

## THE FORDS FOR 1907-08, MODELS K, N, and R

The 1907 model year continued with the cars of 1906. The two-cylinder Model F was discontinued and the large Model K was considerably changed from the 1906 design. The Model R appeared about April. The "R" was a more refined version of the Model N and proved so popular that it was again revised, becoming the Model S in August 1907, at which time the "R" was discontinued. About June 1907 the Model K was offered also as a roadster and given the name "6-40" (6 cylinders, 40 horse power).

In spite of the claim (below) that the Model N would continue for five years, 1907 saw the beginning of the development of the Model T, prototypes of which were built in early 1908, and which replaced all other models in October 1908.

Following are reproductions of Ford's booklets describing the features of the 1907 and 1908 models.

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### *Looking Backward*

Ford cars have, from the very first, occupied an enviable position. Paradoxically, their fame has been promoted by the systematic opposition of less progressive makers and their agents—an opposition that has been exerted with equal force and futility against each succeeding Ford Model. The head and front of our offending seems to be that we insist on leading rather than following the trend of automobile design and development.

The progressive manufacturer in this, as in any other industry, must lead if he would avail himself of the benefits of the advertising the leader always receives from those who, because of lack of foresight, must always disparage, even while they imitate.

The first Ford Car was a two-cylinder machine. The price was sensational at the time---for Ford began by manufacturing in large quantities, thus enabling him to sell cars at prices below the cost at which others could make them. However, price was not a good point of attack. So the fallacious argument that "more cylinders produce more troubles" was evolved. What would some competitors do without that silly

While all competent gas engine authorities recognize the "six" as the mechanical ultimate, not all buyers might be expected to understand or appreciate its superiority over the "four" and other types. Fact is, six cylinders are not so necessary until we reach high powers and must use cylinders of large bore to obtain the desired power in four. Our competitors, lacking the necessary experience and seeing only troubles for the maker in sixes, sought to stem the tide of demand for that type---as usual with the result of starting a public investigation and thereby exploiting the very thing they sought to disparage.

That, in cars of high power, the six-cylinder motor is ideal is now established---time will but serve to more deeply root this conviction and increase the demand for them. And it is hard sledding for the agent who has to sell a light powered runabout or touring car with less than four cylinders, now that thousands of Ford Model "N" runabouts are on the road daily demonstrating their superiority over everything else, regardless of price.

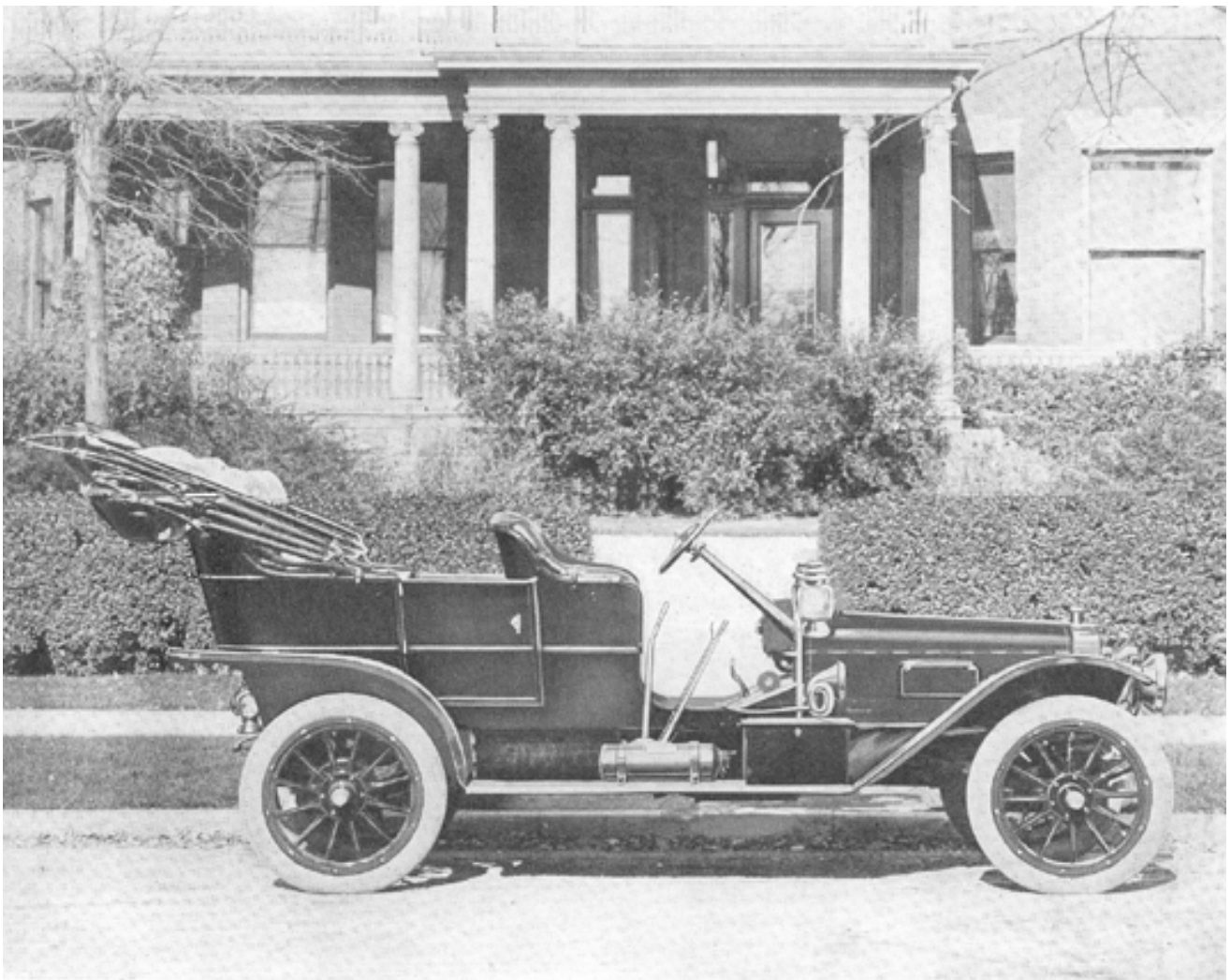
*Foreward!*

argument? It is still made to do service, notwithstanding all the experience motorists have had with doubles, triples, fours and finally sixes contradicts it absolutely. Looking back we wonder how the fame of that first Ford car spread so rapidly-and then we realize the advertising value of envious opposition.

When other makers began to copy Ford "doubles," they discovered that we had advanced another step-were building immense numbers of 4-cylinder touring cars, again at sensational prices. The advent of the magnificent Model "K" 6-cylinder Ford was but history repeating itself. This met with keener opposition than anything else we have ever done---except the still more sensational 4-cylinder, 15 h. p. runabout, the story of which is still being told round the world.

*The two models---the "K" 6-cylinder 40 h.p. touring car and the "N" 4-cylinder 15 h.p. runabout comprise the Ford line of 1907.*

The 1906 Ford Model "K" Car has given such uniformly excellent satisfaction to over three hundred owners in all parts of the country that few changes have been made in the 1907 model of the same type.



The revised Model K for 1907

A new body, a longer wheelbase, and other improvements were made over the 1906 model.

## **The Six-Cylinder Idea**

The six-cylinder idea has fully demonstrated its superiority and has so popularized itself that other makers have either entered the six-cylinder field or find it necessary to make excuses for not doing so. The "complications" have proven to be only those of making---they are the manufacturers' troubles and they minimize the troubles of owner and driver to a degree that can be fully appreciated only by the man who pays the bills.

### **Life and Service**

That the life of a car equipped with this perfectly balanced, vibrationless six-cylinder motor will be more than twice that of one equipped with a four-cylinder motor of greater cylinder bore and the same power has been demonstrated as far as a season's work can demonstrate it. While ordinarily, a car has deteriorated very considerably after a season's use, every one of the Ford "Sixes" is worth actually more today than when they first left the factory. The season's work has resulted in improving the smoothness, flexibility, and the road-ability of the car. This item of longer life, more than the mere matter of present performance, appeals to the astute buyer. As time proves all theories right or wrong, so time will bring the final adoption of the six-cylinder idea in all high powered touring cars.

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As the art advances, however, there appear ways of refining and thereby improving. The 1907 Model K has gone through this process and we believe it is now the finest product throughout that can be had at any price.

The motor has higher compression than formerly and to take care of this the radiator has 25 per cent. more capacity. Heating trouble will be unknown in this model. Other slight refinements have been made in valve operation and piping; cylinders are bored, reamed, and finally ground to micro-metrical exactness;

## **Ford Leads**

Not all makers will admit the superiority of six-cylinders. This is natural. There is a reason. If a maker can see the road first and lead, it is a feather in his cap. That was the Ford position. Other makers will follow only when compelled to do so by an overwhelming demand---they don't like to admit they copied, though all have had to, sooner or later, in the past. It is significant that none tries to disparage the six-cylinder motor; their arguments are confined to the weak protest that "it is not so very much better" and a few rambling statements about its supposed complications which will not hold water. We are free to admit that it is a more difficult motor to build in the first place-but that is our problem, not the customer's. No argument against the six, in favor of the four-cylinder engine, but will serve with even greater force to recommend the single as against the four. So they all fall short of convincingness.

### **Motor**

The motor of the 1907 "K" is the same as that of 1906 except that its power has been increased about 20 per cent. By refinement of details. The best proof of the entire satisfaction derived from the six-cylinder Ford cars sent out last season is to be found in this fact, that we could think of no important improvement that could be made in the motor design.

### **Magneto**

The high tension magneto used on Ford cars has proven an unqualified success. We have long since gotten all the "bugs out of it" and we have no hesitation in saying it is the best magneto for automobile motor ignition in the world.

The battery system is separate and distinct from the Magneto system and the perfect operation of either is in no way dependent on the condition of the other. Both may be used at once if desired, in which case there are produced two

pistons, piston pins and rings are ground. Also all crank-shaft and cam-shaft bearing surfaces are ground to half-a-thousandth of an inch of true. In short, grinding has been resorted to wherever it is possible to obtain greater accuracy or greater efficiency through that process.

### **Pump**

The water pump is of the centrifugal type instead of the gear-pump formerly used and the circulation system throughout has been refined and improved, taking advantage as much as possible of the thermo-syphon tendencies of the cooling liquid. The pump, as formerly, is positively driven from the cam-shaft.

### **Lubrication**

The lubrication system of the 1907 car leaves nothing to be desired. A positive mechanical oiler, with a separate pump for each tube, eccentrically operated, serves every cylinder independently. The oil level in the base is maintained by another feed tube and still another automatically lubricates the universal joint, drive shaft, and finally the rear axle bearings. The oil flow starts and stops with the motor so there is economy as well as certainty. The tube leading to the engine base enters directly over the half-time gears, which latter are thereby bathed in oil at all times. The oiler is located on the left side of, and on, the engine base so that the heat from the motor keeps the thickness of the oil at the same consistency, regardless of weather conditions. The location of the oiler under the hood and also the sight feeds for adjustment, puts it where it belongs; the fad for having everything on the dash has run its course---an oily floor and dash is ruinous to gowns and robes.

### **Ignition**

The double ignition system with duplicate set of spark plugs was a Ford innovation and was roundly criticized by other makers early in the season. It is now announced as a feature in those same cars for next season. This extra set of plugs absolutely ensures the driver against ignition troubles, one set being always kept clean by the

sparks in each cylinder. Inasmuch, however, as the spark generated by the magneto is "hotter" and quicker than that of the storage battery, nothing is to be gained by the use of both at once. A sextuple coil is furnished for the battery set and a single non-vibrating coil with the magneto. A third ignition system may be had by running the battery current through the magneto coil, using the magneto distributor to commutate the high tension current. This is effected by simply throwing the switch on the magneto coil box over to the other terminal. (One ingenious owner of a six-cylinder Ford has put in an additional battery---a cheap set of dry cells---and thereby secured two more systems of ignition for, what he terms "extra emergencies," making five sets in all.)

No other car in the world is so well equipped with ignition apparatus as the Ford. An idle cylinder is unknown in this car.

### **Carburetor**

The Carburetor is similar to that of the 1906 model but improved in starting qualities and flexibility so that it accurately and automatically compensates for every degree of motor speed. Moving the throttle lever one notch, instantly makes itself felt and each notch thereafter for the full radius of the quadrant, gives the same degree of acceleration or retarding of car speed. The air intake tube terminates in a drum around the exhaust pipe, which drum has an opening on the side opposite the carburetor, so that the cold air is first drawn around the hot exhaust pipe. This makes for economy of fuel and a more uniform mixture. The exhaust pipe is now carried down below the transmission frame so as to be clear of all working and adjustable parts. It is larger than formerly, giving freer exhaust with the minimum of back pressure.

### **Transmission**

The planetary transmission is retained for the simple reason that, after watching closely the performance of these cars and seeing the excellent condition of all of them at the end of the season, we believe no other form of transmission now in use could have given such

burning of the charge.

uniform results, with so few gear, transmission and axle troubles. Instead of the former rigid connection between the motor shaft and transmission shaft, we

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have put in the 1907 car a flexible joint. This is not a universal joint in the ordinary sense of the term, but it permits to a sufficient degree of a universal movement of the shafts at the intersection and fully compensates for all possible distortions or strains caused by hard driving over rough roads. The present construction leaves nothing to be desired and is as nearly perfection as it is possible to attain.

### **Weight**

While the power has been increased fully 20 per cent, the weight of the car has been increased but a few pounds---the 1907 "K" weighs 2600 lbs. as against the 2500 of the 1906 model.

Front and rear axles having proven perfect so far as the matter of design was concerned, have not been changed. The troubles which we experienced early in the season from soft gears have long since been entirely corrected, all gears now being made from a special formula of chrome-nickel steel, planed and carefully case hardened.

The front axle is now drop-forged in one piece, instead of in two pieces, electrically welded, as formerly. All hubs have been made heavier and stronger.

### **Gear Ratio**

For the benefit of customers living or touring in mountainous districts, where the high speed possibilities of this car cannot be safely utilized, we give an option of two different gear ratios, 3 to 1 or 3-3/4 to 1. The standard gearing is 3 to 1, and this will be furnished unless otherwise specified in the order.

### **Special Steels**

Chrome-Nickel steel, our own formula, is

### **Frame**

The wheel base has been increased, as mentioned above, to 120 inches, 6 inches longer than that of 1906. To compensate for this extra span, the frame is made of heavier gauge material and deeper channel---5 inches in the wider part. A special high grade nickel-steel is used in the frame.

### **Enclosed Fenders**

The new Fenders on the 1907 car are a delight to the motorist. Patent leather wings protect the hood and body from mud or sand thrown by either front or rear wheels, while a metal shield extends the full length of the car, joining the running board to the body, thereby excluding all dirt and oil. "Miss Phoebe Snow" might ride in this car indefinitely without soiling her immaculate gown or dainty gloves.

### **Speed**

The increased power makes the new "K" capable of 60 miles an hour with full load of five adults and the combined flexibility of the six-cylinder motor and magneto enables the driver to throttle down to a crawl without the necessity of changing gears or releasing the clutch.

### **Price, \$2800**

Increased cost of special materials and of manufacture, added to the fact that the margin of profit in the 1906 "K" was not even a "fair" one, has made an increase in price necessary. On the other hand, we assert without fear of contradiction that in no other car selling for less than \$5,000 can there be had so much service, so much reliability, and so much luxury as in this latest model "K" Ford, which sells at \$2800.00.

used in all shafts, gears, axles, valves and every other working part.

### **Steering Gear**

The incomparable Ford steering reduction gear has been retained as have all other chassis features except those above designated; and time and service over all kinds of roads in all parts of the country and in the hands "of all kinds of drivers have shown no place where improvement could be made.

### **Body**

The only radical change in the 1907 "K" is in the body design, the approved round-corner tonneau type with straight sides having been adopted. The tonneau dimensions have been increased by a six-inch increase of wheel base. Three very large persons or four of ordinary size can sit comfortably on the rear seat. By carrying the side lines straight to the front seat, more leg room is provided so that every passenger faces directly front instead of being compelled to sit half sidewise, as in most other cars. The front seat also is wider than the ordinary and the divided seat has been discarded in favor of the more popular undivided type.

## **1,000 Six-Cylinder Cars**

We have manufactured 1,000 more six-cylinder cars than any other concern in the world. We are now well under way on 1,000 of this latest model. The quantities alone make Ford prices possible and we will see to it that better material, better workmanship, and a more rigid system of inspection can not be put into the making of an automobile.

### **A Profitable Investment**

That it pays to buy Ford cars is proven by the fact that it has always been necessary to increase the price of each new model after the first batch had been turned out, and at a time when others found it necessary to reduce prices in order to compete with the Ford product. We have always erred on the side of low, rather than high, prices. The famous Ford Runabout is only one of many examples. Every 1906 model "K" is today worth more than on the day it left the factory--prices of material have increased so that it could not now be profitably marketed for the price at which it was sold. And the 1907 car will be found to have increased as much in value by end of its first season. In other words, the purchase of a Ford car is an investment, not an expense.

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### ***1907 Model "N" Ford Runabout***



A moment's thought will convince you this is not surprising. Before we dared begin building cars in lots of ten thousand, staking the entire resources and the reputation of the House of Ford on that move, we must be certain we had an automobile that was as nearly perfect as it was possible to make it and that the design was not only up-to-date, but so far in advance of the ordinary car as to remain standard for at least five years; for ten thousand cars is not our final goal. We confidently expect to build 50,000 of these cars before it is necessary to make any radical change in the chassis design---if, indeed, it ever is. At the price the market is practically unlimited; the price creates the demand, the

In this Model there has been no change from the original car shown at the New York and other shows last January, (since when its fame has become world wide) except that, as it is now possible to obtain special steels in quantities sufficient to meet our enormous demands, nickel steel is used for all gears and shafts wherever that metal can give greater efficiency.

There are now (December 1st, '06) over 2,500 of these cars on the road. Several months' usage and the severest tests our most rabid competitors could devise have failed to show a weakness in this wonderful car.

certain demand makes it possible to plan for enormous quantity production, and producing in such numbers in turn, makes the price possible---profitable though the margin on each car is necessarily small.

It has more power in proportion to weight than any other car ever built. It is built to withstand hard usage on rough country roads and we venture the assertion that no 3,000-pound car can follow this flexible, sinewy, 1,000-pound runabout fifty miles over very rough roads with its full load, and hold together. Its lightness is its greatest strength because that lightness is obtained only by the use of the best materials obtainable---steel drop forgings, steel stampings and pressed steel.

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### Model "K", Specifications

**MODEL**---"K."

**TYPE**---Touring Car.

**MOTOR**---6 cylinder, vertical, 4 cycle.

**HORSE POWER**---40, bore 4-1/2 inches, stroke 4-1/4 inches.

**CYLINDERS**---Individual. water jackets and valve chambers cast integral.

**DISPOSITION**---Longitudinally, under hood at front.

**VALVES**---Inlet and exhaust offset; all on right side. Interchangeable. Operated by single cam shaft.

**CAM SHAFT**---One piece nickel-steel forging. Eight cams integral. All bearing surfaces hardened and ground.

**CRANK SHAFT**---Set at 120 degrees. Drop forging from chrome nickel steel specially treated by Wyman and Gordon process; no welds. Bearing surfaces ground.

**CRANK CASE**---Nickel-aluminum; divided horizontally, lower half removable for inspection or adjustment of bearings.

**COOLING**---Water; cellular radiator; centrifugal pump, gear driven from cam shaft.

**ENGINE GEARS**---Half time, pump and magneto gears all enclosed.

**IGNITION**---Jump spark. 2 separate and distinct systems, consisting of (a) Holley high tension magneto with single, non-vibrating coil; (b)

### Model "N" Specifications

**MODEL**---"N."

**TYPE OF CAR**---Runabout.

**MOTOR**---4 cylinder, vertical, 4 cycle.

**HORSE POWER**---15 BORE, 3-3/4" STROKE, 3-3/8"

**CYLINDERS**---Cast in pairs. Water jackets and valve chambers cast integral.

**DISPOSITION**---Longitudinally, under hood at front.

**VALVES**---Inlet and exhaust offset; all on left side. Interchangeable. Operated by single cam shaft.

**CAM SHAFT**---One piece nickel steel forging. Eight cams integral. All bearing surfaces hardened and ground.

**CRANK SHAFT**---Set at 180 degrees. Drop forging from chrome nickel steel specially treated by Wyman and Gordon process; no welds. Bearing surfaces ground.

**CRANK CASE**---Nickel aluminum; side plates removable for inspection or adjustment of bearings.

**COOLING**---Water; cellular radiator; centrifugal pump.

**IGNITION**---Jump spark-batteries.

**FAN**---Cast in fly wheel.

**CARBURETOR**---Ford design-float feed, automatic.

**LUBRICATION**---Force feed oiler using.

Storage battery with sextuple vibrator coil and Lacoste commutator. A third system obtainable by running battery current through non-vibrator coil using magneto distributor for commutating high tension current.

**FAN**---Attached to radiator; belt driven. Also fan shaped webs in fly wheel to draw warm air from under hood.

**FLY WHEEL**---65 pounds only-thanks to even torque and "overlapping impulses" of 6 cylinders.

**FLY WHEEL CLEARANCE**---14 inches.

**SPEED OF MOTOR AT RATED HORSE**

**POWER**---1000 R.P.M.

**CARBURETOR**---Ford design, float feed, automatically compensates for all engine speeds.

**LUBRICATION**---Positive force feed oiler. 5 units; individual pumps for all lend tubes. Also splash system in engine base.

**CLUTCH**---Multiple disc.

**TRANSMISSION**---Ford planetary system; no internal gears, all spurs. Gears made from chrome nickel steel, hardened.

**FINAL DRIVE**---By cardon shaft with single universal joint to bevel drive gears in live rear axle. Ford three point system (patented in all countries) with all moving parts enclosed in dust proof casing, running in oil.

**REAR AXLE**---Ford design. Hyatt roller bearings of large dimensions. Heavy ball thrust bearings. Bevel gear differential.

**FRONT**---One piece drop forging in "I" beam section, from nickel steel, specially treated.

**FRONT AXLE CLEARANCE**---11-1/2 inches.

**FRAME**---Nickel steel. Cold pressed; extra heavy.

**STEERING**---By Ford reduction gear system; irreversible. Gears at top of column away from dust and grit, running in oil.

**BRAKES**---2 sets. (a) Service band brake on transmission. (b) Internal expanding brakes in rear hub drums.

**OPERATION AND CONTROL**---High and low speeds by hand lever at right of driver; reverse by foot lever; service brake by foot lever; emergency brakes by band lever at side, ratchet lock.

**SPARK AND THROTTLE CONTROL**---Give all speeds from four to sixty miles per hour on high gear. Levers just below steering wheel can be manipulated without taking hand off wheel.

pressure from exhaust. Also splash system in engine base.

**CLUTCH**---Multiple disc.

**TRANSMISSION**---Ford planetary system; all spur gears.

**FINAL DRIVE**---By cardon shaft with single universal joint to bevel drive gears in live rear axle. Ford three point system (patented in all countries) with all moving parts enclosed in dust proof casing, running in oil.

**REAR AXLE**---Ford design. Hyatt roller bearings of large dimensions. Bevel gear differential.

**FRONT AXLE**---One piece steel drop forging in I-beam section, specially treated.

**FRAME**---Pressed steel.

**STEERING**---By Ford reduction gear system; irreversible, gears at top of column away from dust and grit.

**BRAKES**---2 sets. (a) Service band brake on transmission. (b) Internal expanding, brakes in rear hub drums.

**OPERATION AND CONTROL**---High and low speeds by hand lever at right of driver; reverse by foot lever; service and emergency brakes by foot lever, ratchet lock.

**SPARK AND THROTTLE CONTROL**---Give all speeds from 3 to forty miles per hour on high gear.

**WHEELS**---Artillery wood type.

**TIRES**---Pneumatic; standard equipment 28"x2-1/2".

**SPRINGS**---Front: Semi-elliptic, cross spring. Rear: Full elliptic perched on rear axle outside frame line.

**DUST PAN**---Protects all machinery from mud and grit.

**WEIGHT WITH TANKS FULL**---2-1/2 inch tires, 1030 pounds; 3 inch tires and top 1080 pounds.

**WHEEL BASE**---84". Tread 56".

**BEARINGS**---Phosphor bronze and babbitt in motor, Hyatt roller in rear axle. Large balls in front hubs.

**GASOLINE CAPACITY**---8 gallons.

**WATER CAPACITY**---4 gallons.

**PRICE**---Standard tire equipment \$500.00.

**TOP**---With side curtains and storm front, leather, \$50.00; Rubber, \$30.00. 3" tires, \$50 extra.



**WHEELS**---Artillery wood. type. Hubs extra strong.

**TIRES**---Pneumatic; any American make; 34"x 4" front and rear.

**NUMBER OF PASSENGERS**---Normal load, 5 adults; room for 2 extra seats, giving capacity of 7 if desired.

**SPRINGS**---Front: Semi elliptic, 6 leaves. Rear: Full elliptic, 7 leaves.

**FENDERS**---Enclosed full length of car, concaved metal risers joining running board to body.

**DUST PAN**---Protects all machinery from mud, grit and dust.

**WEIGHT WITH TANKS FULL**---2600 pounds.

**WHEEL BASE**---120". **TREAD**-56".

**BEARINGS**---Phosphor bronze and babbit in motor. Hyatt roller in rear axle. Large balls in front hubs, ball thrust bearings on differential.

**GASOLINE CAPACITY**---15 gallons.

**WATER CAPACITY**---7 gallons.

**PRICE**---Including side oil lamps, tail lamp and French horn, \$2,800.

**PRICE WITH EXTENSION TOP**, side curtains and storm front, and pair gas lamps \$3,000.

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### *Model "R"*

Ever since the Ford Model "N" Runabout Was first announced and more especially since the quality and powers of that car have become known to the world of motordom there has been a large and increasing demand for a car of similar construction, power and endurance, but more pretentious in outward appearance. A runabout more richly dressed and equipped With those frills and fussings that are dear to the hearts of more fastidious owners---persons who like something specially nice and to whom price, while a consideration, is a matter of secondary importance.

Aware of this demand, solicitous competitor---friends have wondered and have asked repeatedly why the price of the Ford runabout was not set at a higher figure at first--- say \$800 or more, a figure at which it was

admitted we could sell all we could make in the next year or two at least. But Ford's plans are always known to his imitators---afterward.

Anyone who has followed the development of the motor car in America has noticed that Ford has always been a year ahead. Each successive move he has made has suggested something to tardy imitators---an opportunity that had apparently escaped his keen eye. But while they are busy copying the latest Ford, behold! he brings forth another that leaves them hopelessly behind again. And this last is the product of the ripest experience---their's can at best be a poor copy and consequently an experiment so far as they are concerned. And thus the procession ever moves onward, Ford, the originator, the creator in the lead, imitators, copyists following his train, boastful but impotent.

The Model "R" Ford Runabout is but the latest example of this habit Ford has of anticipating every move of those who would presume to compete with the Ford product.

Waiting only until the motoring public had had time and opportunity to know the true value and the excellence of the Model "N" motor and chassis, he has proceeded to build a companion model to suit the more fastidious tastes and requirements of the class of buyers above indicated. Physicians, professional men in all branches, bankers and wealthy business men who already have one or more large touring cars but who feel a need for a light runabout that will emancipate them, on occasion, from the professional chauffeur---a car one can drive himself and derive keen pleasure from; one his wife or son or daughter can handle with equal ease and facility and which will negotiate congested city streets as well as country roads with greater safety and celerity than a more cumbersome runabout or touring car. Such a car is this latest Ford Model "R."

In fact this latest model has been well described as "an edition deluxe of the Ford Model 'N' Runabout."

# FORD Motor Cars 1907



ASSEMBLING "R" CARS

## Model "R" Runabout

### FORD MOTOR CO.

Member American Motor Car Mfg. Assn., New York  
FACTORY, DETROIT, MICH.

#### RETAIL BRANCH STORES

147-149-153-163 Columbus Ave., Boston · 1721-23 Broadway, New York · 727 Main St., Buffalo · Broad and Huttenwood Sts., Philadelphia · 1444 Michigan Avenue, Chicago · 1713 S. E. Euclid Ave., Cleveland · 265-270 Jefferson Ave., Detroit · and 318-320 E. 11th St., Kansas City. CANADIAN TRADE supplied by Ford Motor Company of Canada, Limited, Walkerville, Ontario.

The Ford Model "N" motor and chassis has proven to have more strength and power than is necessary under any conditions for the size of the car. It was not necessary, therefore, to apply a larger motor or heavier axles, frame or transmission to produce the more pretentious appearing Model "R."

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The chief points of difference between the two models are as follows: 30" x 3" tires which enhance the speed qualities of the machine--- forty-five miles an hour easily, down to four miles on high gear by throttle control alone.

Body is slightly larger, seats higher and more distance between seats and dash. Of the semi-individual type, seats are luxuriously upholstered in first grade M. B. leather and curled hair. Panels more highly finished, tastefully striped and neatly ironed for top, the ironing following the contour of the seats.

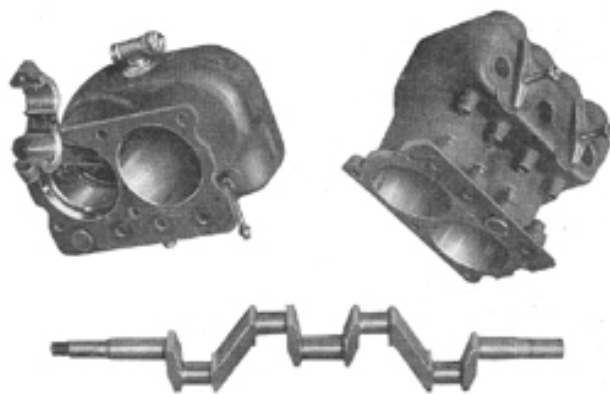
The beetle-back is rounded instead of pointed and is made larger to receive the larger extra tire.

Large plow-share fenders at the front, the edges turned over in angle form to eliminate vibration and lend stiffness; rear fenders semi-enclosed and curved to follow the contour of the wheels, lend an imposing appearance to the machine. Fenders are connected by a wide rubber-covered running board with brass angle moldings round the sides and ends.

Ignition system is the best obtainable and the standard equipment includes a six-volt storage battery beside a set of six dry cell batteries.

Add to the above a pair of handsome oil lamps, tail lamp and large French tube horn, brass operating lever, steering post and brass molding around dash and you have one of the nattiest and tastiest cars ever turned out. And in performance-endurance, silence, ease of control, flexibility, speed and hill climbing ability, it has no rival, no equal at less than \$1,000---and we know of none even at that figure. Price, \$750.00, f.o.b., Detroit.

A detailed description of the various features of design and construction follows. Additional information will be cheerfully furnished for the asking.



Cylinders and Crank Shaft

**CRANK SHAFT**---Drop-forged steel, specially heat-treated by our own process. All bearing surfaces ground to half-a-thousandth of an inch accuracy.

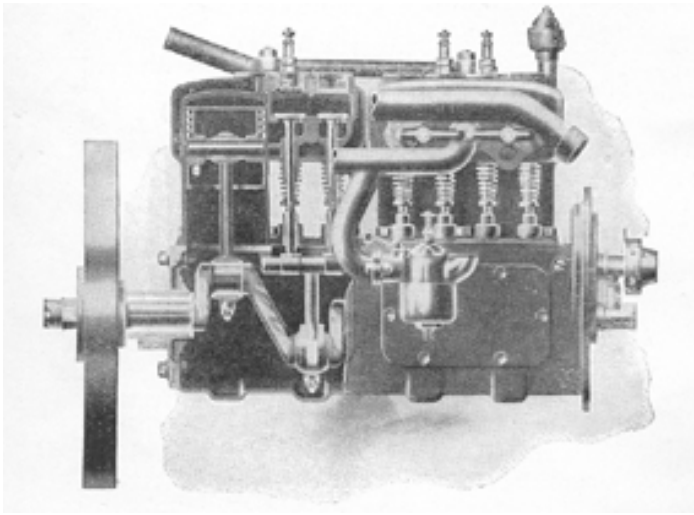
**CAM-SHAFT**---Drop-forged in one piece with all cams integral, from special high grade steel; cam surfaces case-hardened and all bearing surfaces ground.

**VALVES**---Drop-forged; heads integral; seats and stems ground to micrometrical accuracy.

**CONNECTING RODS**---Drop-forged from special steel in "H" section. Lower bearing cap hinged. Provision for adjustment is made by the insertion of fiber shims which can be removed and filed down for that purpose. Piston pin bearings, bronze; split bushing adjustable by tightening set screw. Large hand holes at the left side of motor, covered by removable plates, permit of easy inspection and adjustment of crank and piston pin bearings without otherwise disturbing the engine.

**PISTONS**---Cast from fine grain gray iron, our own formula. First rough turned, then turned to within a few thousandths of size; are then annealed to relieve strains in the metal and effect such distortion as will result from heat. After cooling, are finished by grindings. Each piston provided with four rings of the eccentric type, split diagonally. Rings are ground on both sides and on the outer surface.

**CYLINDERS**---Cast from the finest quality gray iron. After first boring operation, cylinders are annealed to relieve strains, after



**Motor**

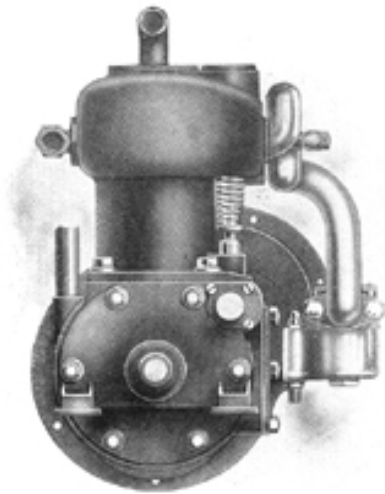
Model "R"---four-cylinder, vertical; located longitudinally under hood at the front. Cylinders cast in pairs. Bore, 3-3/4 inch; stroke, 3-3/8 inch; rated horse power at normal speed, 15. (Under series of tests connected with and driving dynamo develops 18.4 h.p.) Aluminum crank case. Crank shaft bearings, highest grade Babbitt metal; exceptionally long. Cam shaft bearings, bronze.

which they are rebored and finally reamed so as to secure an absolutely straight and round cylinder.

**PISTON PINS**---Steel, hardened and ground.

### **Lubrication**

**MECHANICAL OILER**---A faultless lubrication system is afforded by a mechanical oiler with sight feeds for regulating the flow. One tube serves to maintain a uniform level in the engine base and the other leads to the ball-housing which encloses the universal joint in the cardon shaft. All engine parts-crank shaft and connecting-rod bearings, piston pins, cylinders, cams, and valve lifters, are lubricated by the "splash" system. Owing to the fact that the s troke in this engine is shorter than the bore and that the pistons project into the base



**IGNITION**---By jump spark; current supplied by batteries---standard equipment (Model "R") one set of six Columbia dry cells and one six-volt storage battery. Quadruple coil in handsome case located on the dash, Switch on front of case. Each coil unit is separate and complete in itself and any unit may be removed or replaced without disturbing the others. High tension wires well insulated and carried in fiber brackets so that disarrangement or short-circuiting is impossible.

**CARBURETOR**---Float feed; automatic; specially designed for this car. Gasoline tank located under the seat with gravity feed to carburetor.

at the end of each stroke, the splash system of lubrication leaves nothing to be desired. It is certain and simple. The oil begins to flow when the engine starts and while it is running the supply is in direct proportion to speed of the motor---in other words, to exactly meet its requirements. When the motor stops the oil ceases to run so that once the feed is regulated a constant level can be maintained in the engine base regardless of variation of speeds. A partition

### **Cooling**

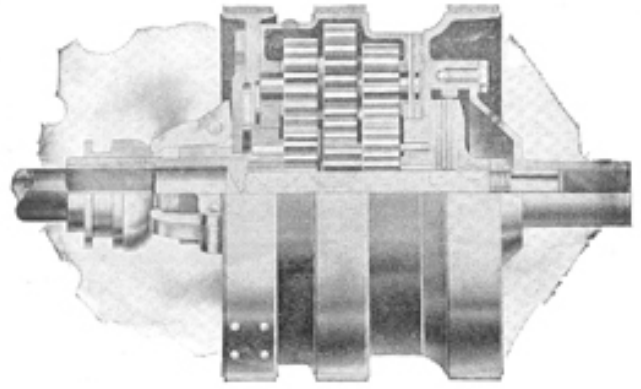
Perfect cooling under all conditions is afforded by a most efficient vertical tube radiator which forms the front of the hood and in which the centrifugal pump is incorporated. The circulation system has been carefully worked out so that the water is constantly in motion and it is

mid-way between front and rear of the engine base prevents the oil flooding the rear cylinders when climbing steep grades and keeps the two pairs equally lubricated. Oil cups are provided at every bearing point throughout the car—even at the spring connections. Provision is made both in the transmission gear and in the differential and bevel gear housing of the rear axle, to pack these parts with heavy grease, one supply of which will last for several weeks.



**Final Drive**

impossible for the engine to overheat no matter how hot the weather or how long it may run idle or on the low gear.



**Transmission**

The transmission is of the Ford spur-planetary type, nearly eight thousand of which are now in use and which have proven so wonderfully efficient and durable. Low speed and reverse clutches are of the fiber-lined, steel band type, which take hold smoothly and which spring away from the drums when disengaged so as to prevent "dragging" and the consequent waste of power.

The high-speed clutch is of the multiple disc type with fiber discs interposed between smooth cast iron discs. A transmission gear is almost unnecessary on this Model "R" car as the excessive power of the engine enables the car to climb almost any hill or negotiate the muddiest or sandiest roads on the high gear---and at a slow speed if the driver so desires. The low gear is seldom or never used except for the first twenty or thirty feet when starting from a stand-still. It will be seen, therefore, that this transmission should outwear almost any other part of the car.

**MOTOR SUSPENSION**---The transmission gear is carried in a cast aluminum frame the front of which is bolted to the rear end of the motor, thereby forming the rear support of the latter. A bracket, cast integral with the front end of the engine base, rests on the front cross-member of the frame and this, with the two arms of the transmission frame which are bolted to the side frame members, gives an ideal three point suspension, and a rigid construction in engine and

This system is broadly covered by letters patent in all countries and is used in all Ford models. The universal joint comprises four members---the two drop-forged steel sections and the halves of the split bronze retaining ring. It is, at the same time, the simplest, most efficient and most durable universal joint ever devised and as it is automatically lubricated at all times, the owner "never knows it is in the car." The drive shaft bearings are of babbitt, carefully reamed and fitted and the oil from the universal joint flows constantly down through these bearings and into the differential housing.

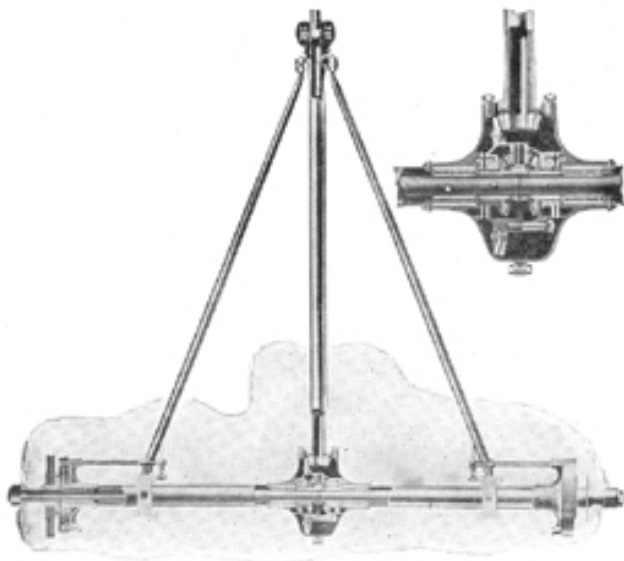
### **Rear Axle**

The rear axle proper is the well known Ford design, the driving members being enclosed in a tubular steel housing, press-fitted and riveted to the cast steel sections of the differential case, Hyatt roller bearings of the indestructible type are fitted at both ends of the live members. The

transmission. This construction is the reverse of most "three point suspension" systems, in all others of which two points of the triangle are at the front of the frame and the apex at the center. The Ford idea gives the maximum of flexibility while at the same time relieving the transmission shaft of all twisting or distorting strains.

### **Final Drive**

The Ford triangular drive system is patented in every country in the world. It is the only system in which all driving shafts, universal joints, gears and other moving parts are enclosed in a dust proof and oil tight housing from transmission gear to the hub caps of the wheels. The drive is direct to the center of the chassis regardless of whether the car is running straight or turning corners; and only one universal joint is necessary. A ball-and-socket connection between the tubular torsion member and the transmission frame allows the axle to oscillate in any direction and thereby relieves the passengers of all strains and shocks due to unevenness of the road. It also permits of the use of full elliptic springs, flexibly connected to the frame brackets instead of the rigid connection necessary when the driving strain must be transmitted through the medium of the springs.



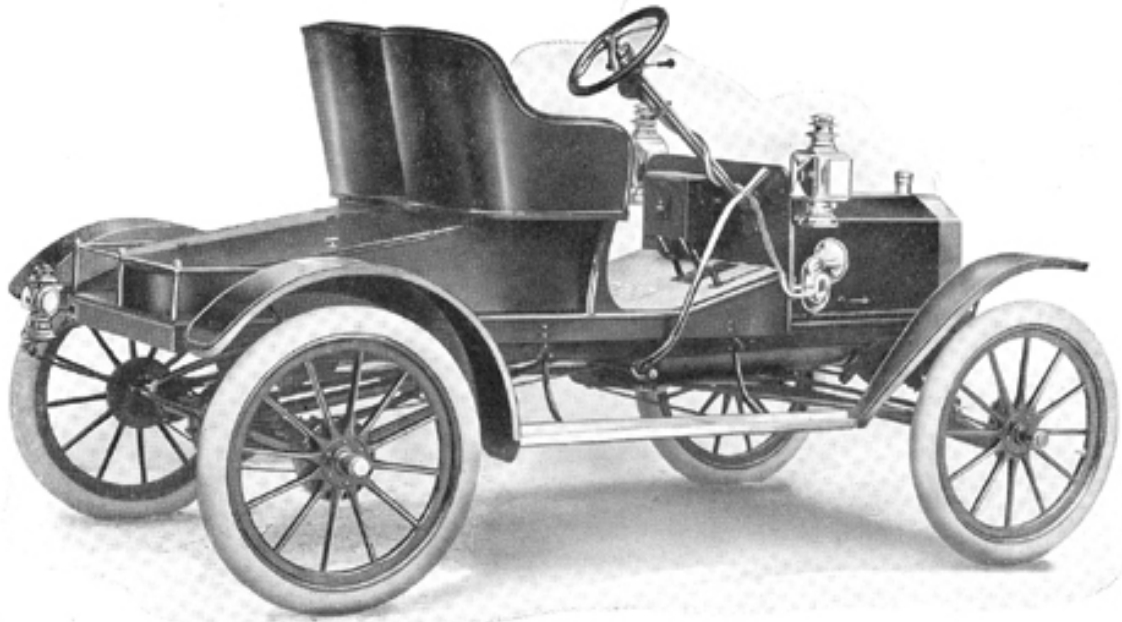
differential gear is of the three pinion, bevel type; all gears made from special high-grade, drop-forged, steel blanks. The driving pinion and main bevel gear are drop-forged from special chrome nickel steel, teeth accurately planed and case hardened, The axle may be taken apart in a few minutes, differential gear and other parts removed and examined.

### **Front Axle**

The front axle of the Model "R" is a marvel of the drop-forging art. The entire axle is drop-forged in one piece from special steel and is heat-treated after forging. It is in "I"-beam section-the form which gives the maximum of strength with the minimum of weight. The worst that can happen to this axle, even in a collision with a telegraph pole, is to bend it; and even if bent double, it can be heated in a blacksmith's forge and straightened without having suffered any actual injury. Steering knuckles and spindles, are drop-forged from special steel, in one piece. Front wheels are carried on large ball-bearings-balls being more suitable for supporting the end-thrusts occasioned by steering.

### **Steering Gear**

The Ford Reduction-Gear steering device is the only really new thing in this line that has been developed in several years. Like the rear axle, it is being patented in all countries, and we believe it is the most satisfactory solution of the steering problem that has yet appeared. It is just sufficiently irreversible to relieve the driver of all road worries and at the same time yields enough to irregularity of the ruts to save the car from the many shocks and twists from which it would otherwise suffer, The gears, instead of being located below the frame where they become clogged with mud and cut by grit and dust, are placed at the top of the post just within the hub of the steering wheel. Ball joints connect the steering arm with the transverse steering rod.



Ford 4-cylinder---15-18 H.P. Runabout---Model "R"

### **Springs**

Full elliptic springs are the only satisfactory type for rough American roads and the imperfect block pavements of our cities--and Ford cars are built for hard service over such roads.

The lightness of the Model "R" frame and body and the disposition of the load---engine over front axle, passengers between front and rear---permits the use of very light, flexible rear springs---the result is the most perfect riding runabout ever built. Instead of the stiff side springs at the front, there is a single transverse spring shackled to forged integral bosses on the front axle. The front cross-frame member rests upon the center of this spring and there is, therefore, provided a three point suspension for the frame as well as for the motor and transmission gear. (For the enlightenment of those who believe side springs would be superior to the single transverse spring, might say we tried this out thoroughly before deciding to adopt the one we have. The difference in steering was not noticeable while in riding qualities the transverse spring proved to be incomparably superior. In the 3000 cars now on the road (Jan. 1st, '07) no weakness has ever developed in the spring construction so we can assert that for a light car, constructed as this one is, this spring suspension has no equal.)

### **Body**

The Model "R" body is similar in general design to that of the Model "N," having a seating capacity of two. The seats are of a semi-individual type and are larger than formerly. Seats are also higher and there is more room between seats and dash, thus allowing for two very large persons. The "beetle back" is different in shape from the Model "N," being rounded at the rear and of larger proportions to permit of carrying the larger tires. This body is of very handsome appearance and there is ample body and leg room for two large persons. It is handsomely upholstered in first grade "M. B." leather, heavily tufted with curled hair.

### **Frame**

The frame is of the approved pressed steel type, in channel section, and is made of the highest grade of special material. It is cold pressed and tapered toward the front and rear. The frame has a factor of safety many times the load which it will ever be called upon to sustain. This is also true of axles and every other part.

### **Brakes**

The Model "R" car is splendidly equipped

## Three Point Suspension

While we are on the subject, it might be well to note that the "three point suspension" idea has been carried to what might be termed, its "logical conclusion" in this car. The driving forces are transmitted through tubular radius members from the outer ends of the rear axle, at a point just below the spring blocks, to a common center at the ball joint previously described; then, from a point almost directly below this ball joint is another from which diagonal tubular radius members convey the driving forces again to the ends of the front axle; the engine and transmission are supported at three points; and the frame also has a three-point suspension on the two rear springs and the single transverse front spring as previously outlined. The wonderment which everyone, after his first ride in a Ford runabout expresses, is induced by the constructional factors above outlined.

with brakes. For service use, there is a contracting fiber-lined band brake operating on a special drum on the transmission shaft. For emergency use there are a pair of internal expanding, bronze rings contained within dust proof, pressed steel drums attached to the rear hubs. Then the reverse clutch band, operated as it is by a foot lever, may be used as a brake if desired. The service and emergency brakes, being also operated by foot levers, there are three foot levers, any one of which will slide the wheels on any kind of road surface.



**Tires**

The Model "R" is equipped with 30 x 3 inch clincher tires. Owing to the fact that no one tire concern can supply us with our full requirements, it is impossible for us to give customers an option on make of tire—we must equip each day's output with whatever tires we have in stock. It is

## Operation and Control

We believe we are justified in saying no other car in the world is as simple to master and easy to control as are the Ford Runabouts, Models "N" and "R." Hundreds of these cars are driven constantly by ladies and misses, not to mention the youths of fourteen to eighteen years of age who use them, So far as we know there has never been an accident which was in any way due to the inexperience of the driver or to any other cause, even remotely associated with the control of the machine. A single lever at the side operates the low speed and the high, the movement being the simple backward and forward one with neutral position midway. The reverse is operated by a foot lever. Spark and throttle levers are located at the right and left side, respectively, of the steering post and just below the wheel, so that both can be operated by the index fingers without removing the hands from the steering wheel. Having excess of power to meet all conditions the car may be driven at any speed from four miles per hour to its maximum speed of about forty-five miles per hour by simple throttle and spark control alone.



sufficient to say we buy the best there is and since the tire pool went to pieces, we have no difficulty in getting any brand we desire---in fact the scramble for the Ford tire business today is in sharp contrast to the attitude of some tire concerns a year ago when a concerted effort was made to prevent Ford carrying out his plans for a four-cylinder runabout at a reasonable price.

### Fenders

The model "R" car is equipped with fenders of ample proportions and front and rear fenders are connected by a broad running board. Brass angle moldings all round running board and corrugated rubber mat gives a handsome appearance to this model.

### Fuel Capacity

The gasoline tank is located under the seats and has a capacity of eight gallons. As this car averages about twenty-five miles per gallon of gasoline, this is sufficient for about two hundred miles of running over ordinary roads.

Even for driving in congested city streets it is seldom necessary to use the brake or to disengage the clutch. The motor is easy to start, so that a lady has no difficulty in this regard, whereas to start a single or even a two-cylinder motor of anything like the same horse power would be an almost impossible task for a woman.

### Equipment

The Model "R" car is equipped with side oil lamps, tail lamp and French tubular horn and is ironed to receive a top.

### Price

Price with above equipment, \$750.00 f.o.b. Detroit. Price of tops, gas lamps and other accessories will be cheerfully sent on request.

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### Model "R" Specifications

**MOTOR**---4 cylinder, vertical, 4 cycle.  
**HORSE POWER**---15; **BORE**, 3-3/4".  
**STROKE**, 3-3/8".  
**CYLINDERS**---Cast in pairs. Water jackets integral.  
**VALVES**---Inlet and exhaust offset; all on left side, integral. All bearing surfaces hardened and ground.  
**CRANK SHAFT**---Set at 180 degrees. Drop forging from steel heat treated after forging; no welds, Bearing surfaces ground.  
**CRANK CASE**---Aluminum; side plates removable for inspection or adjustment of bearings.  
**COOLING**---Water; centrifugal pump, gear driven.  
**IGNITION**---Jump spark---batteries; storage and dry cells.  
**FAN**---Cast in fly wheel.

### Model "N" Specifications

**MOTOR**---4 cylinder, vertical, 4 cycle.  
**HORSE POWER**---15; **BORE**-3-3/4";  
**STROKE**-3-3/8".  
**CYLINDERS**---Cast in pairs. Water jackets integral.  
**VALVES**---Inlet and exhaust offset; all on left side, integral. All bearing surfaces hardened and ground.  
**CRANK SHAFT**---Set at 180 degrees. Drop forging from steel specially heat treated after forging; no welds. Bearing surfaces ground.  
**CRANK CASE**---Aluminum; side plates removable for inspection or adjustment of bearings.  
**COOLING**---Water; centrifugal pump, gear driven.  
**IGNITION**---Jump spark-batteries.  
**FAN**---Cast in fly wheel.  
**CARBURETOR**---Ford design-float feed,

**CARBURETOR**---Ford design-float feed, automatic.

**LUBRICATION**---Mechanical force feed oiler; splash system in engine base.

**CLUTCH**---Multiple disc.

**TRANSMISSION**---Ford planetary system; all spurs.

**FINAL DRIVE**---By cardon shaft with single universal joint to bevel drive gears in live rear axle. Ford three point system (patented in all countries) with all moving parts enclosed in dust proof casing, running in oil.

**FRONT AXLE**---One piece steel drop forging in I-beam section, specially treated.

**FRAME**---Pressed steel.

**STEERING**---By Ford reduction gear system; irreversible, gears at top of column away from dust and grit.

**BRAKES**---2 sets. (a) Service band brake on transmission. (b) Internal expanding brakes in rear hub drums.

**OPERATION AND CONTROL**---High and low speeds by hand lever at right of driver; reverse by foot lever; service and emergency brakes by foot lever, ratchet lock.

**SPARK AND THROTTLE**---Give all speeds from 4 to 45 miles per hour on high gear.

**TIRES**---Pneumatic; standard equipment 30"x3".

**SPRINGS**---Front; Semi-elliptic, transverse spring. Rear: Full elliptic.

**DUST PAN**---Protects all machinery from mud and grit.

**WEIGHT WITH TANKS FULL**---1100 pounds.

**WHEEL BASE**---84". Tread 56".

**BEARINGS**---Phosphor bronze and babbitt in motor. Hyatt roller in rear axle. Large balls in front hubs.

**GASOLINE CAPACITY**---8 gallons.

**PRICE**---30"x3" tires, 2 side oil lamps, tail lamp, tube horn, storage battery and ironed for top, \$750. F.O.B., Detroit, Mich.

**TOP**---Improved full leather top, extra heavy bows, shock-absorbing rest, storm front and side curtains complete. Send for price list.

**CATALOGUE** of parts and accessories for the asking.

automatic.

**LUBRICATION**---Mechanical force feed oiler. Also splash system in engine base.

**CLUTCH**---Multiple disc.

**TRANSMISSION**---Ford planetary system; all spurs.

**FINAL DRIVE**---By cardon shaft with single universal joint to bevel drive gears in live rear axle. Ford three point system (patented in all countries) with all moving parts enclosed in dust proof casing, running in oil.

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**FRAME**---Pressed steel.

**STEERING**---By Ford reduction gear system; irreversible; gears at top of column away from dust and grit.

**BRAKES**---2 sets. (a) Service band brake on transmission. (b) Internal expanding, brakes in rear hub drums.

**OPERATION AND CONTROL**---High and low speeds by band lever at right of driver; reverse by foot lever; service and emergency brakes by foot lever, ratchet lock.

**TIRES**---Pneumatic; standard equipment 28"x 3".

**SPRINGS**---Front; Semi-elliptic, transverse spring. Rear: Full elliptic.

**DUST PAN**---Protects all machinery from mud and grit.

**WEIGHT WITH TANKS FULL**---1050 pounds.

**WHEEL BASE**---84". Tread 56".

**BEARINGS**---Phosphor bronze and babbitt in motor. Hyatt roller in rear axle. Large balls in front hubs.

**GASOLINE CAPACITY**---8 gallons.

**PRICE**---28" x 3" tires (without lamps or horn) \$600. F.O.B., Detroit, Mich.

**CATALOGUE** of tops, lamps and other accessories for the asking.