S, \$3,100.00
 Model 29T, 3,300.00
 Model 25S, 3,100.00

Model 25T, \$3,300.00
 Model 21T, 3,700.00
 Model 21M, 4,050.00





Model 34M

A ROADSTER that is as comfortable to ride in as any touring car. Seats are tilted so passengers' position is natural, while at the same time they are more secure at high speed. There is plenty of power to handle higher than ordinary gearing, which is optional on this model, making a very fast car if desired. A double bucket seat "Speedster" model is furnished as an option under this number. This has the high, sloping cowl and true stream lines. A pointed radiator, which adds to the extremely lively appearance of these models, is optional on either.

Model 34M, \$2,750.00

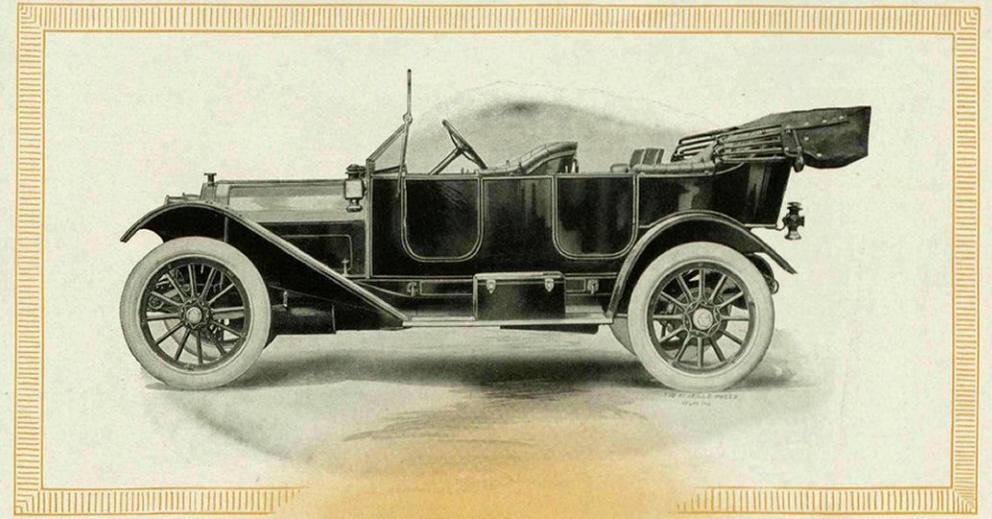
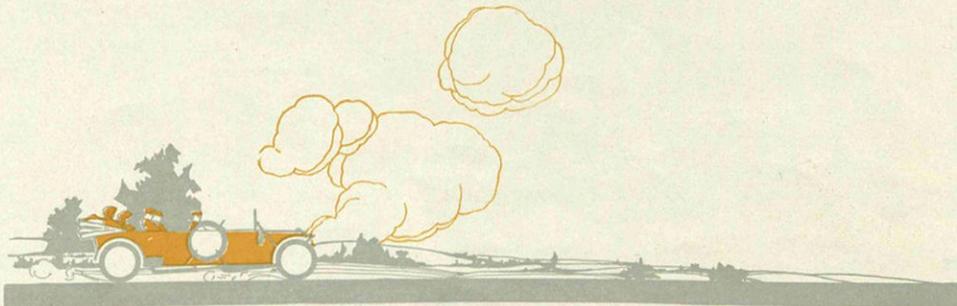
Model 35M, Speedster, \$2,750.00

Model 34S, \$2,300.00

Model 35S, \$2,300.00

Model 34T, \$2,500.00

Model 35T, \$2,500.00

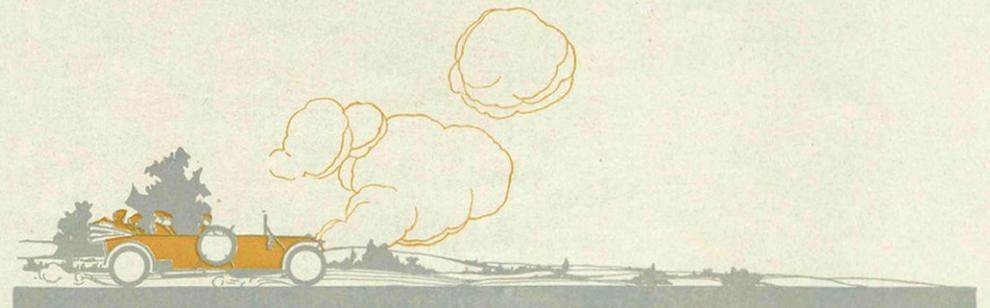


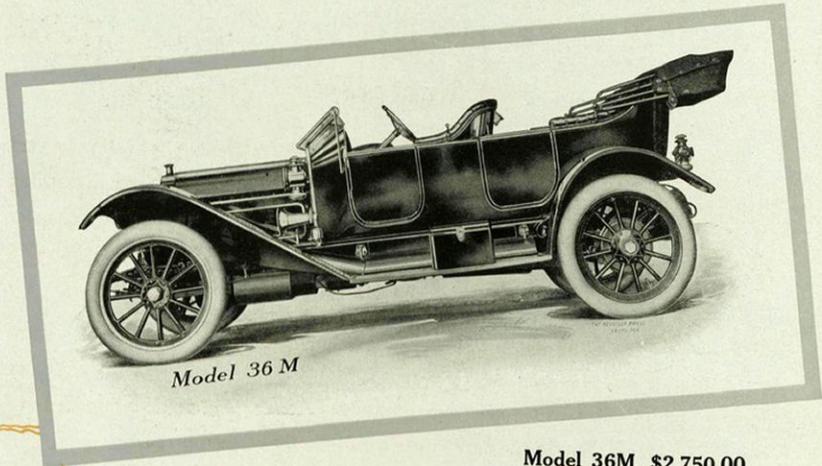
Model 33M

THE picture shows Model 33M, which is the seven passenger car of this series. The five passenger car is the same, except that it is slightly shorter in the tonneau. Both models are big, and have as much room in them as any one would want. The rear seats are 52 inches wide and the cushions are 9 inches deep. From the rear seat to the top is 39 inches, giving plenty of room for big hats. From the door sills to the top quarters is 46 inches. Doors are 22 inches wide.

Model 33M, Seven Passengers, \$2,750.00

Model 32M, Five Passengers, \$2,750.00

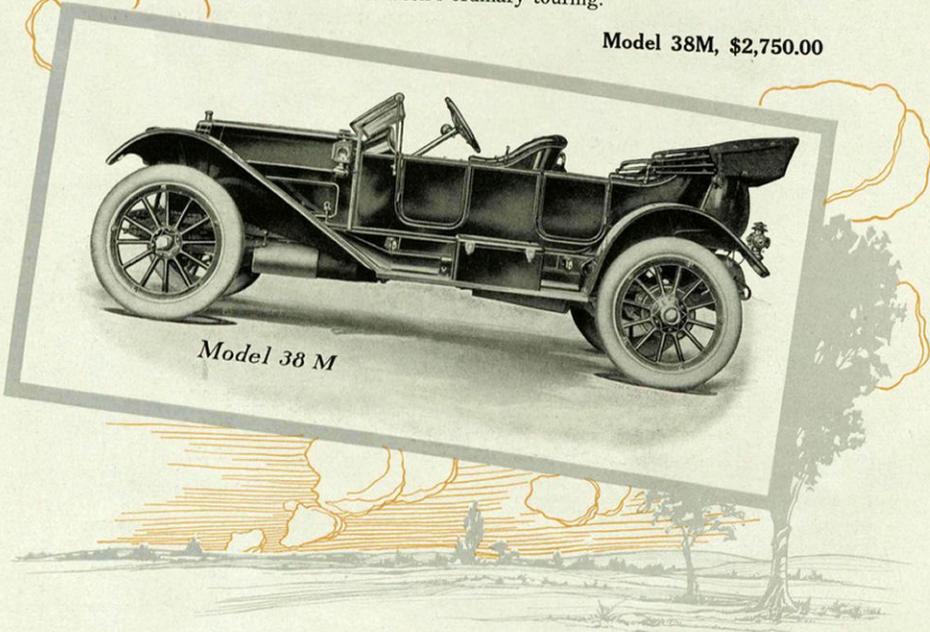




Model 36 M

Model 36M, \$2,750.00

As has already been noted, four passenger models are becoming very popular. The Model 36M here shown is a big, roomy four. The Model 38M is a special long distance touring design. Fuel and oil capacity is large enough for a week's ordinary touring.



Model 38 M

Model 38M, \$2,750.00

Guaranty



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

This guaranty is limited to the shipment to the purchaser, without charge except for transportation, of the parts 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 part or parts returned have been prepaid.

We make no guaranty whatsoever in respect to tires, magneto, accessories, etc.

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

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

Additional Extras

Seat Covers	\$100.00
Extra Rims, each	7.00
Bulb Horn	11.00
Nickel Bumper	24.00
Black Enamel Bumper	20.00
Truffault Hartford Shock Absorbers	80.00
Where not regular	

The Self Starter



LIKE the McFarlan Six as a whole, the McFarlan Self Starter was a pioneer in the field. It was not the first compressed air self starter, but it was the first starter that used a separate air compressor to supply the air.

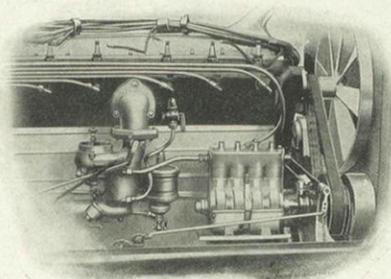
Most compressed air self starters get the required pressure from the expansion of exhaust gases. It is quite evident that if these gases are used in tires they will deteriorate quicker than they would if pure air were put in them. The McFarlan Starter supplies pure air at all times.

Pressure is supplied by the small four-cylinder water-cooled Kellogg air pump, which is shown at the bottom of this page. A pressure of 150 pounds is carried at all times. The air is stored in the cylindrical tank shown on the right side of the chassis cuts. This tank is 8 by 40 inches.

From the tank the air is led through the control on the dash to the distributor, which works practically on the same principle as the distributor on the magneto. When the button just below the air gauge is pressed, the air is admitted to the proper cylinders in sequence, and the motor is kept spinning until it takes up its regular cycle under its own power. The air pump does not run all the time. It is thrown into gear by a handle on the dash when pressure is required. The pump is run directly from the motor—no chains or makeshift connections being used.

A night valve is incorporated in the control set, so the connections on the air system are subjected to pressure only when the starting operation is in progress.

Twelve feet of hose, with proper connections, is furnished with each car, so tires may be inflated from the starting system.



View of
Starter Pump

And Air Line
To Cylinders

The Electric Lighting System



THE VESTA Electric Lighting System is used on McFarlan cars. This system is well known, and comment here is hardly necessary.

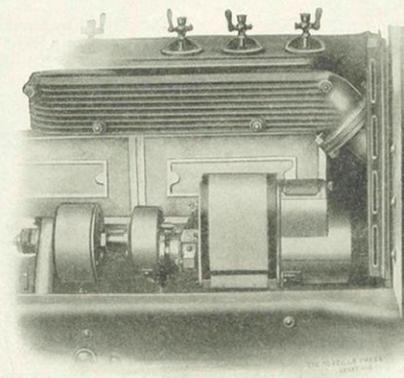
The manufacturers of it maintain a complete chain of service stations, so that McFarlan owners are never very far from expert service.

The generator is the magneto type, having permanent magnets. A governor is built into it, so that its charging rate is constant at varying speeds. This governor also serves as a cut-out when generator is not running, so that the battery can not discharge through the generator. Above a certain speed, the lights are taken direct from the generator. This reduces to a minimum the likelihood of running the storage battery down so that it

loses its efficiency. A 6-volt, 80-ampere hour battery is used. Six lights are furnished on open models, eight on closed models. On the closed models dome lights and step lights are furnished.

The headlights are 20 candle power; side lights are 4 candle power; tail light is 4 candle power. Focus of the head lights is adjustable. They may be thrown out of focus in cities where there are ordinances against glaring head lights.

The ammeter and switch for the system are on the dash in plain view of the driver. At ten miles per hour the generator will show an excess on the charging side of the ammeter with all lights burning.



View of Electric Generator

The Rear Axle

WHILE every feature on McFarlan cars has been the subject of constant efforts to improve it, the rear axle has had something more than an equal share of expert attention.

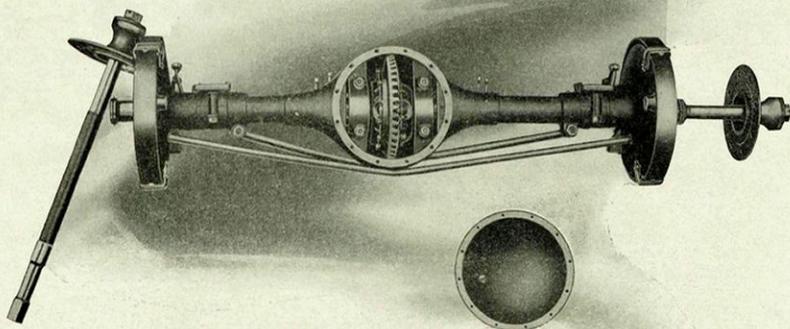
The present axle is regarded as ideal. Every bearing in it has been subjected to severe tests and placed under strains many times what they ever will be called upon to bear. The margin of safety is very large.

Some manufacturers scout the idea that an axle can be built that will actually stand up well and still have the working parts accessible. Others have such axles, but they are on very expensive cars.

Here is where the long general experience of the builders of McFarlan cars—and their long experience with one particular type of car—came in to good advantage.

It will be seen that the working parts are readily accessible for any required adjustment through the inspection hole in the rear.

The driving members carry no weight whatever—it is all carried on the strong seamless housing. When the driving shafts are pulled part way out the whole differential may be removed as a unit. The driving strain is applied at the edges of the heavy hub flanges, well away from the hub itself—plenty of leverage.

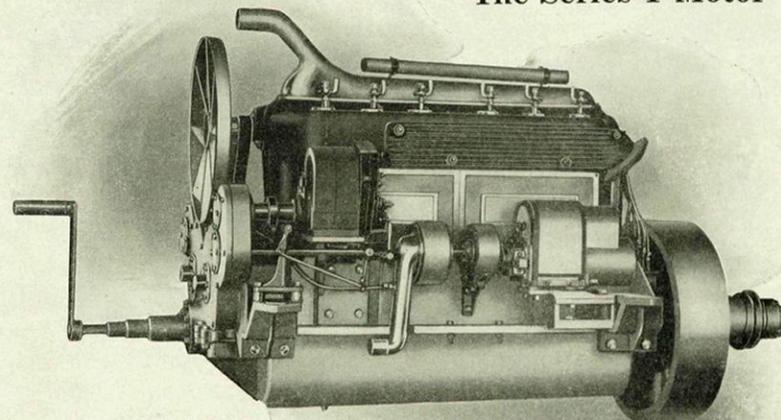


Rear Axle, with Inspection Plate Removed and Driving Members Pulled Out

The Front Axle

As has been noted, the front axles on McFarlan cars are drop forgings, heat treated. It will be noted that all steering connections are behind and above the axles.

The Series T Motor



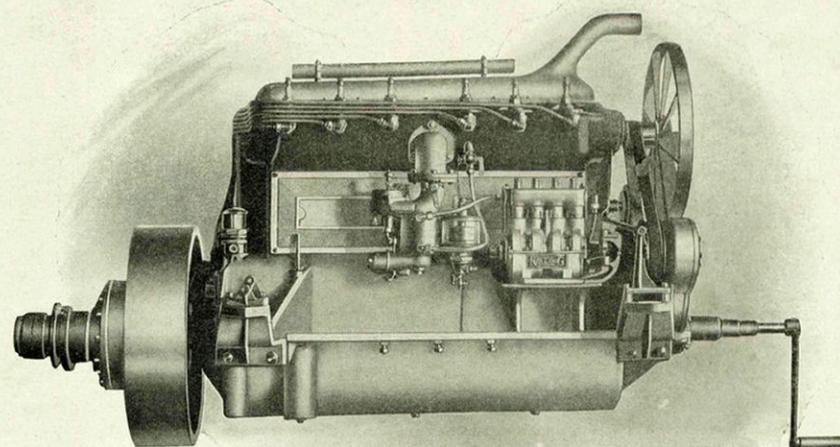
Left Side Series T Motor

The motor in the McFarlan Series T models has been developed along lines suggested by the best and most intelligent automobile motor practice of late years. The bloc casting and extremely short over-all length of it make an exceedingly stiff motor and one entirely free from bearing trouble and little, annoying knocks.

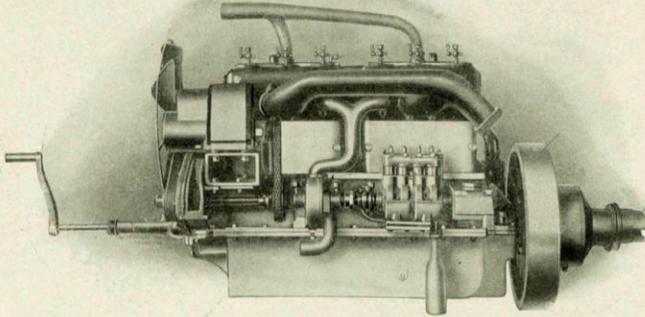
Cylinder dimensions are 4 x 6 inches, affording the most approved bore-stroke ratio. A long-stroke motor is a better puller at all speeds than any other type, and

in this T Series motor the best type of long-stroke motor is exemplified. It has more main bearing surface than the average five or seven bearing motor. Four main bearings are used. The magneto and water pump bearings are double row annular balls.

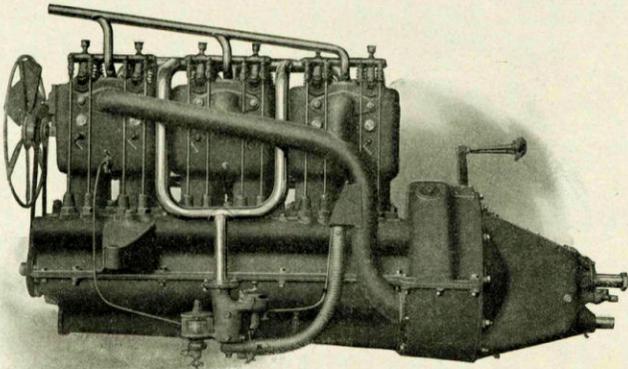
The extremely clean appearance of the motor is in line with the best ideas. At the same time, the means used in securing the clean appearance also make the motor dust-proof and absolutely noiseless.



Right Side Series T Motor



Left Side Series S Motor



Left Side Series M Motor

