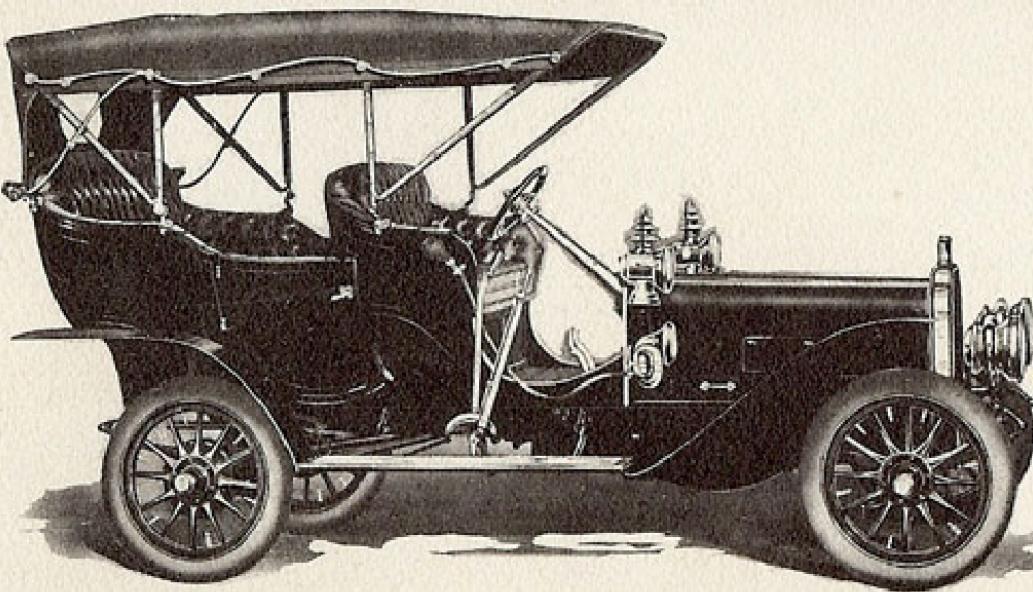
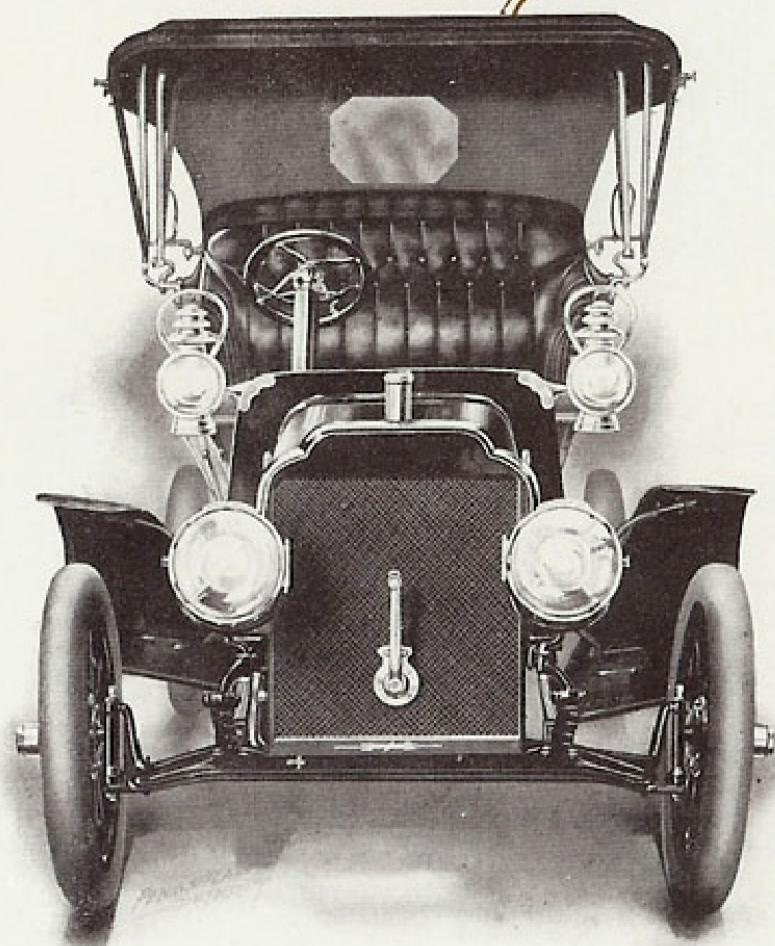


# FORD

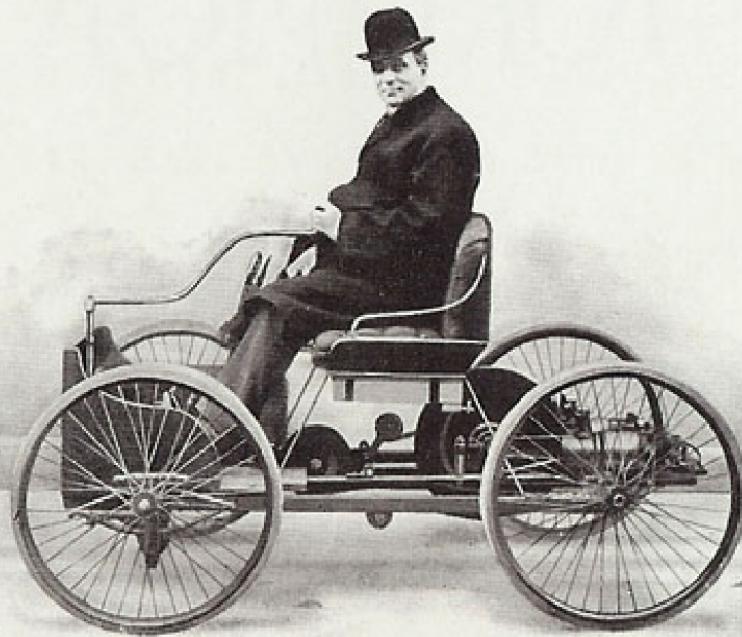


# FORD MOTOR CO.

1906



Detroit, Mich.  
U. S. A.



THE first Ford car, built in 1892-3, ran hundreds of miles in the streets of Detroit, and is still in good running order.

This car passed out of Mr. Ford's hands in 1895 and since that time has had several owners. Desiring to get possession of the car, Mr. Ford followed it from city to city, until he finally located it in a small city in Ohio, where he re-purchased it last year after being out of his hands several years. He found the car still in good running condition.

This car has double cylinders, water cooled, and considering that it has been built 14 years, is one of the most remarkable cars now in existence.



**I**N nineteen hundred and three the Ford Motor Co. put its first car on the market with a two-cylinder engine of the opposed type, now famous. It was a pronounced success.

It was a finished product as compared with the state of the industry, and the success of the company from the date of its first car was phenomenal.

Today hundreds of these same little cars are giving splendid satisfaction all over the world.

There was a strong and vital reason for all this success. The designer of the car, Henry Ford, had devoted his efforts, as only an inventor can, since 1892 and 1893, to the perfection of the automobile, or horseless carriage, and he had built many cars up to the time the first Ford car was put on the market.

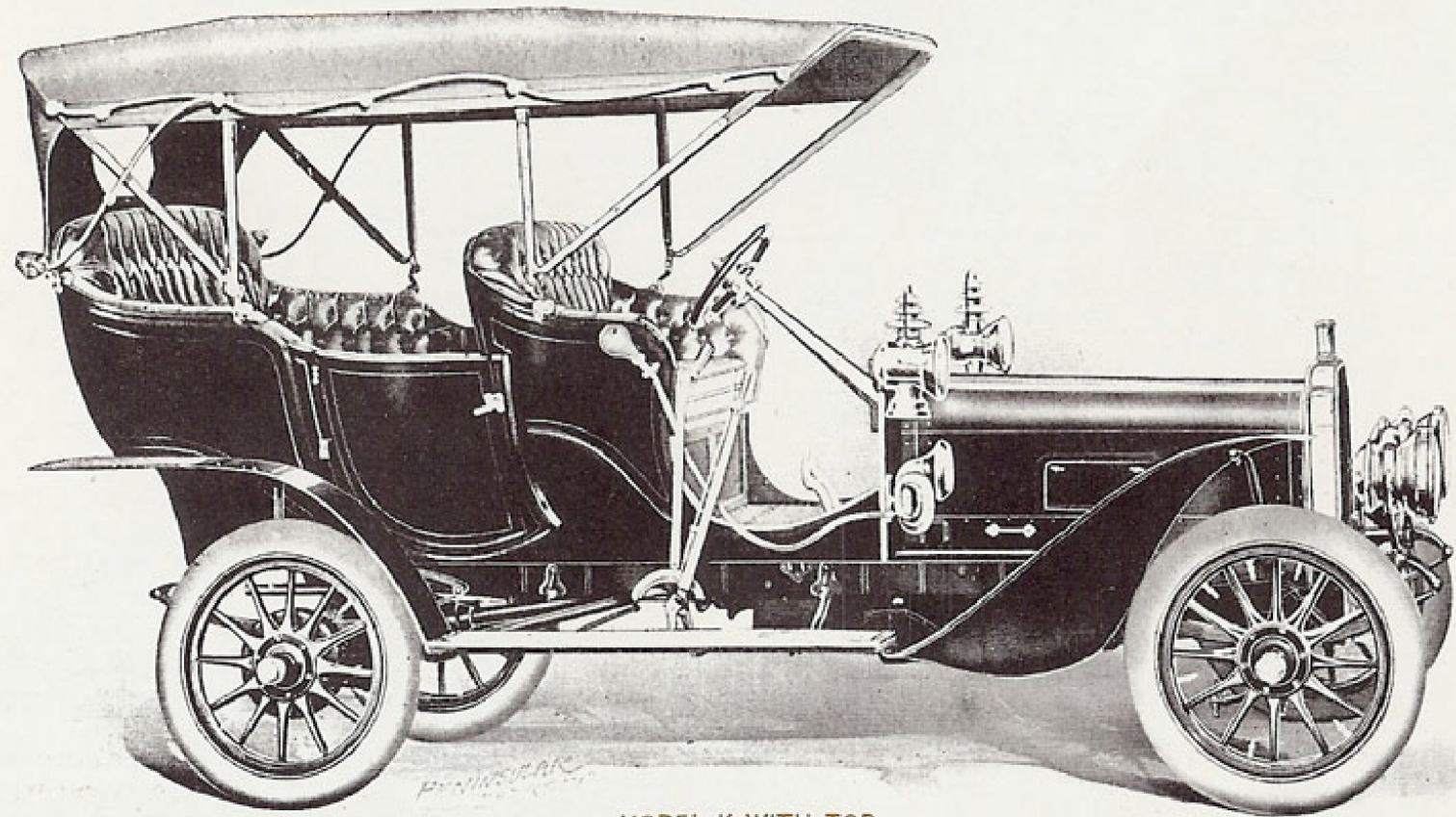
So the reason the first Ford car was a success was because it was *not an experiment*. It was built along advanced ideas of the multiple cylinder engine. It was several years ahead of the times.

The continued success of the Ford Motor Co. has been something that has attracted the attention of the automobile world, and today its output is greater than that of any automobile concern in the world, and is probably greater than the output of any *several* automobile manufacturers.

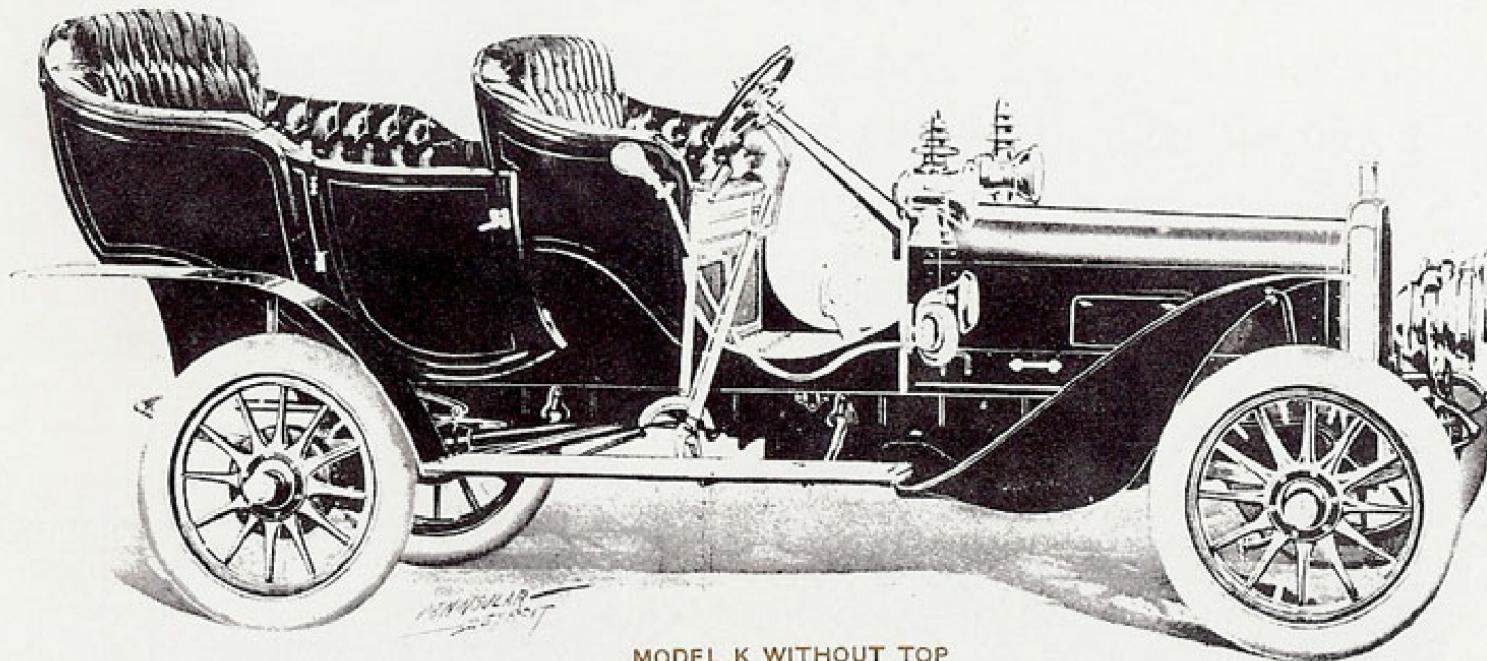
The line of cars offered this year by the Ford Motor Co. embody the usual Ford ideas. It is Mr. Ford's desire to build a car that will not be out of date next year, nor the next year, nor the year after that. The idea of an automobile user thinking he has to change cars every year is as absurd as it would have been for the owner of a carriage to feel that a rig of that character was only good for one season.

Four points must be conquered and satisfactorily settled--power, comfort, maintenance, cost.

We invite your most careful inspection of the cars herein described, as well as a practical demonstration from our various agencies and branch houses.



MODEL K WITH TOP



MODEL K WITHOUT TOP

## Specifications, Model K

Motor, 6-cylinder, vertical,  $4\frac{1}{2}$ " bore x  $4\frac{1}{4}$ " stroke: 40 H. P.  
 Speed, 50 miles per hour, down to four miles per hour, on the high gear.  
 Improved planetary transmission, with improved clutch.  
 Pressed Steel Frame.  
 114" Wheel Base.  
 Water Cooled; circulation by geared pump.  
 Perfected Magneto ignition.  
 Mechanical Oiler.  
 Gasoline Tank under seat, containing 15 gallons,—good for 250 miles.  
 Water Contained in Radiator.  
 Hub Brakes,—internal expansion, with lever control.  
 Emergency Brake on driving shaft, controlled by foot lever.  
 Tops Extra, Prices on application.

Springs, full elliptic on the rear, and half elliptic on the front.  
 "Famous Ford" Direct Drive Construction.  
 Ample roller bearings on rear axle, with ball bearing thrust—special design.  
 Ample Ball Bearings on front wheels.  
 Wheel Steering (Fitted with Ford reduction gears) takes all the strain from steering over the roughest road; an exclusive Ford feature.  
 Luxurious Body, ample for five passengers.  
 Weight, 2,400 pounds.  
 56-inch tread.  
 Wheels, artillery, 34-inch.  
 Tires, 4-inch, double tube clincher.  
 Lubricating oil sufficient for 250 miles.  
 Color, Royal Blue.  
 Equipment, two side oil lamps and tubular horn.  
 Gas Lamps Extra, Prices on application.  
 Price, \$2,500, f. o. b., Detroit.

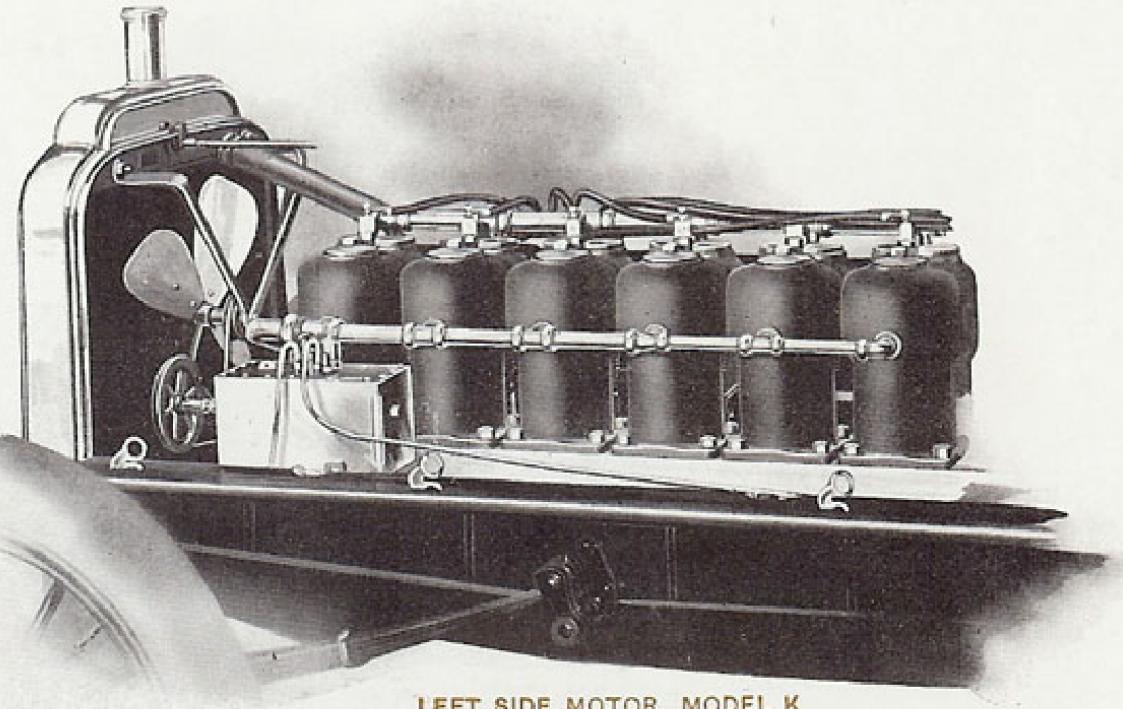
## The Motor

THE six vertical cylinders are cast separately with integral head, valve chamber and jacket. The interchangeable, mechanically operated valves are placed on one side, thus necessitating but one cam-shaft, one set of gears, simplifying the casting, and exposing less cylinder wall to the heat of the burning gas. The cylinders are made of a special cast iron, carefully bored and reamed.

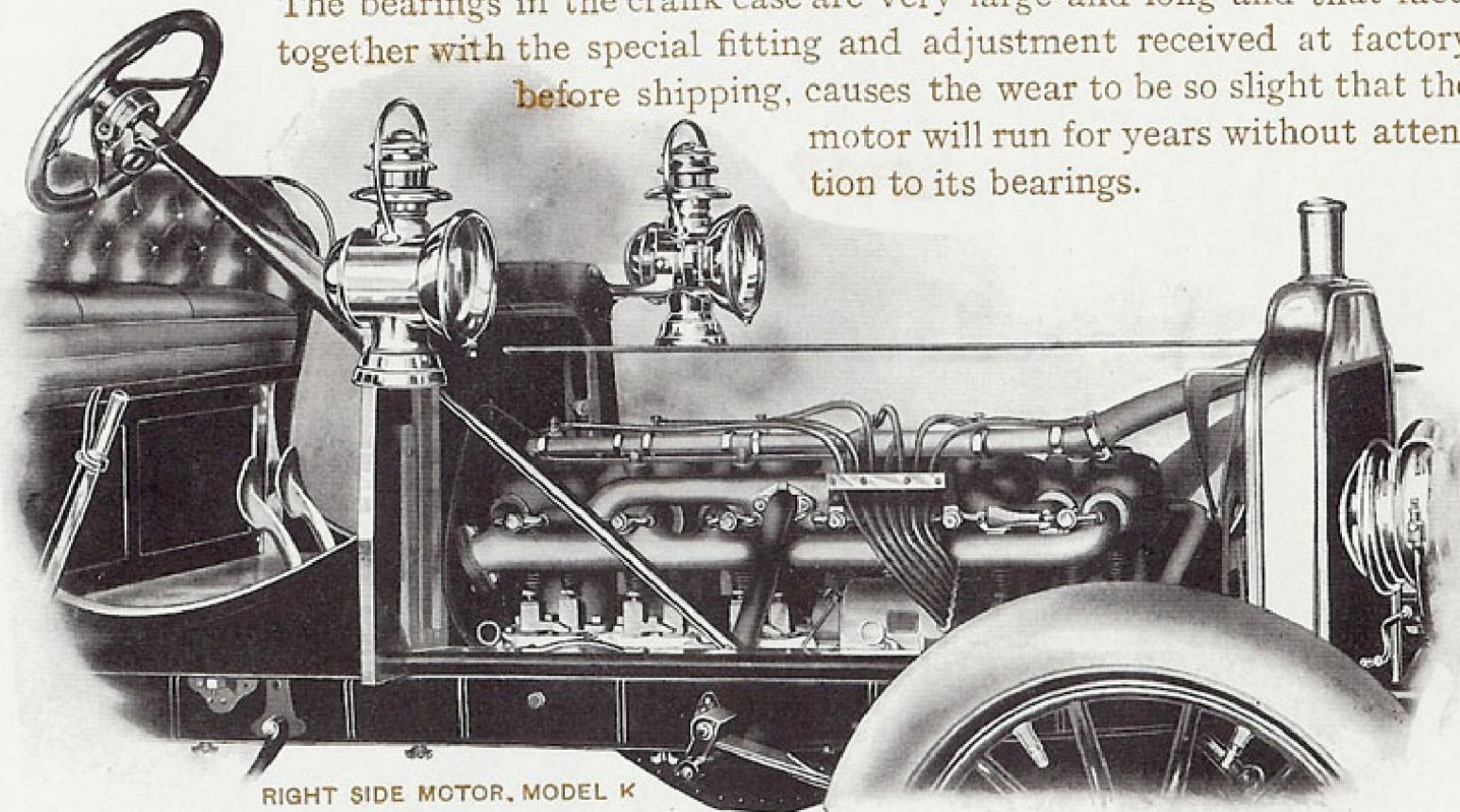
The pistons, piston rings, wrist pins and crank-shafts are machined, then ground to size, which insures an absolutely perfect fit.

The crank-shaft is a solid drop forging with a bearing between each cylinder.

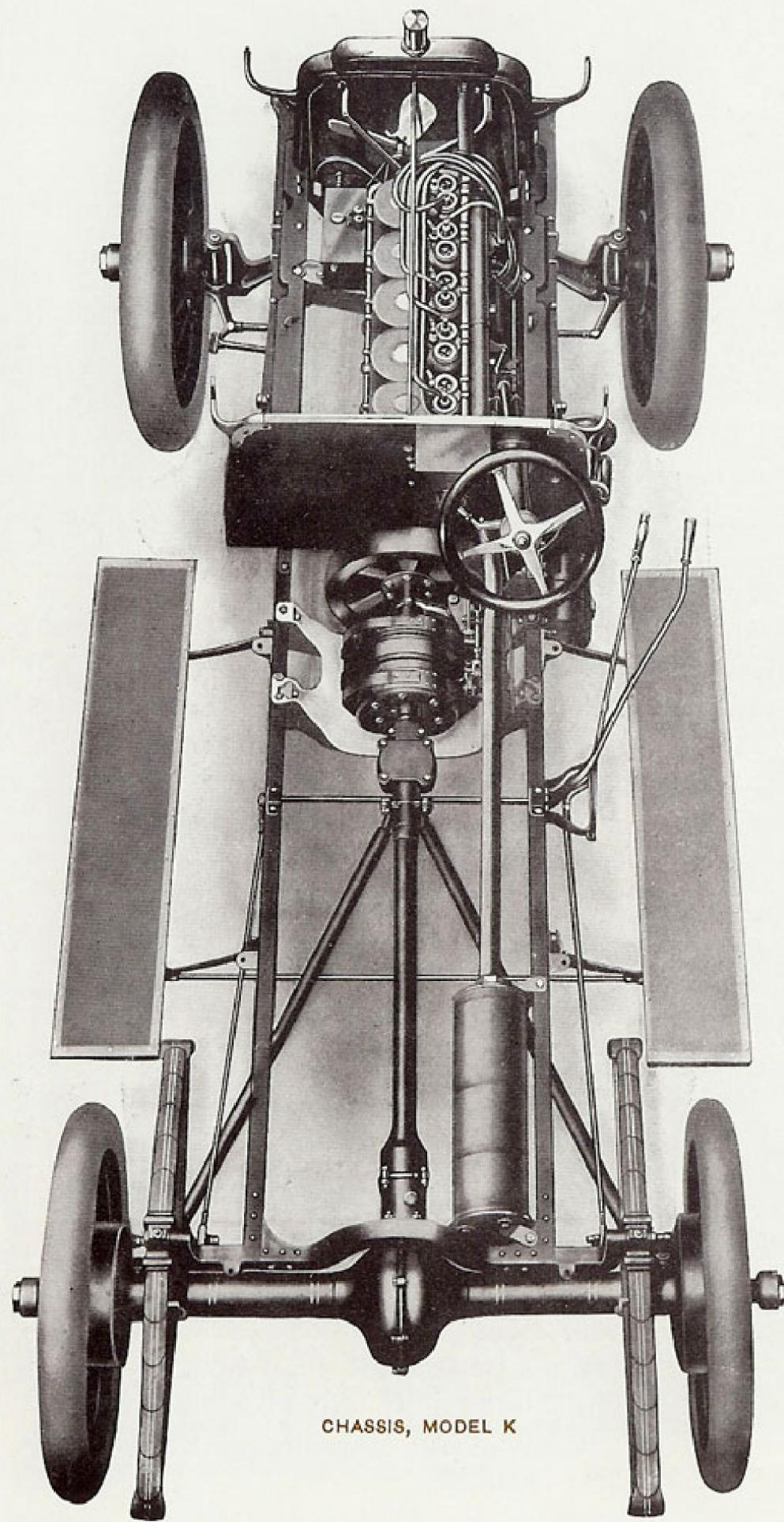
The bearings in the crank case are very large and long and that fact, together with the special fitting and adjustment received at factory before shipping, causes the wear to be so slight that the motor will run for years without attention to its bearings.



LEFT SIDE MOTOR, MODEL K



RIGHT SIDE MOTOR, MODEL K



CHASSIS, MODEL K



## Model K

THE constant study of the automobile situation since its inception, the experience secured from manufacturing and marketing thousands of successful motor cars, has enabled Mr. Ford to present a line of cars this year that will be accepted as a standard type of design for years to come. A car of this character could not be designed or built by anyone who had not had years of practical, successful experience.

While the car abounds with radical features, not one is an experiment. Every one has been tried out at the expense of the Ford Motor Company. Every feature is along advanced ideas and is in the direction toward which all other manufacturers are tending.

This car does not merely embody the carrying into execution of an idea of some one important phase of automobile construction, but is the careful evolution and development of every detail of the car, and it is these minute details that make the Ford Model "K".

It is difficult to call your attention to the most important feature of this car, for of what value is simplicity of transmission if the ignition system is faulty? Of what benefit is the six-cylinder engine of wonderful power, when a weak rear axle drops your car in the road forty miles from home? What satisfaction can the automobilist get out of the fact that his oiling device is perfect after his steering equipment has gone back on him at a critical moment? So, a car is only as strong as its weakest part, and, therefore, it must be a well-balanced car.

It is not a difficult matter to make an engine so powerful that it will, with muffler cut out and full lead on the engine, snort up most any hill that is not perpendicular, even if you do not like the rattle and bang and repair bills resulting from the weight and vibration of an engine so heavy. Nor would it tax a designer, or even a bright machinist, to build a car that would not work up a big repair bill, but with so little power that it fails entirely when mud and sand and hills are encountered.

So we see that it is not only necessary to have **power** but it is necessary to have the proper design and light construction and serviceability. The demand is for more power. It is a rational, sensible and reasonable demand.

All prominent motor manufacturers acknowledge a limit in the size of a four-cylinder motor, beyond which trouble arises from added weight, decrease of motor speed, loss of motor flexibility, and increase of vibration due to the powerful impulses and heavy reciprocating parts. In the **six vertical cylinders** a happy solution of the question is found. The driving force is divided into six power strokes. The **six cylinders** develop light impulses in rapid sequence—in fact, before one impulse ceases the next begins. This applies the power so constantly and so uniformly to the driving shaft that no pulsations and no vibration is felt. This **continuous, unbroken** application of force, this constancy of torque, gives a smoothness of running, closely approaching the electric dynamo or steam turbine. The over-lapping impulses raise the pressure to a very **high** average, which greatly accentuates the gain in power.

## Ignition

The ignition is by high-tension magneto with an entirely independent and separate system in reserve fed by battery. This double system will be appreciated by experienced automobilists. The magneto works on an entirely new system and is far superior to any magneto yet constructed. One of the special features lies in the fact that the permanent magnets build up in use instead of weakening, as is the case with all other devices of this character. It produces a spark 3-8 inches long at fifty revolutions per minute, and three inches long at six hundred revolutions. Oil on the sparking plugs does not seem to affect the ignition owing to the high voltage of the secondary current. When cars are wired for both magnetos and storage batteries, the operator changes from magnetos to storage or from storage to magnetos by throwing a switch.

## Transmission

The Ford cars are designed with the idea of traveling over all ordinary roads, up and down the steepest grades, through long stretches of deep sand, etc., without touching the change speed lever. A light car and ample power permits traveling on direct drive practically all the time, so seldom is a lower gearing necessary. It is, therefore, obvious the simpler the device the more satisfactory it will be. The Ford system of planetary transmission is beyond question the most practical, most substantial and simplest arrangement of gears ever incorporated into the mechanism of an automobile. It absolutely does away with any possibility of confusion in operating the car. There

are not two or more levers to operate, each depending upon the proper manipulation of the other. With the Ford system of control every motion is one which the operator would instinctively make. It requires little thought. If the wrong lever is applied the only possible result would be the stopping of the car. The Ford system of control is designed with especial effort to carry to the extreme that mostly desired, but often neglected, feature of a motor-car—**Safety**.

Compare the necessary operations of the sliding gear system with the simple, yet powerful, planetary system as perfected in the Ford car. On direct drive no gears are used, no gears revolving idly in a bath of oil; no resistance or frictional loss in the Ford transmission.

The Ford transmission, giving two forward speeds and one reverse, consists of a train of hardened steel gears, of extra wide face, always in mesh, and contained in a strong iron case and well protected. On the direct drive the gears are locked and the case revolves and acts as added flywheel weight. No more simple, efficient or positive arrangement could be devised. On the low gear a friction band holds the case stationary, thus putting into action a speed-reducing train of gears which are equally as efficient and powerful as the best system of sliding gears. The reverse is obtained by a friction band holding a disk connected to the reverse gear within the case. The adjustment of all speeds is very simple, consisting of adjusting nuts on each device, which are very accessible. The train of gears within the case are constantly submerged in a bath of oil, which is introduced through a small plug-hole in the outer circumference of the case.

The direct drive is engaged through a multiple disk clutch, the most satisfactory mechanism yet devised. This clutch takes hold softly and does not jerk the car when applied. So gently does this clutch engage, Ford cars can be started from a standstill on the direct drive, without calling into action the gears of the low speed.

To those unfamiliar with the construction of a multiple disk clutch we will explain it briefly. Consider several large bronze disks between each of which is placed a smaller steel disk. If the small disks are connected to a shaft and the larger disks to the transmission case, then when the disks are pressed tightly together it is clear that the large area of frictional surface would make an ideal coupling, easy to operate, quick to release and require little, if any, adjustment after long, continued service.

### Controlling Levers

A small horizontal throttle lever just beneath the steering wheel regulates the quantity of explosive mixture leaving the carburettor this variable quantity controlling the speed and power developed by the motor. This lever is on the left side of the steering column. On the right side is another small lever which regulates the time the charge on the cylinder is ignited. These levers are practically all that are used in the 1906 Ford cars, and control the car from the beginning of a trip to the end, regardless of hills, sand, mud or congested traffic.

A vertical lever at the right of the seat controls, with the least possible inconvenience to the operator, the direct and low gear, the former being engaged at the extreme forward position of the lever, the latter at the extreme rear position, the mid position being neutral, the

motor being disconnected. The reverse pedal is on the footboard. A second pedal on the footboard operates the powerful emergency brake on the driving shaft. A second vertical lever to the right of the seat operates the internally-expanding hub brakes on the rear wheels. There are, therefore, counting the reverse, three brakes available.

### Axles

The rear axle of the six-cylinder Ford touring car is, we firmly believe, the strongest, best supported axle ever constructed for automobile use. The outer sleeve is 3 inches in diameter. The spring perches are substantially pinned and then brazed. Hyatt Roller Bearings are used throughout this axle, and are extra long and large. This axle will last for years without trouble.

The front axle is a one-piece steel drop forging of I-beam section, being extra heavy near the spring supports, the point of greatest strain.

### Body

Special attention has been given to the body of Model "K" to make it of most pleasing design. It is of the Victoria type with swelled panels and graceful in every line, yet eminently distinct in design. The seats are large, roomy and handsomely upholstered with buffed leather, rolling well back over the top edges and tufted over coil springs and curled hair.

### Springs

The springs of Model "K" have been given careful study. The rear springs are of the full-elliptic pattern while those in front are half-elliptics, the front end of front spring being hinged directly to the extension arm of the frame and the rear end connected through swinging

shackles to supports fastened to the steel side frame. These springs are extra long, and are made of a specially fine quality of steel which gives great strength and elasticity.

### Wheels

The wheels are of the wood artillery pattern, built of thoroughly seasoned second-growth hickory with spokes slightly dished, giving extra strength and flexibility and especially well designed to withstand extreme side-strains when turning corners at fast speed. All four wheels are 34 inches diameter, and are equipped with four-inch clincher tires.

### Steering Gear

Upon no part of the car does more responsibility rest than the steering mechanism. The new steering device on the Ford cars has received more favorable comment from mechanical engineers and automobile experts than any other device brought out this season. It is without back-lash or lost motion; cannot bind or stick. The reduction gears are of planetary principle and are housed in small brass drum just beneath the steering wheel. This construction allows of a solid construction at the lower end of the shaft, and makes it possible to steer the car with a minimum of effort.

### Carburettor

The carburettor is of the latest approved, automatically compensating type and supplies a perfect mixture to the motor regardless of engine speed or position of the throttle.

### Frame

The frame is of pressed steel, channel section, carefully designed to give ample strength to sustain the load without "sagging"; of sufficient rigidity or stiffness to withstand the strains over rough or uneven road surfaces.

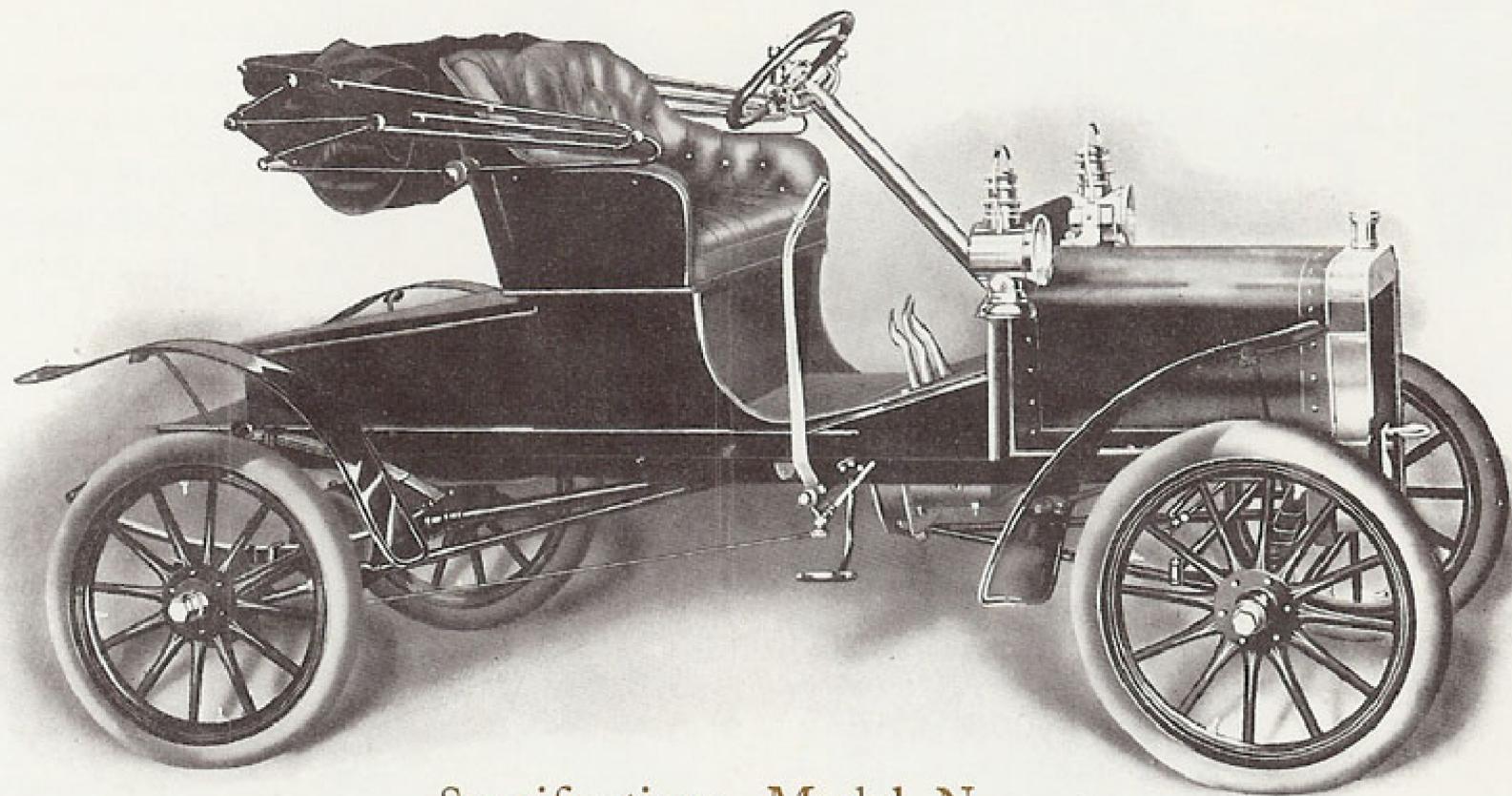
# Model N



N producing Model "N", a four-cylinder runabout to sell for \$500.00, Henry Ford has taken a mighty bound in advance of competitive manufacturers. Building such a car with material and workmanship the very best, is the beginning of a revolution in the automobile business. It means you will not be obliged to pay tribute to a manufacturer for a product that is now a necessity. Full value for the money is given. The general public has been clamoring for a substantial car at a price commensurate with other manufactured commodities. That such a car would eventually be offered has been the conviction of many who have closely followed the progress of motor-vehicle manufacture, and for that car they have been waiting. However, to build such a car means more than is realized by the average citizen. The magnitude of such an undertaking can be better grasped when it is known that special machinery, costing hundreds of thousands of dollars, must be installed to build that one type of car. It means that thousands of such cars must be constructed to reduce original cost of material and establish regular shop routine. It is therefore obvious to all that such a car dare not have one single weak spot. Every feature, every principle, must be thoroughly proven and its merit accurately determined. It must be of standard construction, free from freakish ideas and theoretical innovations, for it must be built without change or alteration for several years. That is why the Ford Company so thoroughly tested every detail of Model "N" before beginning its manufacture. No cheap material or experimental devices enter its make-up. Model "N" is a known quantity from carburettor to muffler, from tire to top.

## Motor

The Motor is of the four-cylinder type, cast in pairs with valve chambers and water jacket integral. The valves are all on the left side, lifted by vertical push rods working through phosphor-bronze guides in the crank case. The cam-shaft and the cams which work the push rods are cut from one solid piece of steel. This eliminates all possibility of the cams working loose, (a common occurrence heretofore,) and throwing the Motor out of "time" as well as causing a disagreeable knock or pound.



## Specifications, Model N

Motor, 4-cylinder, vertical; cylinders  $3\frac{1}{4}$ " bore x  $3\frac{1}{8}$ " stroke, 17.92 H. P.

Speed, 40 miles an hour down to 3 miles on high gear.

Improved planetary transmission, with improved clutch.

84-inch wheel base.

Pressed steel frame.

Water cooled.

Ignition, two sets of dry cells.

Gasoline Tank, under seat, containing 10 gallons, sufficient for 200 miles.

Water contained in radiator.

Hub brakes—internal expansion, with lever control.

Emergency brake on driving shaft, controlled by foot pedal.

Tops Extra, Prices on application.

Springs, full elliptic in rear, and half elliptic in front.

"Famous Ford" Direct Drive Construction. Roller bearings on rear axle, with ball-bearing thrust—special design.

Ball Bearings on Front Wheels.

Wheel Steering (Fitted with Ford reduction gears) takes all the strain from steering over the roughest road; an exclusive Ford feature

Luxurious Body, carrying two passengers.

Weight, 800 pounds.

56-inch tread.

Wheels, artillery, 28-inch.

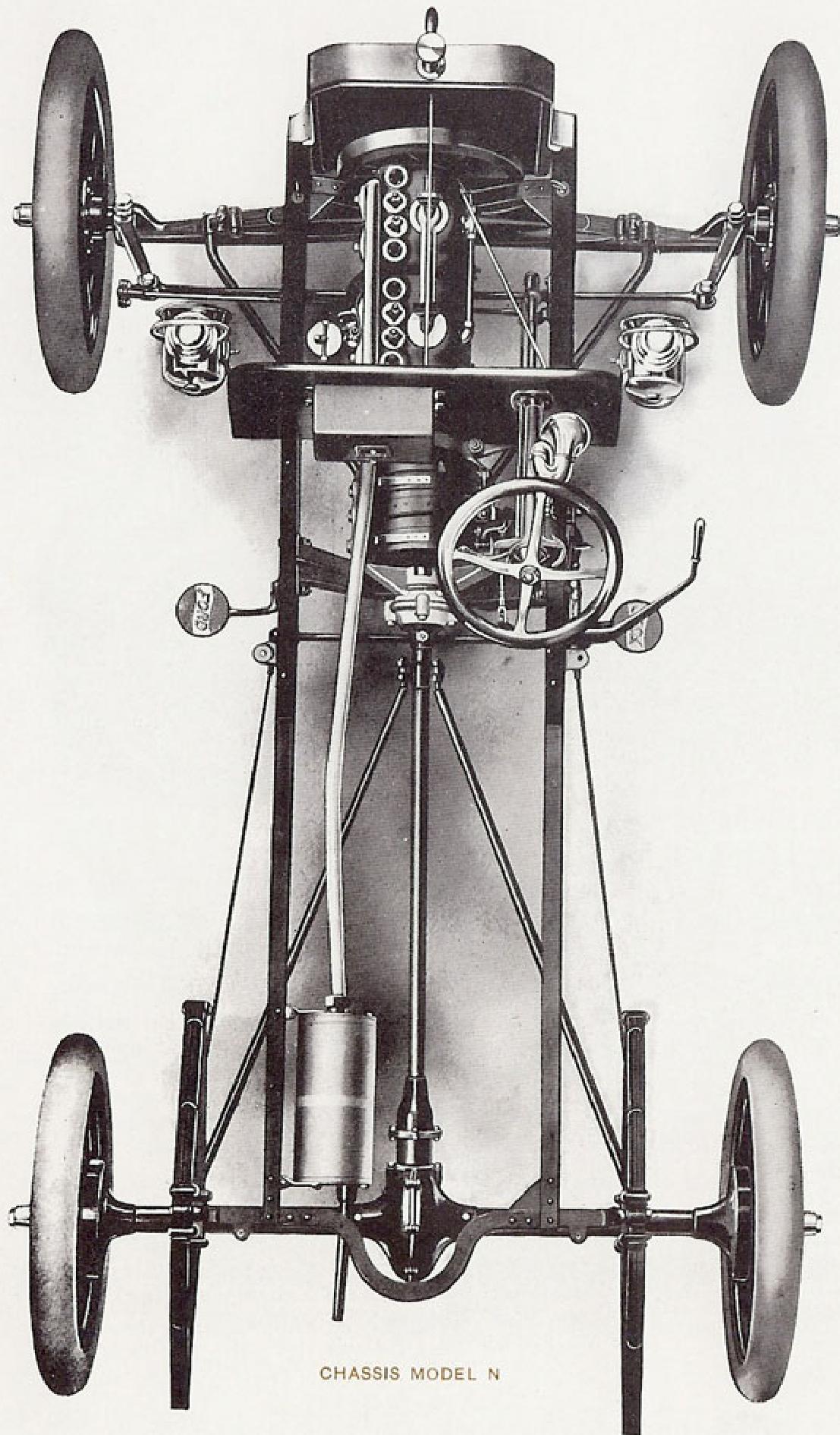
Tires,  $2\frac{1}{2}$  inch, double tube clincher.

Lubricating oil sufficient for 200 miles.

Color, Maroon.

Equipment, two side oil lamps and horn.

Price, \$500.00, f. o. b., Detroit.



## The Axle

The Axle is a solid dropforging of I-beam section and is supported by radius rods terminating in a common joint in the center of the cross-bar supporting the transmission gear case, thus giving a three-point support.

## The Rear Axle

The Rear Axle is equipped with Hyatt Roller Bearings throughout. The general construction of the axle is identical with that of the large Ford touring car. This axle is especially well constructed and the most mechanical rear axle mechanism ever placed in any car in this or any foreign country. The two-side radius, or strut rods, fastened to the axle near the rear wheels, are joined to the upper end of the sleeve enclosing the driving shaft—giving another triangular support.

The sleeve surrounding the shaft terminates in a large globe joint in the heavy frame cross-bar. Within the globe is the flexible universal joint connecting the power plant with the driving shaft. The lower end of the shaft carries a small bevel pinion meshing a large bevel gear on the differential with a relative ratio of  $3\frac{1}{2}$  to 1.

The cam-shaft is enclosed within the crank-case and is constantly splashed with oil. The crank-case is an aluminum casting, cylindrical in form, with end plate carrying the extra long bearings for the shaft, and the rear plate extending back and enveloping the transmission gear excepting on top where is located the various operative levers.

The Motor and transmission gear being combined makes a very compact power plant, and is supported in the chassis frame at three points. The three point suspension principle is carried out extensively throughout the entire car.

### The Body

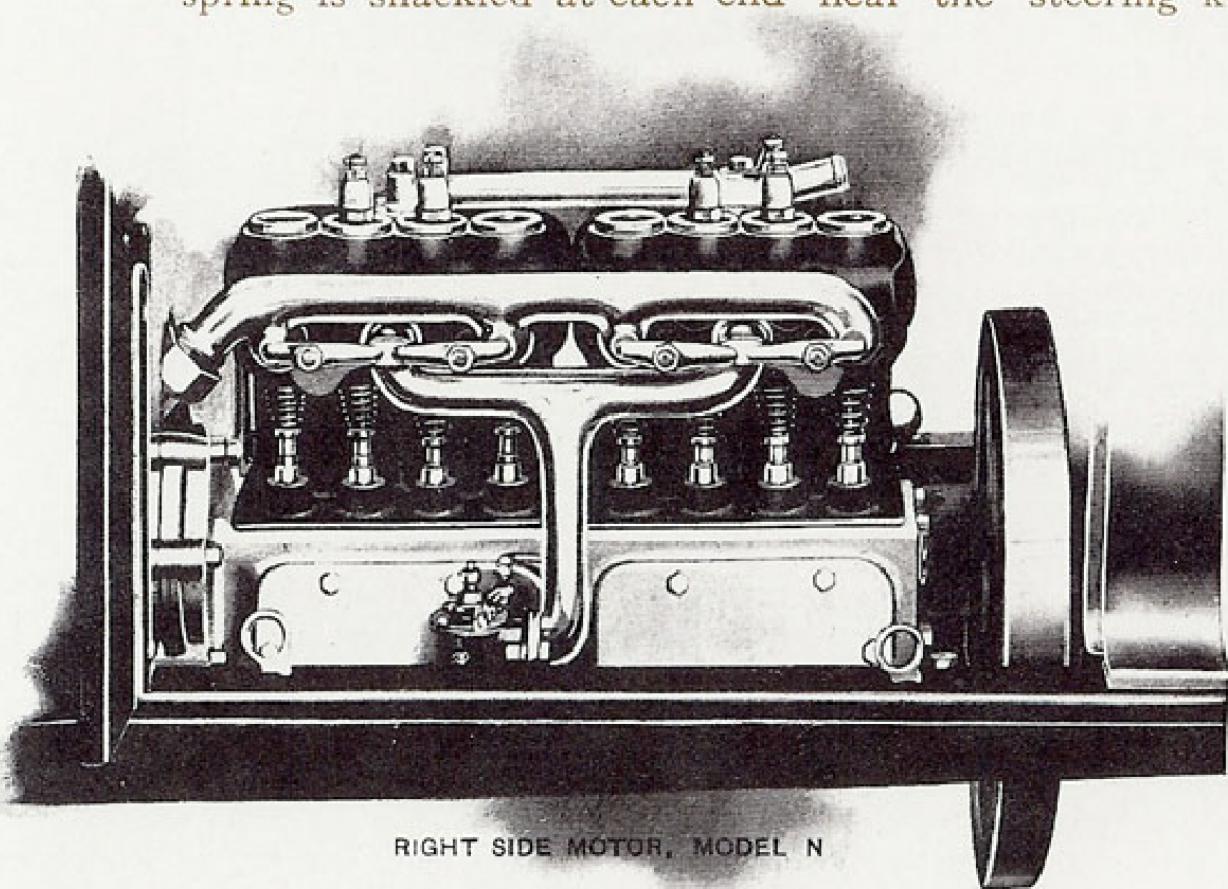
The Body is suspended at three points—on the full elliptic springs in the rear and swivelled on the center of the transverse, half-elliptic spring in front, the front spring is shackled at each end near the steering knuckle yoke.

### Ignition

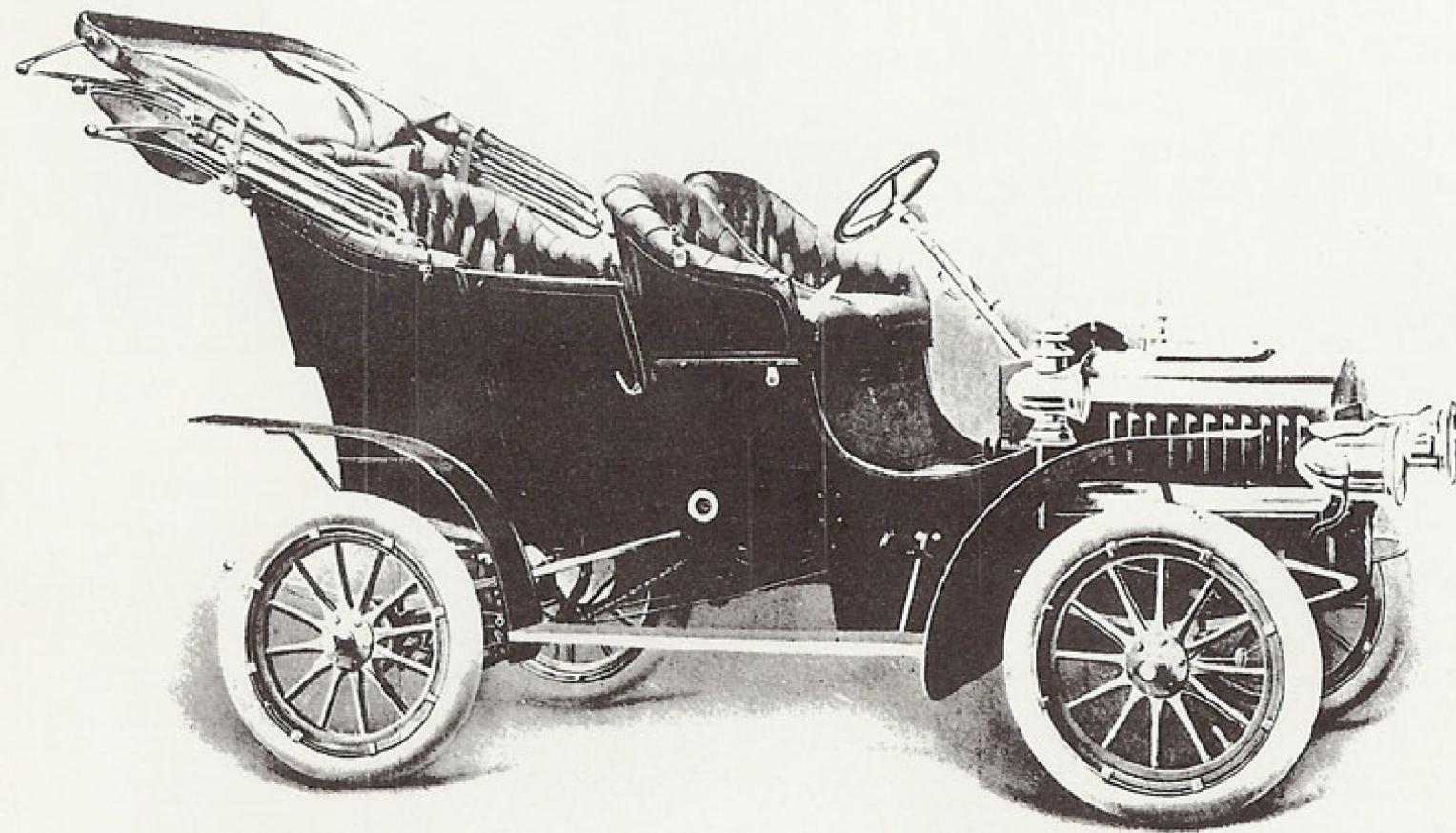
Ignition is of the jump-spark system, fed by dry cell batteries through a Splitdorf four-unit coil.

### Carburettor

The carburettor is of the latest approved automatically compensating type. A constantly correct mixture of gasoline and air is supplied, regardless of engine speed or throttle position.



RIGHT SIDE MOTOR, MODEL N



### Specifications, Model F

Model F is the general all around car for the man who wants a powerful runabout or a comfortable and fast touring car for five people at a moderate investment and low cost of operating and maintaining, capable of taking all kinds of roads.

Weight, 1,400 pounds.

Motor, Ford two-cylinder horizontal opposed  
 $4\frac{1}{2} \times 4$ .

Wheel Base, 84 inches.

Tread, Standard Wagon.

Wheels, 30 inches.

Tires,  $3\frac{1}{2}$  inch double tube.

Maximum Speed, 35 miles an hour.

Capacity Gasoline Tank, 9 Gallons.

Capacity Oil Reservoir, 3 pints.

Cooling, Water Capacity, 4 Gallons.

Color, rich dark green, yellow running gear.

Upholstering, black, of best leather, handsomely tufted.

Equipment, 2 side oil lamps, post horn and necessary tools.

Price, \$1,000.00, f. o. b., Detroit.

CLIPPING FROM "NEW YORK SUN"

JANUARY 17

# THE FORD RUNABOUT

## AT THE SHOWS

Crowd at Armory Show—Visitors Intent on Seeing All of the 1906 Models—A Novel Runabout.

All day yesterday the attendance at the armory show was very heavy, proving conclusively that the annual exhibition of automobiles and accessories in this city has outgrown the capacity of any one building. Though, of course, there were many New Yorkers present a goodly number of the visitors were out of town folk, some of them automobile tradesmen, but by far the greater majority intending buyers who proposed to see all of the 1906 models before purchasing. During the morning and afternoon the bulk of the visitors seemed most interested in American runabouts and light touring cars, but those in charge of the exhibits of foreign cars were solaced by the attention their wares received from many of the evening throng.

The sensation of the armory show, however, was the arrival of the much heralded \$500 four cylinder runabout in the morning. Beyond question this particular model has created more talk among the automobile fraternity in the past few months than any other single type of car in the history of the automobile industry. The usual type of runabout has had a single cylinder engine and the prices have heretofore ranged from \$650 up. Consequently when it was announced late last summer that a Michigan maker intended to turn out a four cylinder runabout for 1906 which would have a maximum price of \$500, there were not wanting those who declared such a thing a commercial impossibility. It might be possi-

ble, said the critics, if the concern intended these cars merely as advertisements and was willing to charge the loss up to the advertising appropriation.

Those in charge of the exhibit, however, said yesterday that the concern would make a profit on the cars because they would manufacture at least 10,000 of the runabouts for the 1906 selling season. So great a crowd of sightseers besieged the space where the runabout was exhibited that early in the afternoon it was necessary to mount the little car on a platform to enable people to view it. The runabout shown is finished in maroon and has a very trim appearance. The car is shown with a folding top, for which an extra price is charged. The engine is mounted in front of the dashboard, and the hood was removed so as to allow a close inspection to be made of the power plant.

The four cylinders are cast in pairs and develop fifteen horse-power, allowing forty miles an hour to be made if necessary. It is fitted with two speeds forward and a reverse, and the engine is of the water cooled type. Hub and transmission brakes are supplied, both of these being applied by the foot pedals. The gasoline and spark levers are mounted on the steering wheel and the speed changes are made by a lever at the driver's right hand. The designer of the car said yesterday that he was willing to wager that the four cylinder engine had fewer parts than any single cylinder engine in either show.

## CLIPPING FROM "NEW YORK GLOBE"

REGARDING THE FORD EXHIBIT AT THE  
NEW YORK AUTOMOBILE SHOW

# NEW FORD RUNABOUT AT ARMORY SHOW

Lively Interest Aroused by Latest Auto Construction—Big Sales and Record Crowds Both There and at the Garden.

BY ALFRED REEVES

There was a sensation at the Sixty-ninth Regiment Armory automobile show today, caused by the arrival of the first Ford runabout, of which at least 10,000—and possibly twice that number—are to be made this year, to sell at \$500 each. It is the first machine to be completed, and naturally aroused the keenest interest among the exhibitors and all other automobilists present.

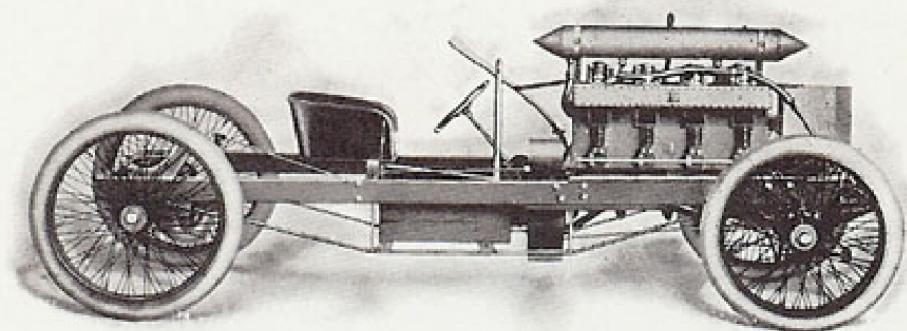
The new car will prove much better than many anticipated, irrespective of the price. James Couzens, secretary of the Ford Motor Company, and Henry Ford, who is a genius in motor car construction, have made no rash promises; and those who saw the car were taken by surprise.

The runabout is finished in dark maroon, striped in black, has a pair of runabout seats, with a turtle back, and a square radiator. Tires  $2\frac{1}{2}$  by 28 of the G. & J. type are fitted. The steering post comes through the dash, and the car looks substantial in every way.

The power plant in front is a four-cylinder motor with the cylinders cast

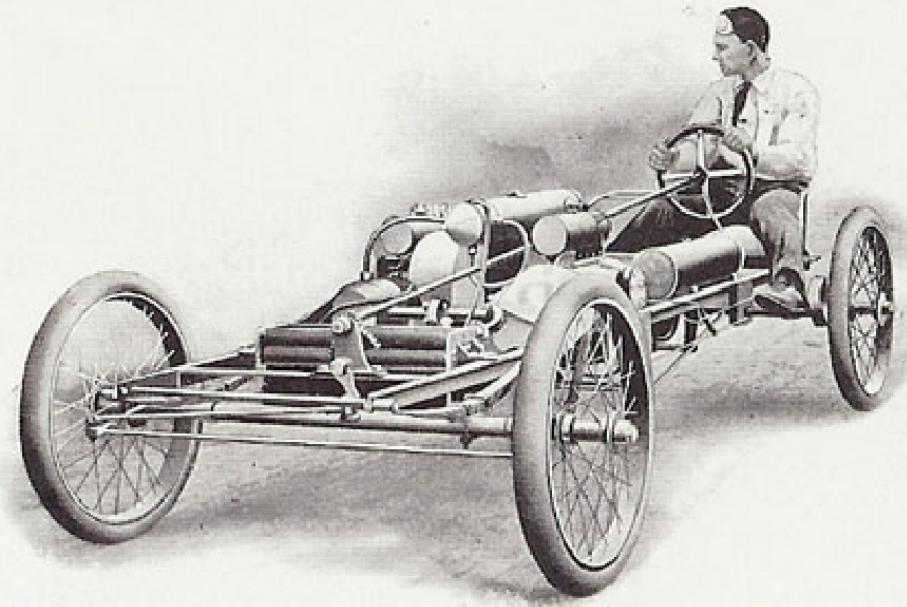
in pairs. There are mechanically operated inlet and exhaust valves of the same size. The flywheel is in front, and combined with it is the fan. A single-piece aluminum crank case has the ends bolted, and the whole is supported on two cross bars. Among the other features are a circulating pump, built in the radiator; 1-beam front axle, on which is placed a single front cross spring; bevel gear drive, with the Ford rear axle construction, and a planetary transmission in an aluminum case, which is bolted to the crank case. The runabout at the show has a leather top. It has a speed of forty miles an hour.

Buying automobiles on their reputation, an entirely new departure in the motor car trade, developed today at both the Armory and Madison Square Garden. This may have been hastened by the bad weather that made demonstrations unpleasant, but at any rate hundreds of orders are being placed without the buyer taking even a ride in the machine, where formerly some severe tests were demanded.



THE FAMOUS "999"

"999," the Ford 4-cylinder racer, built in 1902, was the first American car to lower the world's record of one mile to less than 40 seconds, making a mile in 39½ seconds, and demonstrates the fact that Mr. Ford was early in the field with a 4-cylinder car



FORD LIGHT WEIGHT RACER

This wonderful little car was made of two stock Ford Model C engines and lowered the world's record for a car of its weight on a circular track to 55 seconds. This record still stands, having never been beaten.

