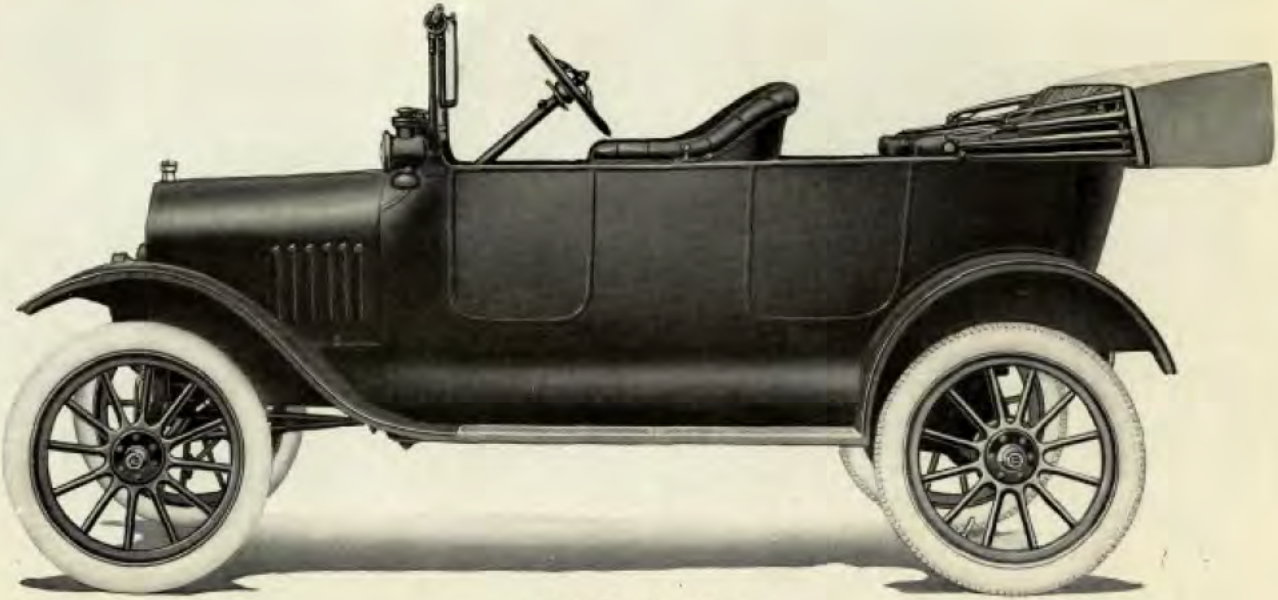
Ford Motor Company
Detroit Michigan

Ford

THE UNIVERSAL CAR

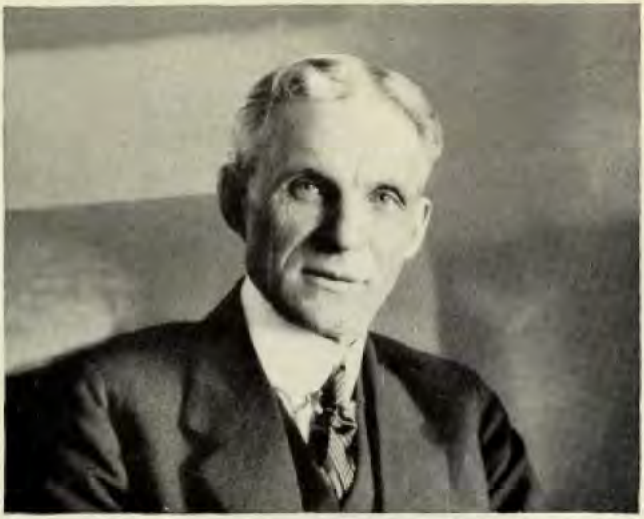
Ford Motor Company
Detroit Michigan
1919-1920

Ford
THE UNIVERSAL CAR



Ford Touring Car

5-Passenger—4-Cylinder—20-Horsepower—streamline hood, large radiator and enclosed fan, crown fenders, black finish, nickel trimmings —fully equipped, except speedometer. Two unit electric starting and lighting system optional All Ford cars sold f. o. b. Detroit



HENRY FORD

DESIGNER OF THE FORD CAR AND FOUNDER OF THE FORD MOTOR COMPANY

BY WAY OF PREFACE

That the Ford car has become a universal utility, the world over, is a tribute to the foresight, as well as to the genius in mechanics of Henry Ford.

All his life Henry Ford has been a man of Service, and, therefore, it was only natural that the fruits of his genius should be in line with the forces which govern his own life and its activities.

Long before the automobile, or motor car, was placed upon the markets of the world, Henry Ford had visioned a horseless vehicle or wagon. He realized that with an increasing population, with continuous and rapidly developing lines of industry throughout the world, the problem and solution of transportation was one of the most important subjects that could engross the mind of any man.

The advancing inventive genius of the world was pushing forward in every direction, multiplying the demand for quick and economical transportation.

This was visible on the farm, just as it was a plain necessity in the industrial world, and from the day of its organization the Ford Motor Company has devoted all energies to

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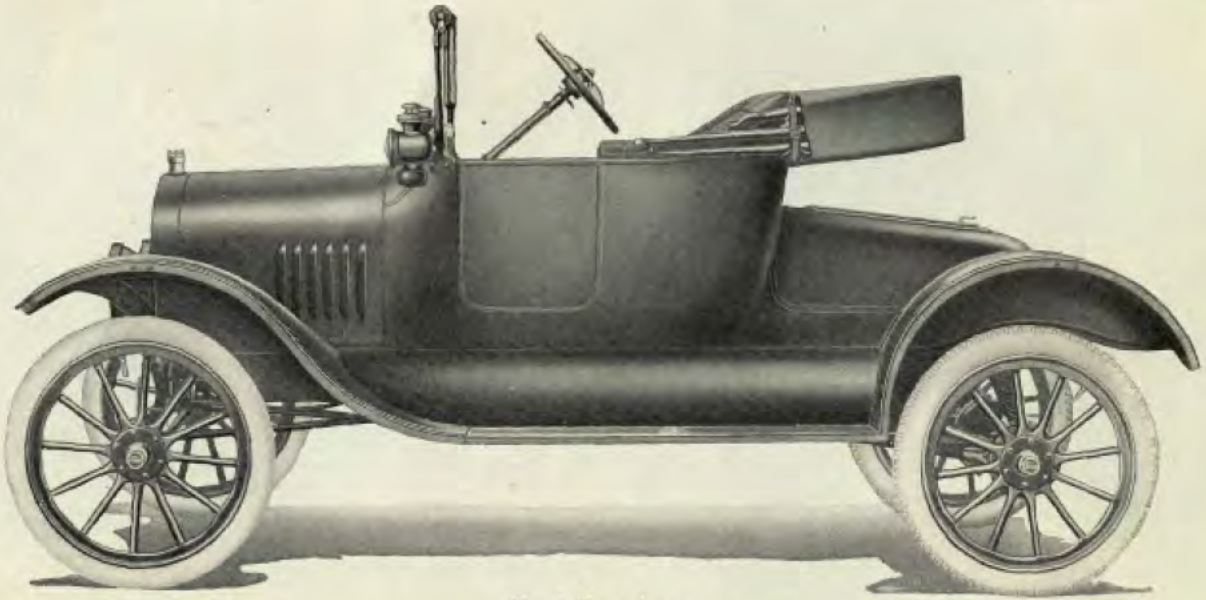

Ford Runabout

2-Passenger—4-Cylinder—20-Horsepower—streamline hood, large radiator and enclosed fan, crown fenders, black finish, nickel trimmings —fully equipped, except speedometer. Two unit electric starting and lighting system optional. All Ford cars sold f. o. b. Detroit

the development and production of a vehicle that would be propelled by other than horsepower. The Ford car is the answer brought to the world as a solution of economical transportation for industry, agriculture and commerce—for business and pleasure.

Henry Ford embodied his vision of Service to civilization, in the largest measure, in the Ford car. That vision is justified through the more than 3,500,000 Ford cars in daily operation, serving men and women in every part of the civilized globe.

Henry Ford's inventive and mechanical genius had behind it a basic, hard-headed, common-sensed and dependable business judgment, because, from the beginning, the Ford car has delivered more than was expected of it by the purchaser.

Henry Ford knew that if his car were to be the utility he desired, it must possess certain great fundamentals:

First, simplicity in design. That is, it must be so simple that anybody of ordinary intelligence could understand how it operated and why it operated. There must be no mysteries in its mechanism calling for interpretation, or the ability of a skilled mechanic. The car was intended for service along every line of human activity, for the farmer and his helpers; for the retail merchant and his delivery men; for women to drive and care for, and the mechanism must at once be readily and easily understood.

It must needs be built of the very highest quality of materials known to the world of metals, because it was to transport human life; it was to travel the roughest sort of roads; it was to go where there were no roads, over mountains and through canyons, across the farm fields as well as the macadamized road and paved streets of the city; it had to plow through sand, snow, slush and ice; it had to go up and go down steep hills; therefore, it must be strong; no chances could be taken on the quality of the materials used in the Ford car, and no chances have ever been taken. Its chassis, which in reality is the car, has ever been built of the very highest quality of steel and iron that the science of metallurgy can produce.

It must be economical in operation, because it had to serve those to whom such economy was an important consideration. Its greatest use was bound to be among those who could least afford extravagant habits; it simply had to be an economical method of transportation. Otherwise, it would become simply one of the added luxuries which wealth could enjoy. To be economical in operation required the very genius of economy and science in designing and directing the motive force which would drive the car. It is built accordingly.

The genius of Henry Ford has never faltered in facing that problem in mechanical construction, whose unlimited fruit would be Service with Economy.

There has been nothing marvelous in the sale of the Ford car during the many years it has been on the market. But they have been years of marvelous production, during which much special

Ford
THE UNIVERSAL CAR

Ford Sedan

5-Passenger—4-Cylinder—20-Horsepower. Large sliding plate glass windows in doors and sides. Roomy doors. Two unit electric starting and lighting system. Demountable rims. 3½-inch non-skid tires all around. Tire carrier. An all season car of style and comfort—for social functions, for shopping, for touring, and general uses. Enclosed car comforts with Ford simplicity and reliability. All Ford cars sold f. o. b. Detroit.

machinery has been designed; new ideas in factory efficiency and economy wrought out; and the direction of labor so guided that practically every workman became a unit of utility in the production of Ford cars, and is a sharer in the profits of the Company.

FACTS ABOUT FORD CARS

The Ford factory builds more than one-half of all the motor cars made in America.

This is a business condition absolutely without precedent or parallel anywhere.

This great volume of production has not been able to keep up with the constantly increasing demand for Ford cars, the Company having constantly unfilled orders for immediate delivery of 100,000 and more cars.

This would not be so, could not be so, if the Ford car had not proven, by all the tests that time, and the greatest number and variety of uses and abuses can impose, its superior practical worth. It has delivered to users, in the fullest sense, what they demanded in a motor car.

It has established its dependable and serviceable merits, day after day, in actual service, the great demand not coming through any exceptional schemes of selling nor by extravagant advertising nor any sort of commercial combinations.

The demand is unprecedented simply because the value in the Ford car is unequaled.

From any and from every angle, there is only one reason why the Ford car so far outsells all other cars and that is: It is a better car.

The Ford car stands upon the record of what it has accomplished and must be judged independently of its price.

It is astonishingly low in price, and surprisingly high in value because it is produced upon a scale so gigantic, so efficient and so economic, as to reduce the cost of manufacturing and distributing to the minimum.

When the Ford Motor Company was building only a few thousand cars yearly, the costs of production and distribution were nearly twice what they are now.

With the present value equaling, if not exceeding, the combined production of all other automobile concerns in America, we are able to produce a better car at practically half the cost.

A few years ago we bought but a few thousand tons of steel, while today our Company is one of the largest consumers of steel in the world, using considerably over 450,000 tons, and you may be sure that, buying in such a tremendous volume, we secure bottom prices.

And this same buying power controls the cost of the entire range of materials that go into the construction of Ford cars.

Again, by reason of our great volume of production, we have been

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Ford Coupe

2-Passenger—4-Cylinder—20-Horsepower. Permanent top with sliding plate glass windows. Two unit electric starting and lighting system. Demountable rims. 3¾-inch non-skid tires all around. Tire carrier. The ideal type of 2-passenger car where year around convenience is combined with the highest degree of utility. All Ford cars sold f. o. b. Detroit

enabled to organize our factory and the branch assembly plants, our construction methods, the specialization of labor and the use of labor-saving machinery, to the limit and so bring production costs down to the lowest possible figure.

In factories where only a limited number of cars are produced, or simply assembled, the many operations necessary cost from three to four times that of similar operations in our Ford factories.

And in addition to these unequaled economies, bear in mind that our entire efforts, energies and genius in production, are concentrated upon the making of just one car, the world-famous Model T.

There is just one chassis for all Ford cars—only the bodies are different. This concentrated effort upon the production of the few hundred parts of just one model naturally escapes the inevitable costly mistakes and expenses which follow the production of thousands of parts for many different models, as well as for the yearly changing of models.

We thus effect a tremendous economy in buying, in manufacturing and in selling—besides in the equally important "after service" that follows to the purchaser of Ford cars.

Put it in a nutshell: Large production makes our selling prices small, while accentuating the high quality of the car.

Because of these facts, we again remind you that you cannot judge the Ford car by its low price. The standard of its high merit is the basis of its great popularity with the more than 3,500,000 Ford owners now using "The Universal Car."

Keep in mind the following established facts:

Simplicity in design—anyone can quickly understand it.

Simplicity in construction—and every part a bulwark of strength.

Simple in operation—anyone can drive it.

Simple to maintain—anyone can care for it.

There is nothing incorporated in the construction of the Ford car that is not absolutely necessary for safety, comfort, durability and economy.

Built with just four simple units: power plant (motor), frame, the front running gear, and the rear running gear—each of which may separately be easily removed and replaced—and all the parts of which are quickly accessible for cleaning and repairing.

The wonderful Model T motor is the one great distinctive feature of the Ford car—surely one, if not the greatest of triumphs mechanical genius has won—and the triumph lies in its wonderful power and simplicity. This Ford Model T motor has no equal for reliability as is most forcibly illustrated in the fact that more than three million of these motors have been made consecutively, coming through every day in thousands, without a single change having been made since the first Ford Model T motor was produced. We can surely say with confidence that the Ford Model T motor is practically a perfect motor.

The four cylinders of the Ford Model T motor are rated to produce twenty horsepower, but the fact is that it gives more

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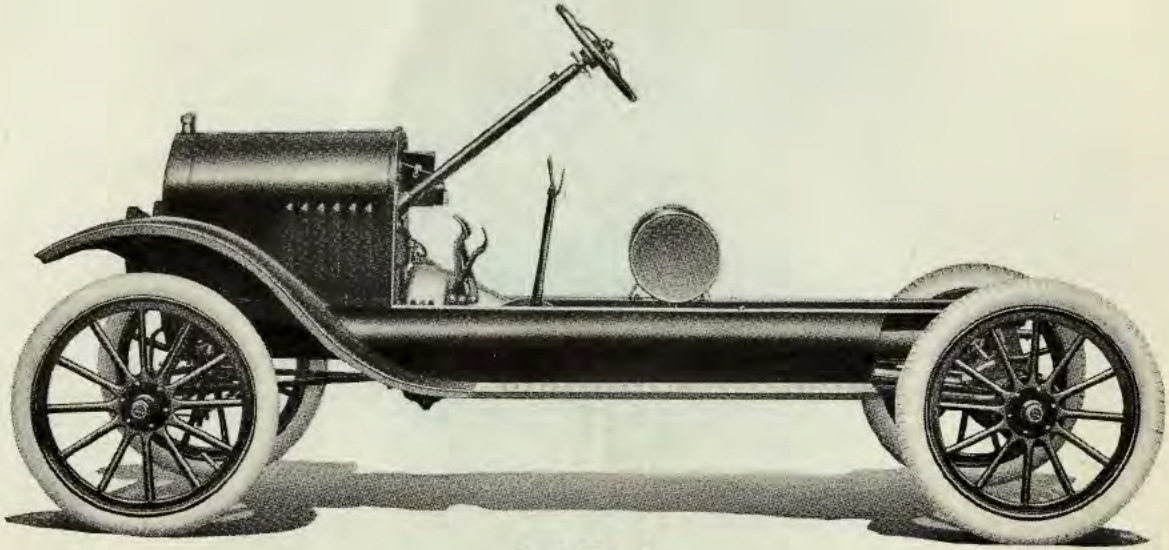

Ford Chassis

4-Cylinder—20-Horsepower. Chassis equipment includes hood for motor, front fenders, running boards with running board shields, two side lights, two head lights, one tail light, horn and set of tools. Two unit electric starting and lighting system optional. All Ford cars sold f. o. b. Detroit

power per pound of car and piston displacement than any other automobile motor made. In hill climbing, the Ford car holds the world's record made at Algonquin, Illinois, June 12, 1912.

The magneto of the Ford car is unique, as no other motor car has a similar equipment. This magneto is an integral part of the motor, being attached to and made a part of the flywheel. It is exceedingly simple—no brushes, no commutators, no batteries, no dry cells—and yet its action is positive and reliable. It is a certain factor in the ease of operation and economy in the maintenance of the car.

The Ford car carries a double brake system, making the assurance of safety doubly sure, and like every other part of the Ford, it is simple to understand, and it is sure in operation. A foot pedal controls the service brake, while the emergency brake which acts upon the rear wheel drums, is controlled by a lever.

The springs in the Ford car form another feature of especial merit, as they combine the strongest practical value in construction, secure the easiest riding qualities and afford a marked contrast as well as a striking advantage, in comparison to the cumbersome, heavy spring construction of many other cars.

The Starting and Lighting system is of the built-in, two unit type, and consists of the starting motor, generator, storage battery, charging indicator, and lights, together with the necessary wiring connections. An integral part of the motor. Extremely light in weight and easily operated by starter switch conveniently located in floor of car and operated by the foot. Power for the starter is supplied by battery. Like everything else about the Ford car the starter is simple and sure. Detail facts will be found in the Ford Manual.

Lightness in weight is another practical merit in favor of the Ford car—it is the lightest weight car built considering its power —and you know that light weight is an essential, both for economy to manufacture, in maintenance, and comfort in riding. The Ford car weighs several hundred pounds less than the ordinary car of equal carrying capacity. It puts more tire service on the ground per pound of car. Then, too, this light weight is a big safety factor.

Light weight reduces the cost of maintenance because it reduces the wear and tear on tires, by giving more miles per gallon of gasoline—and by lessening the strain on the car itself. Then again the tires for Ford cars are comparatively inexpensive because large size is not required, while those used give the maximum service and comfort because the car is light in weight. Owners of Ford cars have the least trouble with tires and all other expenses—something worth thinking about in buying a motor car.

The Ford car is made light in weight, not only because of its scientific design, but because of the tremendous strength of the high quality steel used in its construction. The steel used in Ford cars is steel that has been treated with Vanadium and with

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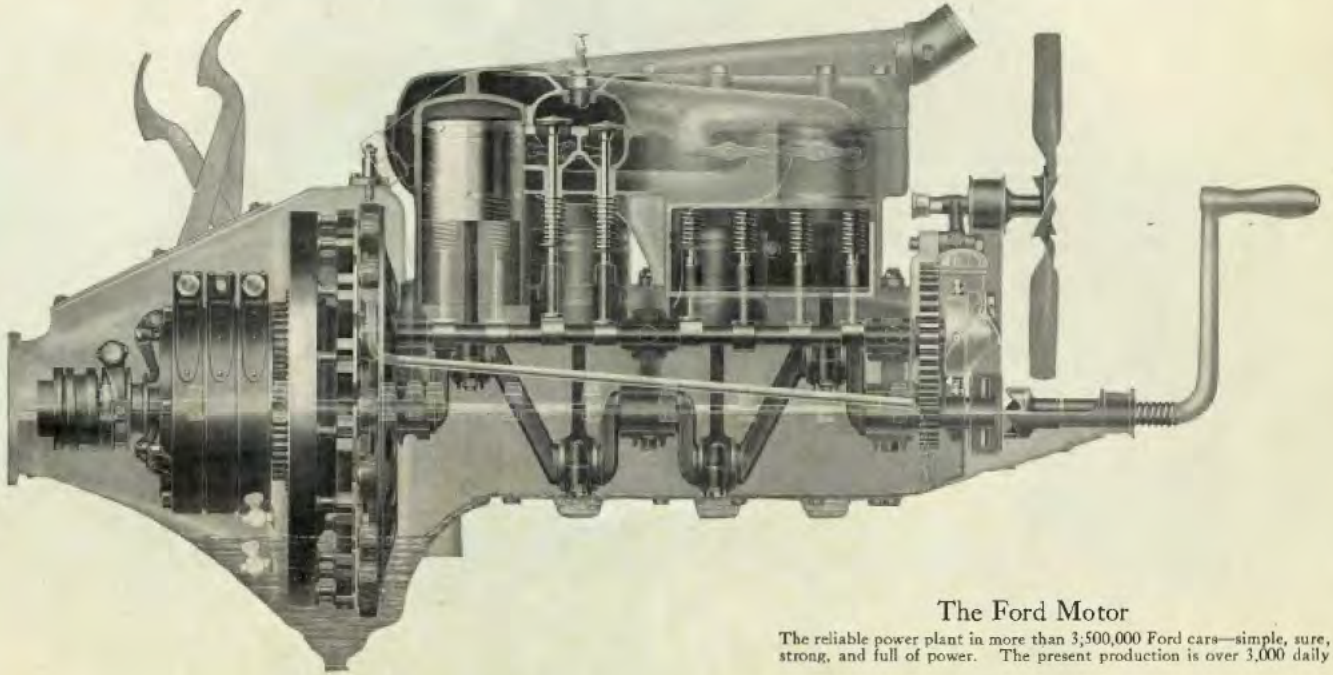

The Ford Motor

The reliable power plant in more than 3,500,000 Ford cars—simple, sure, strong, and full of power. The present production is over 3,000 daily

other mineral alloys, which not only cleanses the molten steel of impurities, but brings the molecules closer together, giving them greater adhesiveness and making the resulting product infinitely tougher and stronger. The steel so treated is the highest priced as well as the highest quality used in automobile construction. This does not increase the cost of the Ford car materially, because on account of the extreme strength and toughness, we use proportionately less of it, and the car is also made lighter in weight.

At the expense of several hundred thousands of dollars and a great deal of valuable time Mr. Ford worked up the formulas by which the steel is produced and heat-treated. We feel quite certain that in the heat-treatment of metals, this Company is far in advance of all other manufacturers of automobiles. The steel used in Ford cars is literally Ford Steel which cannot be found in any other car. In the process of heat-treatment, it is tempered by formulas and processes entirely our own to the degree of toughness or hardness required for each specific part of the Ford car.

It is because of this exceeding carefulness, this studied and scientific watchfulness as to the strength, toughness, flexibility and reliability of each part in the Ford car, that the car itself has proven the most reliable, as well as the most serviceable, enduring and economical motor car in the world. Nothing is left to chance, no haphazard methods are allowed. The Ford is "The Universal Car" and it must be, and is, made to serve and to satisfy the universal public.

By all counts, by all tests, covering a period of sixteen years, the Ford car has been proven the most economical car made. It costs less to operate than any other car. Many Ford owners drive their cars at a cost of less than two cents a mile, and all agree that the Ford cost of maintenance is lowest.

The Ford car has back of it the biggest financial responsibility in the automobile world. This means a great deal to the prospective buyer of a motor car. The guarantee of a car's worth is a value only in so far as the maker is financially and morally responsible—based on past reputation and the likelihood of continuing successfully in business. The daily business of the Ford Motor Company is in excess of $1,000,000 and it is financed entirely with its own resources—no notes, no bond issues, no combinations, no watered stock, no mortgages, no monopoly. This is the guarantee behind every Ford car.

In the matter of "After Service," the Ford car leads all others. That is, the service the owner of a car requires through attention. There are so many thousands of Ford dealers scattered over the United States that one has only to drive a few miles to be in touch with an authorized Ford dealer, and you will always find that such dealers are prepared instantly to give assistance in the way of replacements or repairs, for accidental injuries, or breakages of any kind, and at reasonable prices. Every Ford dealer is required

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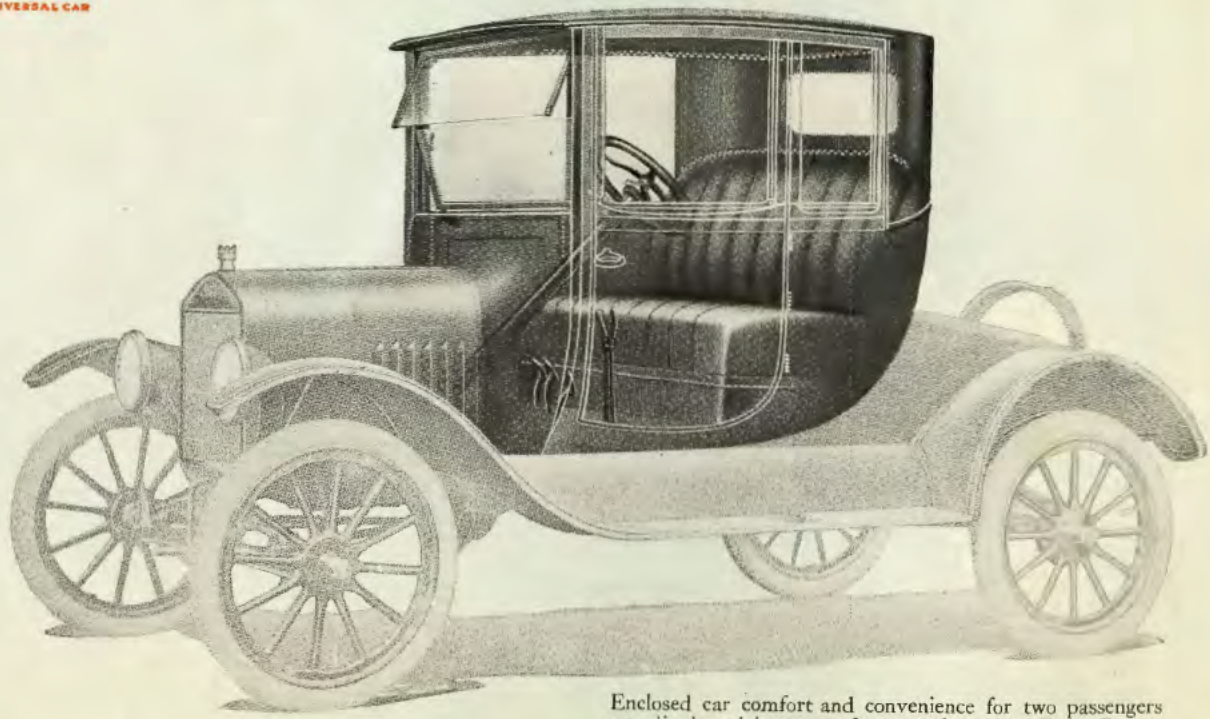

Enclosed car comfort and convenience for two passengers are disclosed in every feature of the new Ford Coupe

through his contract to carry an ample supply of parts for Ford cars, have special machinery for taking care of Ford cars, and so no matter where the Ford owner drives his car, he is constantly within easy reach of a reliable Ford service shop. The dollar value of dealers' stock of Ford parts averages the year around in the aggregate of more than $14,000,000. One can never get far away from Ford "After Service," and like the car itself, it is always economical and Ford dealers are always courteous.

With your Ford car will come a booklet, "The Parts Price List," in which are priced in plain figures all the parts of the Ford car. These prices are based upon the cost of each part in the completed car, so that you might buy the car part by part at nearly the actual cost of the assembled machine. The price list protects you against excessive repair charges, which in all cases are kept down to the lowest point. Ford "After Service" spells economy and time-saving for Ford owners because they can always depend upon the integrity of the Ford dealer.

THE ENCLOSED FORD CARS

The Coupe is a two-passenger car with ample room for three ordinary-sized people. The body is of artistic design, the lines being very graceful—really an improved fact in body building, the top being of metal and permanent. The interior is, for a two-passenger car, very roomy. The seat is broad and deep with high, restful back, all deeply upholstered, assuring most comfortable riding under all weather and road conditions, on short or long journeys. The doors are liberal in size. Large plate glass windows in doors and sides give the broadest range of vision. Where an open car is desired, these windows drop completely into the sash, giving all the delights and fresh air of the open car; while in disagreeable weather, with rain or snow, the windows close, giving a car dust-proof, wind-proof and wet-proof—a comfortable interior, warm, cozy and luxurious. At the same time, the wide range of vision for the driver is not in any way restricted—passing traffic is always in full view. Latest type of ventilating windshield, electric starting and lighting system, demountable rims, tire carrier. All in all, the Ford Coupe is a thoroughly modern car, handsomely finished and most attractive in appearance.

The Ford Sedan is one of the most attractive and desirable enclosed motor cars on the market. It is a roomy five-passenger car, most conveniently appointed, finely upholstered with a splendid quality of heavy whip-cord cloth following the latest style of plait folds, making the seats most comfortable for riding. Large plate glass windows in sides and doors, with silk curtains for the windows in the rear and rear sides. The doors are of generous size, making the car easy to enter and alight from—in fact, the convenience of the passenger has been thought out, and the demands for comfort met in every detail. The rear seat accommodates three persons comfortably. The seat for the driver is stationary, but the other front seat is hinged so that it can be thrown forward,

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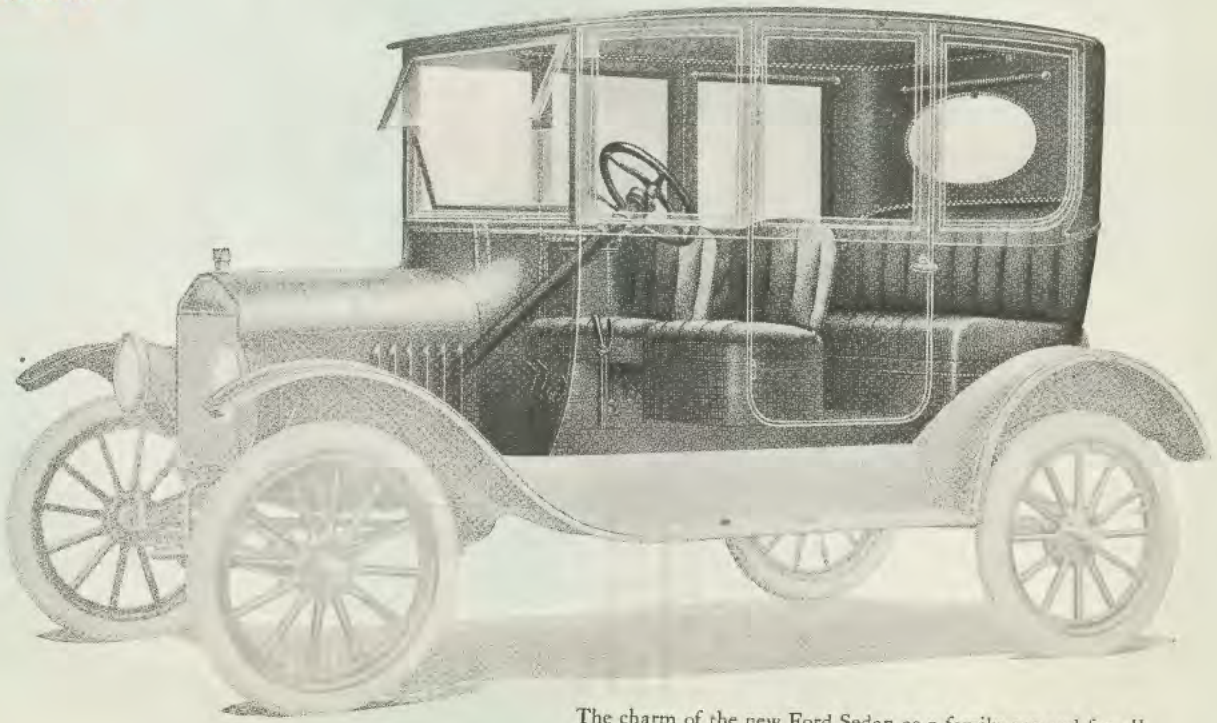

The charm of the new Ford Sedan as a family car and for all social purposes is apparent in this phantom photograph

out of the way, when necessary. Heavy plate glass sliding panels in the doors and the side windows, give the latest air and water protection, so that when the car is closed in and the doors are shut, it is both dust- and water-proof; while with the windows lowered, it has all the attractiveness, freshness and airiness of an open car. It has the latest type of ventilating windshield, an electric starting and lighting system, demountable rims, tire carrier—in fact, an up-to-date enclosed car that makes it the ideal family car for touring, for all social functions, for shopping, the theatre, taking the children to school, and for every purpose for which the enclosed car appeals. The Ford Sedan is in a class by itself in that with all the conveniences and little luxuries, it brings the matchless economy that comes with the wonderful Ford chassis. The simplicity in operation is such that women can drive a Ford Sedan with just as much ease and safety as they could an electric car, the control being so sure and yet so simple. It has all the stability, dependability, and durability of the regular Ford car, and the added luxuries and conveniences described above.

THE FORD MODEL T ONE TON TRUCK

For several years now this splendid business utility, this reliable business economy, in the city and country, the Ford Model T One Ton Truck, has been demonstrating its unparalleled service and economy. The Ford Model T One Ton Truck has all the qualifications of reliability and all the utility in service of the regular Ford car, plus added weight and strength in the chassis and its splendid aluminum bronze worm-drive. The same famous power plant, the marvelous Ford Model T motor that is driving more than 3,500,000 Ford cars every day, is the power plant of this One Ton Truck. Thus assuring simplicity and ease in control, with economy in fuel consumption and the minimum of expense in up-keep or maintenance.

With all its varied usage we have yet to get the first complaint of rear axle trouble. We have few complaints of any sort of trouble. We have had no complaints of any serious trouble, and the thousands of these trucks in use along every line of demand that you can conceive of, satisfies us that we can assure the purchasers of our Truck absolute satisfaction in service along the lines of economy and durability.

Until the Ford Model T One Ton Truck was placed upon the market, the worm-drive was known only in the most expensive trucks, but inasmuch as the worm-drive is the ideal and most reliable transmitter of power for motor trucks, it was placed in our Truck. This final drive of the worm type assures more positive driving power and greater wearing qualities than are found in any other type of power transmission.

The Truck chassis is made light in weight without sacrificing strength through the use of the celebrated Vanadium steel. The

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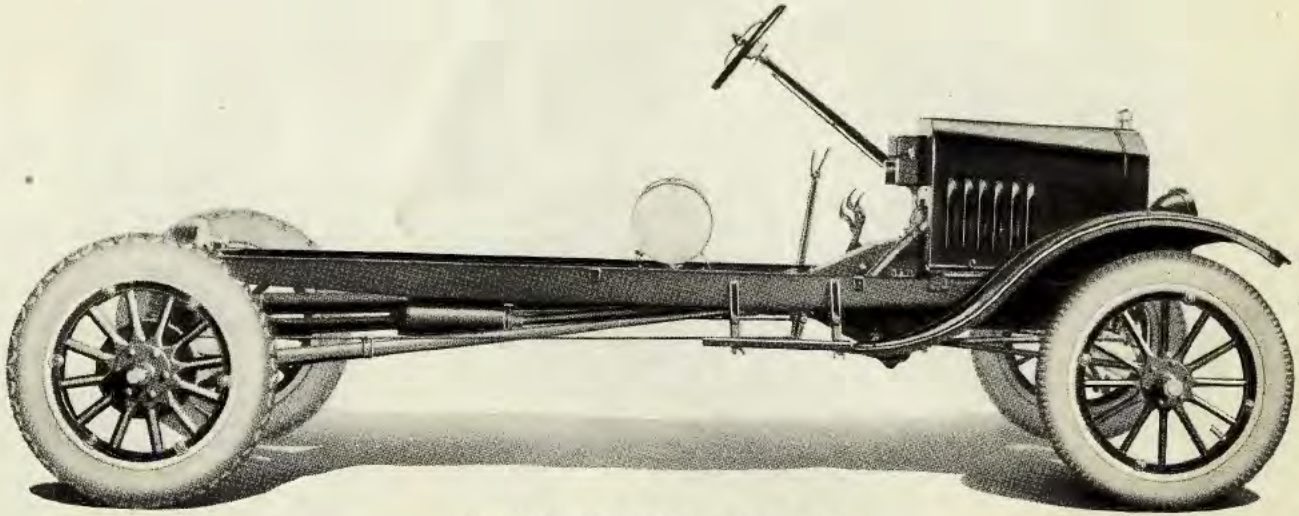
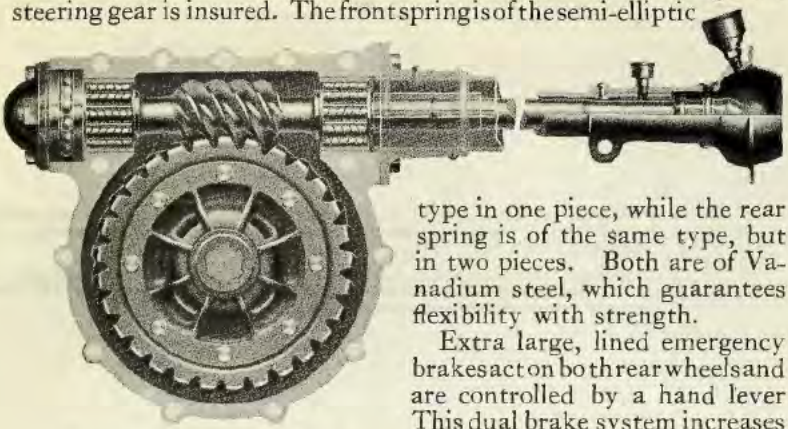


Ford Model T One Ton Truck

Equipment includes hood for motor, front fenders, stepping boards, two head lights, one tail light, horn and set of tools.
All Ford cars sold f. o. b. Detroit

complete chassis weighs but 1450 pounds, and as the result of this light weight, the maximum ratio of power is delivered to the rear wheels. At the same time, the fuel and tire expenses are reduced, and the ease of control through the steering gear is insured. The front spring is of the semi-elliptic



Worm drive construction of Ford One Ton Truck

type in one piece, while the rear spring is of the same type, but in two pieces. Both are of Vanadium steel, which guarantees flexibility with strength.

Extra large, lined emergency brakes act on both rear wheels and are controlled by a hand lever This dual brake system increases the factor of safety by placing the Truck under the immediate control of the driver and makes it possible to hold the car on an incline even though heavily loaded.

The Truck has a wheel base of 124 inches with tread of 56 inches. It can be turned in a 46-foot circle, a feature not to be lost sight of in the selection of a commercial vehicle.

The chassis has been designed to permit the use of a body with ample loading space for any commodity.

THE WHY OF QUALITY AND PRICES

Consider a production of 1,000,000 Ford cars in one year, which is the estimated output for the present twelve months, and consider it not only in point of magnitude of materials used, but as a buying force coupled with spot cash payments, and you get some idea of the power for economy in manufacturing possessed by the Ford Motor Company.

Over 445,000 tons of steel are required for the cars.
140,000,000 square feet of rubber cloth material for tops.
4,000,000 each of wheels and tires.
3,000,000 lamps.
17,649,348 feet of Vanadium steel shafting and axles.
5,586,666 square feet of plate glass for windshields.
121,649,337 feet of copper tubing for the radiators.
14,333,333 pounds of steel for Ford magnetos.
34,264 miles of wiring used in magnetos.
8,707,325 square feet of galvanized metal for gasoline tanks.
77,733,278 square feet of sheet metal for guards and fenders.
31,044,869 feet of tubular rods.
156,546 freight cars to handle material and product in addition to 79,534,404 pounds of material in less than carload shipments.
Approximately $15,000,000 profits are shared annually with employes.

Ford
THE UNIVERSAL CAR

Specifications of Ford Model T Pleasure Cars

Axles—Front axle of I-beam construction, especially drop-forged from a single ingot of Vanadium Steel, insuring the highest quality of axle strength obtainable. Rear axle also of Vanadium Steel and enclosed in a tubular steel housing. The Ford differential is of the three-pinion bevel type; all gears are drop forgings made of Vanadium Steel.

Bodies and Capacities—Ford cars are furnished with four styles of bodies—Runabout, for two passengers; Touring Car, capable of carrying five passengers; Coupe, two passengers; Sedan, five passengers.

Brakes—Dual system on all Ford cars. Service brake operates on the transmission and is controlled by foot pedal. Expanding brake in rear wheel drums serves as emergency brake. It is controlled by hand lever on left side of car.

Carburetor—Float feed automatic with dash adjustment. Specially designed to give maximum power, flexibility and easy starting, with economy of fuel consumption.

Control—On the left side of car. Three foot-pedal controls, low and high speeds, reverse, and brake on the transmission. Hand lever for neutral and emergency brake on left side of car. Spark and throttle levers directly under steering wheel.

Cooling—By Thermo-Syphon water system. Extra large water jackets and a special Ford vertical tube radiator permit of a continuous flow of water and prevent excessive heating. A belt-driven fan, is also used in connection with the cooling system.

Final Drive—Ford triangular drive system with all shafts, universal joint and driving gears enclosed in dust-proof and oil-proof housing. Direct shaft drive to the center of the chassis; only one universal joint is necessary. All shafts revolve on roller bearings; a ball and socket arrangement in the universal joint relieves the passengers of all shocks and strains caused by the unevenness of the road. The final drive of the Ford car is patented in all countries.

Gasoline Capacity—All Ford cars have gasoline tanks of 10 gallons capacity mounted directly on frame under front seat.

Lubrication—Combination gravity and splash system. Oil is poured into the crankcase through the breather pipe on the front cylinder cover. All moving parts of motor work in oil and distribute it to all parts of the power plant.

Ignition—*Magneto;* Special Ford design, built in and made a part of the motor. Only two parts to the Ford Magneto, a rotary part attached to the flywheel and a stationary part attached to the cylinder casting. No brushes, no commutators, no moving wires to cause annoyance on the Ford magneto.

Motor—Four-cylinder, four-cycle. Cylinders are cast en bloc with water jackets and upper half of crankcase integral. Cylinder bore is three and three-quarter inches; piston stroke is four inches. The Ford motor develops full twenty horsepower. Special Ford removable cylinder head permits easy access to pistons, cylinders and valves. Lower half of crankcase, one-piece pressed steel extended so as to form bottom housing for entire power plant—air-proof, oil-proof, dust-proof. All interior parts of motor may be reached by removing plate on bottom of crankcase—no "tearing down" of motor to reach crankshaft, camshaft, pistons, connecting rods, etc. Ford Vanadium Steel is used on all Ford crank and camshafts and connecting rods.

Springs—Both front and rear springs are semi-elliptical transverse, all made of special Ford heat-treated Vanadium Steel. Ford springs are the strongest and most flexible that can be made.

Starter—Two unit electric starting and lighting system. Starter is geared directly to flywheel and is entirely under cover. Compact in construction, strong and positive. *Generator:* Is geared directly to large time gear. No chain belts or other unnecessary appliances needing constant attention are in evidence.

Steering—By Ford planetary reduction gear system. Steering knuckles and spindles are forged from special Ford heat-treated Vanadium Steel, and are placed behind front axle.

Three-Point Suspension—Each of the Ford units is suspended at three points of the chassis. This method of suspension insures absolute freedom from strain on the parts and permits the most comfortable riding of the car body.

Transmission—Special Ford spur planetary type, combining ease of operation and smooth, silent running qualities. Multiple steel disc clutch operating in oil. Bands so designed as to grip smoothly and positively, and when disengaged, to spring clear away from the drum thus assuring positive and maximum power.

Unit Construction—There are four complete units in the construction of a Ford car—the power plant, the front running gear, the rear running gear and the frame.

Valves—Extra large, all on right side of motor and enclosed by two small steel plates.

Wheel Base—One hundred inches; Standard tread, fifty-six inches. All Ford cars will turn in a twenty-eight foot circle. This feature is of great advantage while operating in crowded thoroughfares.

Wheels and Tires—Wooden wheels of the artillery type with extra heavy hubs. Only tires of the highest grade are used on Ford cars. Front, 30 x 3 inches; rear, 30 x 3½ inches. On Coupe and Sedan cars, demountable rims and 3½-inch tires all around.

Specifications of Ford Model T One Ton Truck

Ford
THE UNIVERSAL CAR

Axles—Front axles of I-beam construction, especially drop-forged from Vanadium Steel, insuring the highest quality of axle strength obtainable. Rear axle also of Vanadium Steel, and enclosed in a tubular steel housing. The differential is of the two-pinion type; all gears are drop-forgings made of Vanadium Steel.

Brakes—Dual system. Service brake operates on the transmission and is controlled by foot pedal. Expanding brake in rear wheel drums serves as emergency brake. It is controlled by hand lever on left side of car.

Carburetor—Float feed automatic with dash adjustment. Specially designed to give maximum power, flexibility and easy starting, with economy of fuel consumption.

Clutch—Multiple steel disc, operating in oil.

Control—On the left side of car. Three foot-pedal controls, low and high speeds, reverse, and brake on the transmission. Hand lever for neutral and emergency brake on left side of car. Spark and throttle levers directly under steering wheel.

Cooling—By Thermo-Syphon water system. Extra large water jackets and a special Ford vertical tube radiator to permit of a continuous flow of water and prevent excessive heating. A belt-driven fan is also used in connection with the cooling system.

Final Drive—Is of the worm type, enclosed in a dust- and oil-proof housing. Direct shaft drive to the center of chassis; only one universal joint is necessary. A ball and socket arrangement in the universal joint reduces shocks and strains caused by the unevenness of the road.

Gear Ratio—Seven and one-quarter to one (7¼ to 1).

Gasoline Capacity—Cylindrical tank of 10 gallons capacity mounted directly on frame.

Lubrication—Combination gravity and splash system. Oil is poured into crankcase through the breather pipe on the front cylinder cover. All moving parts of motor work in oil and distribute it to all parts of the power plant.

Magneto—Special Ford design, built in and made a part of the motor. Only two parts to the Ford magneto, a rotary part attached to the flywheel and a stationary part attached to the cylinder casting. No brushes, no commutators, no moving wires to cause annoyance on the Ford magneto.

Motor—Four-cylinder, four-cycle. Cylinders are cast en bloc with water jackets and upper half of crankcase integral. Cylinder bore is three and three-quarter inches; piston stroke is four inches. The Ford motor develops full twenty horsepower. Special Ford removable cylinder head permits easy access to pistons, cylinders and valves. Lower half of crankcase, one-piece pressed steel extended so as to form bottom housing for entire power plant—air-proof, oil-proof, dust-proof. All interior parts of motor may be reached by removing plate on bottom of crankcase—no "tearing down" of motor to reach crankshaft, camshaft, pistons, connecting rods, etc. Ford Vanadium Steel is used on all Ford crank and camshafts and connecting rods.

Springs—The front spring is semi-elliptical transverse in one piece and the rear spring two-piece semi-elliptical transverse, all made of special Ford heat-treated Vanadium Steel. Ford springs are the strongest and most flexible that can be made.

Steering—By Ford planetary reduction gear system. Steering knuckles and spindles are forged from special Ford heat-treated Vanadium Steel, and are placed behind front axle.

Three-Point Suspension—Each of the Ford units is suspended at three points of the chassis. This method of suspension insures absolute freedom from strain on the moving parts.

Transmission—Special Ford spur planetary type, combining ease of operation and smooth, silent running qualities. Clutch is so designed as to grip smoothly and positively, and when disengaged to spring clear away from the drums, thus assuring positive action and maximum power.

Unit Construction—There are four complete units in the construction of a Ford car—the power plant, the front running gear, the rear running gear and the frame.

Valves—Extra large, all on right side of motor and enclosed by two small steel plates.

Wheel Base—Model T Truck has a wheel base of one hundred twenty-four inches. The standard tread for all cars is fifty-six inches. Model T Truck will turn in a forty-six foot circle.

Wheels and Tires—Wooden wheels of the artillery type with extra heavy hubs. Demountable rims Pneumatic tires of the highest grade are used on Ford cars. Front, 30 x 3½ inches; rear 32 x 4½ inches.

Carrying Capacity—One Ton.

Speed—We recommend not more than 15 miles per hour.

LUBRICANT FOR WORM DRIVE—An A-1 heavy fluid or semi-fluid must be used to lubricate differential in Model T Truck.

ASSEMBLY AND BRANCH PLANTS

Atlanta, Ga.

Buffalo, N. Y.

Cambridge, Mass.

Charlotte, N. C.

Chicago, Ill.

Cincinnati, O.

Cleveland, O.

Columbus, O.

Dallas, Tex.

Denver, Colo.

Des Moines, Ia.

Detroit, Mich.

Fargo, N. D.

Houston, Tex.

Indianapolis, Ind.

Kansas City, Mo.

Los Angeles, Cal.

Louisville, Ky.

Memphis, Tenn.

Milwaukee, Wis.

Minneapolis, Minn.

ASSEMBLY AND BRANCH PLANTS—Continued

Oklahoma City, Okla.

Omaha, Neb.

Philadelphia, Pa.

Pittsburgh, Pa.

Portland, Ore.

St. Louis, Mo.

San Francisco, Cal.

Seattle, Wash.

Washington, D. C.

FIGURES THAT MEAN PROVEN MERIT

It is the system of assembly and branch plants shown above which, with the output of the Detroit factory, has made possible the production record of the Ford Motor Company since its organization, June 16, 1903. This record is one of the marvels in the industrial achievements of the world, wonderful and unparalleled, and surely, such figures could only be possible through a product so valuable and widely serviceable as to be with Mankind a common necessity. The fiscal year of the Ford Motor Company is from August 1st to July 31st, and here is the record of production.

In 1903-4, there were made and sold	1,708 Ford cars.
In 1904-5, the Company built and sold	1,695 Ford cars.
In 1905-6, the production and sales were	1,599 Ford cars.
In 1906-7, the total cars made and sold was	8,423 Ford cars.
In 1907-8, production and sales were	6,398 Ford cars.
In 1908-9, the phenomenal growth began with	10,607 Ford cars.
In 1909-10, production jumped to a total of	18,664 Ford cars.
In 1910-11, there were made and sold a total of	34,528 Ford cars.
In 1911-12, the production more than doubled with	78,440 Ford cars.
In 1912-13, a new mark was touched with	168,220 Ford cars.
In 1913-14, an even greater triumph achieved by	248,307 Ford cars.
In 1914-15, all previous efforts were beaten with a total of	308,213 Ford cars.
In 1915-16, the volume of production reached	533,921 Ford cars.
In 1916-17, the record was again raised to	785,432 Ford cars.
In 1917-18, the war interfered and production fell to	706,584 Ford cars.
In 1918-19, war work cut production to about	533,706 Ford cars.
For 1919-20, the estimated production is	1,000,000 Ford cars.

Ford
THE UNIVERSAL CAR

Ford Factories and Branches

Ford Factory, Detroit—*Parent Plant*—
Capacity 1,200,000 cars annually

Ford Factory, Ford, Ontario, Canada—
Capacity 75,000 cars annually

Ford Factory, Manchester, England—
Capacity 25,000 cars annually

American Wholesale Branches

Atlanta—465 Ponce de Leon Ave.
Buffalo—2495 Main St.
Cambridge—Charles River Road
Charlotte—208 East Sixth St.
Chicago—3915 Wabash Ave.
Cincinnati—660 Lincoln Ave.
Cleveland—11610 Euclid Ave.
Columbus—427 Cleveland Ave.
Dallas—2800 Williams St.
Denver—920 S. Broadway
Des Moines—19th and Grand Ave.
Detroit—1550 Woodward Ave.
Fargo—509 Broadway
Houston—4006 Harrisburg Road
Indianapolis—1315 E. Washington St.
Jacksonville—16 East Ashley St.
Kansas City, Mo.—1025 Winchester Ave.
Kearney, N. J.
Los Angeles—2060 East Seventh St.
Louisville—2400 South Third St.
Memphis—495 Union Ave.
Milwaukee—411 Prospect Ave.
Minneapolis—420 North 5th St.
New Orleans—2120 Canal St.
New York—1710 Broadway
Oklahoma City—900 W. Main St.
Omaha—1502 Cuming St.
Philadelphia—2700 N. Broad St.
Pittsburgh—5000 Baum Blvd.
Portland—481 East 11th St.
St. Louis—4100 Forest Park Blvd.
Salt Lake City—230 W. Temple St.
San Francisco—2905 21st St.
Scranton—601 Wyoming Ave.
Seattle—724 Fairview Ave.
Washington—466 Pennsylvania Ave., N. W.

Foreign Branches and Service Stations

Calgary, Alta.—127 E. 11th Ave.
Hamilton, Ont.—74 John St.
London, Ont.—680 Waterloo St.
Montreal, Que.—191 Laurier Ave., E.
Saskatoon, Sask.—1st and 25th Sts.
St. John, N. B.—Rothesay Ave.
Toronto, Ont.—672 Dupont St.
Vancouver, B. C.—1531 W. 15th Ave.
Winnipeg, Man.—Portage and Wall Sts.
London, Eng.—55 Shaftesbury Ave.
Manchester, Eng.—Trafford Park
Melbourne, Aus.—153 Williams St.
Bordeaux, France—Place Sainte Croix
Buenos Aires, Argentine—752 Peru
Cadiz, Spain
Copenhagen, Denmark—Heimdalsgade 42-44
Paris, France—61 Rue de Cormeilles
San Paulo, Brazil, 106 Florencio de Abreu

Foreign Department

1710 Broadway, New York

There are Ford Dealers in all principal cities and towns throughout the entire country

500M-11-23-19

Ford Motor Company
Detroit Michigan