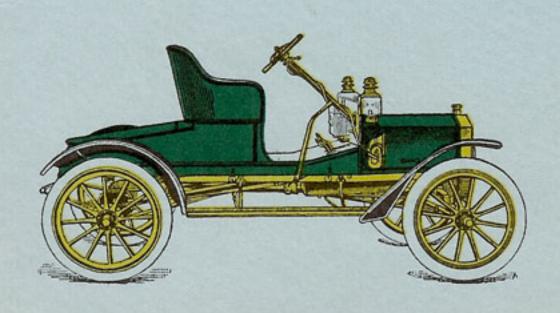
# Ford Antor Cars — 1907 —

Model "R"

Ford Motor Co. Detroit, Michigan, U.S.A.



# FORD Motor Cars 1907



ASSEMBLING "R" CARS

## Model "R" Runabout

#### FORD MOTOR CO.

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

RETAIL BRANCH STORES

147-149-153-163 Columbus Ave., Boston; 1721-23 Broadway, New York; 727 Main Street, Buffalo; Broad and Buttonwood Sts., Philadelphia; 1444 Michigan Avenue, Chicago; 1913 S. E. Euclid Ave., Cleveland; 268-270 Jefferson Ave., Detroit; and 318-320 E. 11th St., Kansas City. CANADIAN TRADE supplied by Ford Motor Company of Canada, Limited, Walkerville, Ontario.

#### 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 de luxe" of the Ford Model "N" Runabout.

The 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."

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 rear deck is rounded instead of pointed and is sufficiently large to carry two extra 30" tires.

Large plow-share fenders at the front, the edges turned over in angle form to eliminate vibration and lend stiffness; rear fenders semi-inclosed 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 mouldings around the sides and ends.

Ignition system is the best obtainable and the standard equipment consists of a four-unit Heinze coil, Lacoste type commutator, a sixvolt storage battery and set of six dry cell batteries.

Add to the above a pair of handsome oil lamps, tail lamp and large French tube horn, brass-plated operating lever, steering post and brass moulding around dash, and you have one of the nattiest 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.

#### Detailed Description Motor

Model "R"—four-cylinder, vertical; located longitudinally under hood at the front. Cylinders cast in pairs. Bore, 3¾ inch; stroke, 3¾ 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.

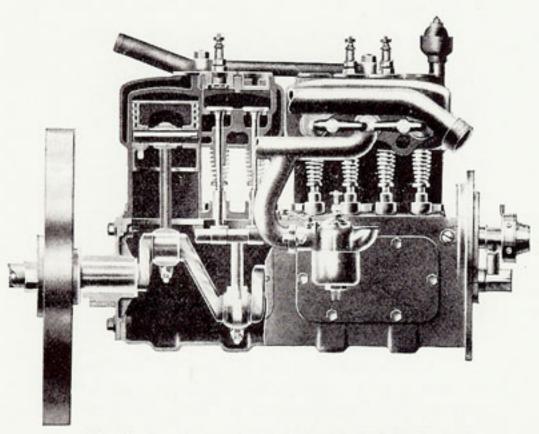
CRANK SHAFT—Drop-forged from Ford special steel specially heat-treated by our own process. All bearing surfaces ground to half-a-thousandth of an inch accuracy.

**CAM-SHAFT**—Drop-forged in one piece with all cams integral, cam surfaces case-hardened and all bearing surfaces ground.

VALVES—Drop-forged; heads integral; seats and stems ground to michrometrical accuracy.

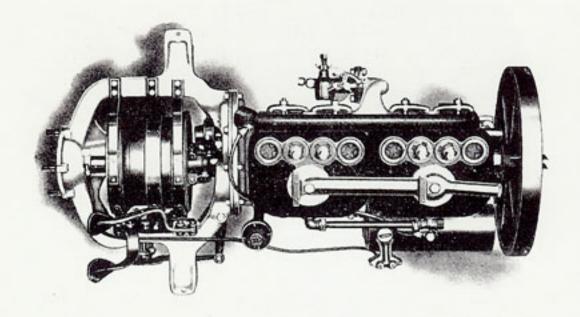
CONNECTING RODS—Drop-forged from Vanadium steel in "H" section. Lower bearing cap hinged. Provision for adjustment is made by the insertion of fibre shims which can be removed and filed down for that purpose. Piston pin bearings, bronze; split bushing adjustable by tightening set screw. Large hand holes 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



Semi-Sectional view Ford 4-cylinder 15-18 H. P. Motor

then annealed to relieve strains in the metal and effect such distortion as will result from heat. After cooling, are finished by grinding.



Ford unit power plant-Motor and Transmission-Top View

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

PISTON PINS—Steel, hardened and ground.

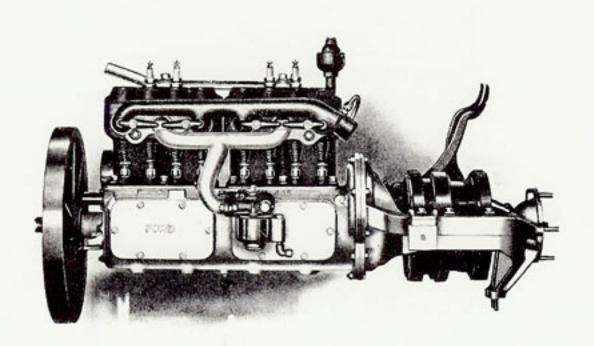
MOTOR SUSPENSION—The transmission gear is carried in a cast aluminum frame, the front of which is bolted to the rear end of the motor, thereby forming the rear support of the latter. A bracket, cast integral with the front end of the engine base, rests on the front cross-member of the frame and this, 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 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.

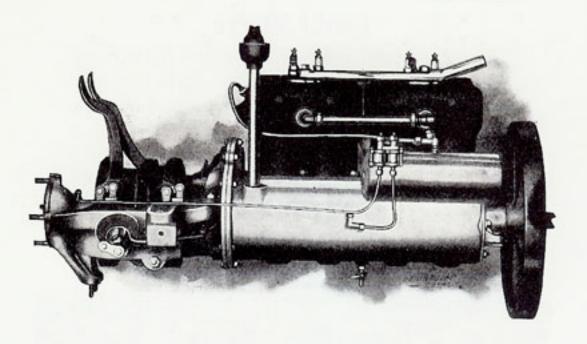
#### Lubrication

FORCE FEED OILER—An adequate system lubrication is afforded by a force feed 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 stroke in this engine is shorter than the bore and that the pistons project into the base 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 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.

IGNITION—By jump spark; current supplied by batteries—standard equipment (Model "R") one set of six Columbia dry cells and one sixvolt 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 fibre brackets so that disarrangement or short-circuiting is impossible.





Ford unit power plant-motor and transmission-right side

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

## Cooling

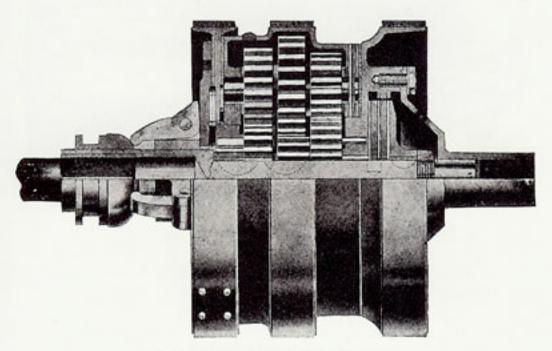
Perfect cooling under all conditions is afforded by a most efficient vertical tube radiator which forms the front of the hood and in which the centrifugal pump is incorporated. The circulation system has been carefully worked out so that the water is constantly in motion and it is impossible for the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

#### 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

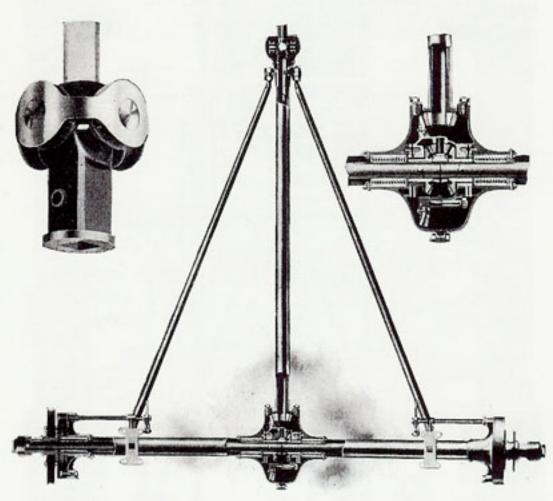


Ford spur-planetary transmission

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 of the chassis regardless of whether the car is running straight or turning corners; and only one universal joint is necessary. 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 uneveness 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. 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." 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 differential gear is of the three pinion, bevel type; all gears made from dropforged, steel blanks. The driving pinion and main bevel gear are drop-forged from Ford special Vanadium steel, teeth accurately planed and case hardened. The axle may be taken apart in a few mintues, differential gear and other parts removed and examined.



Universal Joint. Drive gears and differential.

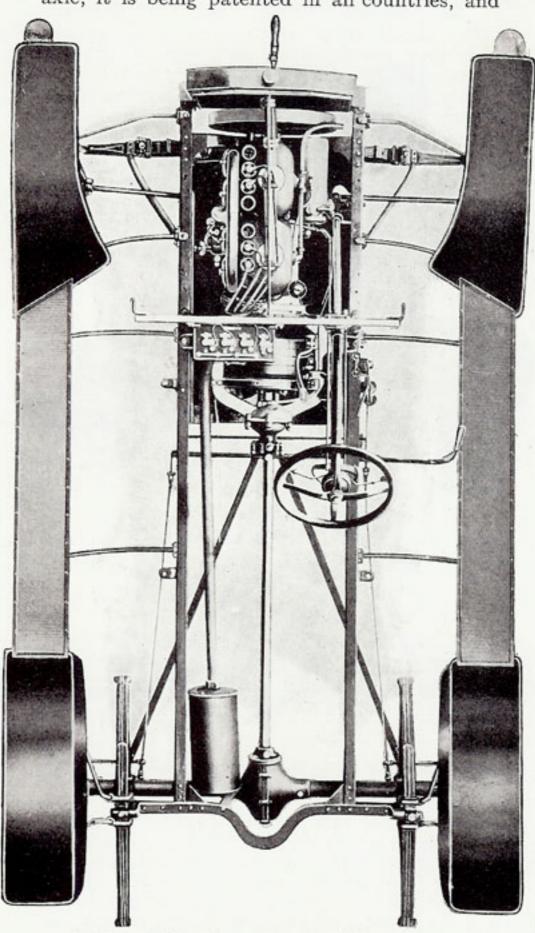
Ford rear axle and final drive system (patented in all countries).

#### 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 Vanadiumchrome 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 or straightened cold without havactural injury. Steering ing suffered any knuckles and spindles, are drop-forged from Vanadium-chrome steel, in one piece. Front wheels are carried on large ball bearings—balls being more suitable for supporting the endthrusts 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

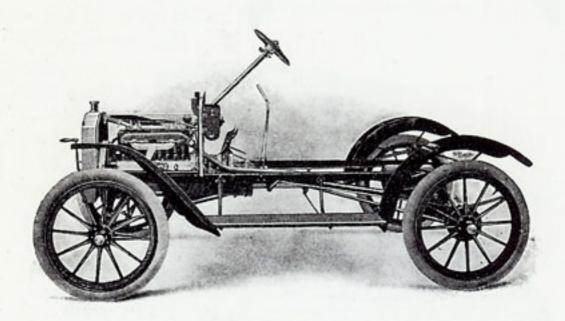


we believe it is the most satisfactory solution of the steering problem that has yet appeared. It is just sufficiently irreversible to relieve the driver of all road worries and at the same time yields enough to irregularity of the ruts to save the car from the many shocks and twists from which it would 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.

## 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

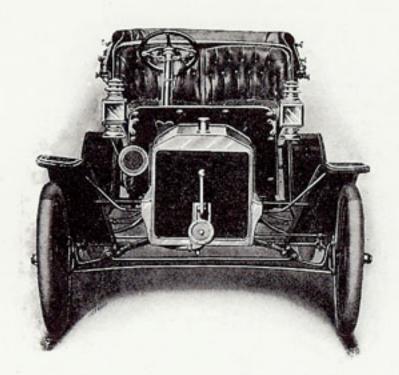


enlightenment of those who believe side springs would be superior to the single transverse spring, might say we tried this out thoroughly before deciding to adopt the one we have. The difference in steering was not noticeable while in riding qualities the transverse spring proved to be incomparably superior. In the 7000 cars now on the road (June 15th, '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.)

## 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 radious 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 radious members convey the

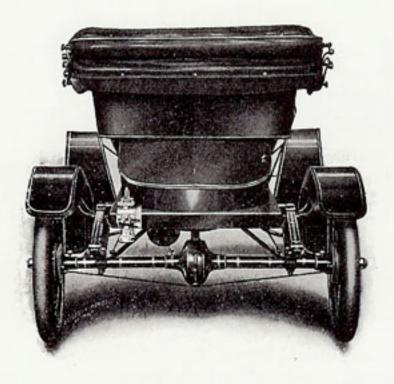


driving forces again to the ends of the front axle; engine and transmission supported at three points; and the frame also has a three-point suspension on the two rear springs and the single transverse front spring as previously outlined. The wonderment which everyone,

expresses after the first ride in a Ford runabout, is induced by the constructional factors above outlined.

## 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 rear deck is different in shape from the Model "N," being rounded at the rear and of larger proportions to permit of carrying an extra tire. This

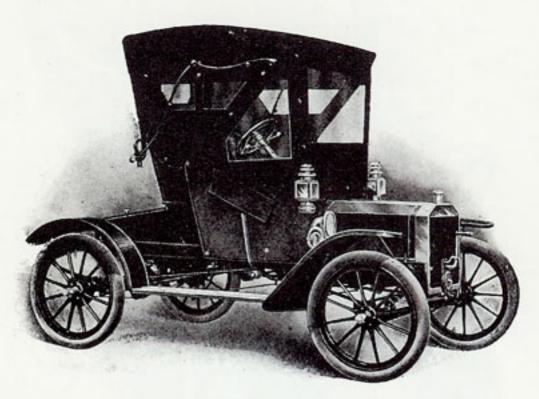
body is of a very handsome appearance and there is ample body and leg room for two large persons. It is handsomely upholstered in first grade "M. B." leather, heavily tufted with curled hair.

#### Frame

The frame is of the approved pressed steel type, in channel section, and is made from 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. Strength: In nearly 7000 cars now on the road we have yet to hear of a broken frame.

#### Brakes

The Model "R" car is splendidly equipped with brakes. For service use, there is a contracting fibre-lined band brake operating on a special drum on the transmission shaft. For

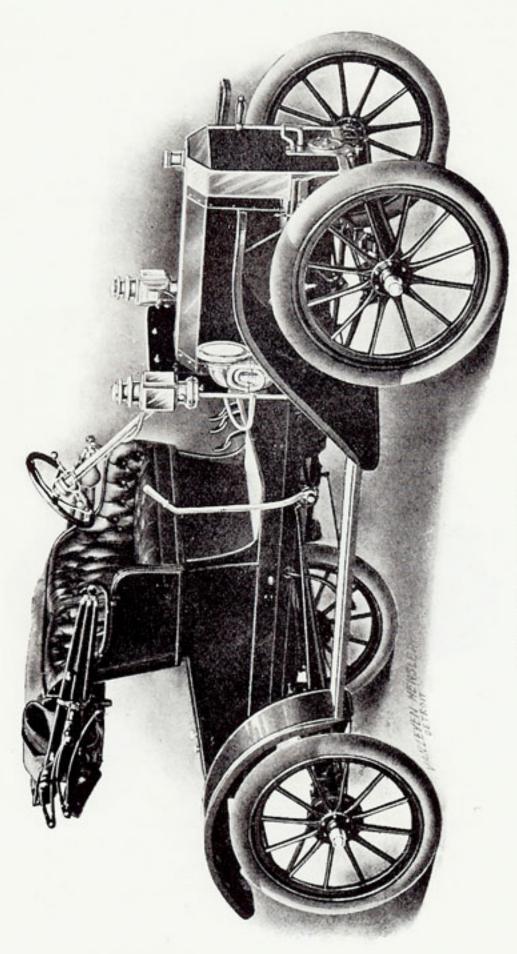


emergency use there are a pair of internal expanding, bronze rings contained within dust proof, pressed steel drums attached to the rear hubs. Then the reverse clutch band, operated as it is by a foot lever, may be used as a brake if desired. The service and emergency brakes, being also operated by foot 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 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



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

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.

#### Feeders

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 mouldings all around running board and a 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.

## Equipment

The Model "R" car is equipped with side oil lamps, tail lamp and French tube 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.

#### Tops

#### MODEL R TOPS

A handsome, perfect fitting, full leather top with shock-absorbing rests will be fitted to Model R cars when so specified in the original order. This top is wider than the Model N and, like the latter, is provided with storm front and side curtains complete.

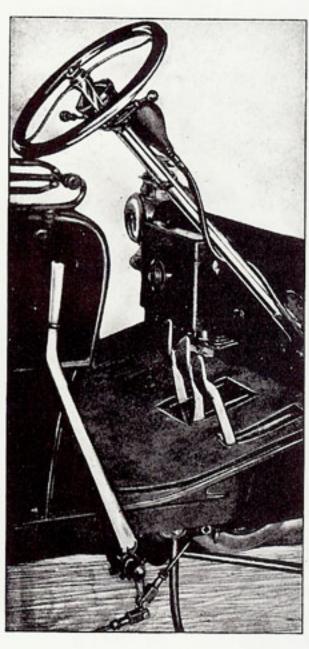
#### CARRIAGE TOPS

We would strongly advise Ford customers against unscrupulous carriage top makers, who, tempted by the large numbers of Ford cars now on the road, pay fancy prices for lists of Ford owners and then circularize them with offers to furnish "a better top than the Company supplies, for less."

Experience has proven carriage tops to be totally unfit for motor car usage—they are too flimsy. We know how; and, making them as we do in ten thousand lots, it stands to reason we can furnish you the best top possible at the price and still make a small profit on each. Beside, we fit to the car and ship with it, thereby saving you express charges. And we guarantee fit and quality. Don't experiment.

## 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 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 infingers without removing the hands from the steering Having exwheel. cess of power to meet all conditions the car may be driven at any speed from four miles per hour to its maxi-

mum speed of about forty-five miles per hour by simple throttle and spark control alone. 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.

#### Vandium Steel

For past two years American motor cars have led the world in originality of design, simplicity of construction and control; and Ford cars have always led the American contingent.

There was one place, however, where we had to admit, in all candor, we were weak. That was in the matter of metals—particularly steels capable of meeting the severe conditions.

The motor car industry, while of considerable importance, still was insignificant as compared with other steel working industries and its demands for special steel were at the same time so exacting and so small, our steel mills, occupied turning out million-ton lots of commercial carbon steels, did not care to bother with it.

The first problem of the American manufacturer who aspired to build motor cars from the ground up—from the ore to the perfected machine—was to attain a position in quantity production where his needs would be of sufficient magnitude to constitute a factor, so that steel makers would gladly take his contract for special alloy steels, or he could afford to install his own plant and make it himself.

That was the Ford plan from the first. That it has taken less than four years to work it out, to realize this part of Ford's ambition, is one of the romances of the trade.

Vanadium being, heretofore, unobtainable, motor car makers have used such other alloys as most nearly met their requirements, among these being nickel and nickel-chrome steels.

In common with other high-class concerns, we have used nickel-chrome alloys for the last two years—more particularly in the 1907 six cylinder models.

But while showing well in static tests—high tensile strength, power to carry a heavy load or to withstand a slow, even, bending stress—nickel-steel has been found woefully deficient in dynamic qualities—in ability to withstand sudden shock, alternating stresses, torsional strains and (most important of all in a motor car), vibration, which, in a few months sets up fatigue, the outward and visible sign of which is crystallization.

So, while we used nickel alloys for want of something more adequate to our special needs, we were diligently searching for the ideal. At the same time we were widening our market by means of prices that appealed to reasoning men. By thus enlarging our market—increasing the demand for Ford cars—we made possible our plans for theretofore undreamed-of quantity production of motor cars. Our steel consumption grew until now our requirements

amount to 280 tons per month. This placed us in a position to manufacture our own steel and to make it from such formulæ as will best meet the requirements in each particular part—springs, axles, crank-shafts, gears, frames, etc.

By a happy coincidence, just at a time when we were searching for an element that would impart higher dynamic properties to steel, a large deposit of Vanadiforous ore was opened up in South America. This placed the wonderworking element, Vanadium, within our reach on a commercial basis. In other words, we are now able to make and incorporate in Ford cars a special steel, the cost of which has heretofore been so great as to make it "commercially impossible." Until within a year the entire world's output of pure Vanadium has been less than 200 pounds per month. In consequence its value has been many times that of pure gold. Now, it is produced for about half the price of silver. And, since it is used only in "homeopathic doses," in steel making, Vanadium-steel can be made for about the same cost as the best grades of nickel-steel and other expensive alloys, to all of which it is incomparably superior.

Unlike nickel, Vanadium steel machines as easily and uniformly as low carbon steels, and works beautifully under the forging hammer and dies. A higher percentage of Chromium may also be used than is safe when Vanadium is absent.

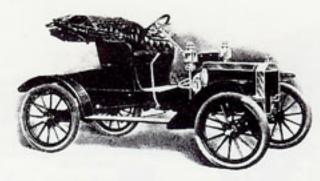
Vanadium steel is now being put in all Ford models. We already use it in axles and gears, and as rapidly as possible it will take the place of other carbon or nickel-steel parts in all Ford models, regardless of price. Let others follow as soon as they can—we reckon they are about a year and a half behind at present writing.

We'll be glad to send interested persons a treatise on Vanadium.

#### HEAT TREATMENT

By scientific heat treatment, the original efficiency of all kinds of steel can be about doubled. This process is not very expensive, but the "know how" is scarce. We believe we are the first to appreciate the value of heat treatment of all steel parts after forging or pressing. All Ford material is subjected to this "doubling the efficiency" process before machining. We also more than double the efficiency of cast iron parts, such as cylinders and pistons, by properly annealing them, and of babbitt metal, bronze and other alloys by other special treatment; thus babbitt bearings, for example, in Ford cars are incomparably superior to the babbitts, "White Bronzes" and other commercial alloys.

## Model "R" Specifications



MOTOR—4 cylinder, vertical, 4 cycle.

HORSE POWER-15; BORE-33/4"; STROKE-33/8".

VALVES—Inlet and exhaust offset; all on left side.

CAM SHAFT—One piece steel forging. Eight cams integral. All bearings surfaces hardened and ground.

CRANK SHAFT—One piece steel forging, ground.

COOLING—Water; centrifugal pump, gear driven.

IGNITION—Jump spark; storage and dry cell batteries.

CARBURETOR—Ford design—float feed, automatic.

LUBRICATION—Force feed oiler.

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.

FRONT AXLE—One piece drop forging in I-beam section specially treated.

FRAME—Pressed steel.

STEERING—By Ford reduction gear system.

BRAKES-2 sets. Transmission and hub.

TIRES—Pneumatic; standard equipment 30"x3".

DUST PAN—Protects all machinery.

WEIGHT WITH TANKS FULL—1100 pounds.

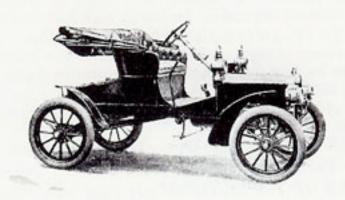
WHEEL BASE—84". Tread 56".

BEARINGS—Phosphor bronze and babbit 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,

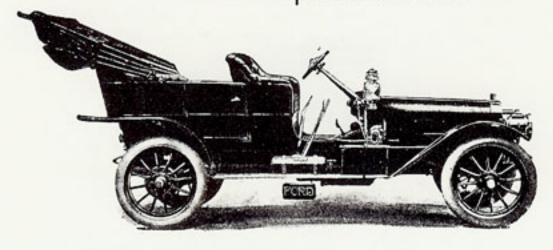
CATALOG of tops, lamps and other accessories for the asking.

## Model "N" Specifications



Model "N"—the world famous. Chassis specifications same as above, except tires, which are 28"x3", instead of 30"x3". Plain plowshare fenders in front. Fitted with carriage step instead of running board. No lamps, horn or top included at list price; battery equipment consists of two sets of six dry cells. In short, Model "N" is "all automobile," neat, natty and a wonderful performer, but without unnecessary frills or ornamentation. \$600 F. O. B. Detroit.

## Model "K" Specifications



MOTOR—6 cylinder, vertical, 4 cycle.

HORSE POWER-40; bore 41/2 inches, stroke 41/4 inches CYLINDERS-Individual. Water jackets integral.

VALVES—Inlet and exhaust offset; all on right side.

CAM SHAFT—One piece nickel-steel forging. Twelve cams, integral. All bearing surfaces hardened and ground.

CRANK SHAFT—Set at 120 degrees. Drop forging from chrome nickel-steel specially treated; no welds. Bearing surfaces ground.

CRANK CASE—Aluminum; divided horizontally.

COOLING—Water, centrifugal pump, gear driven.

ENGINE GEARS—All enclosed.

IGNITION—Jump spark. 2 separate systems, consisting of (a) Holley high tension magneto with single, nonvibrator coil; (b) Storage battery with sextuple vibrator coil.

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

FLY WHEEL CLEARANCE—14 inches.

CARBURETOR—Ford design, float feed, automatic.

LUBRICATION-Mechanical oiler, 8 units; individual pumps for cylinders. 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.

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

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

STEERING—By Ford reduction gear system; irreversible.

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 hand lever at side, ratchet lock.

SPARK AND THROTTLE—Give all speeds from 4 to 60 miles.

WHEELS—Artillery wood type. Hubs extra strong.

TIRES-Pneumatic; Clincher, 34 x 4 inches.

NUMBER OF PASSENGERS-Normal load, 5 adults.

SPRINGS-Front: semi-elliptic. Rear: Full elliptic.

FENDERS-Enclosed full length of car.

DUST PAN-Protects all machinery from mud and grit.

WHEEL BASE-120 inches. TREAD-56 inches.

GASOLINE CAPACITY—15 gallons.

STANDARD EQUIPMENT—Side oil lamps and tube horn. PRICE-\$2,800 F. O. B., Detroit, Mich.

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

O great is the demand for catalogs of Ford Runabout models, our requirements keep the presses running constantly. To send catalogs, elaborately printed and treating of our high-priced touring car models to every inquirer—most of whom are concerned only with the runabouts, would be a needless extravagance, the cost of which Ford customers would, of course, have to pay in the end.

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