



SECOND EDITION

CATALOG
OF THE
MODEL "K" AND MODEL "L"
WHITE STEAM CARS

THE WHITE COMPANY
CLEVELAND, OHIO

BRANCH OFFICES

Broadway and 62nd Street, New York City

320 Newbury Street, Boston, Massachusetts

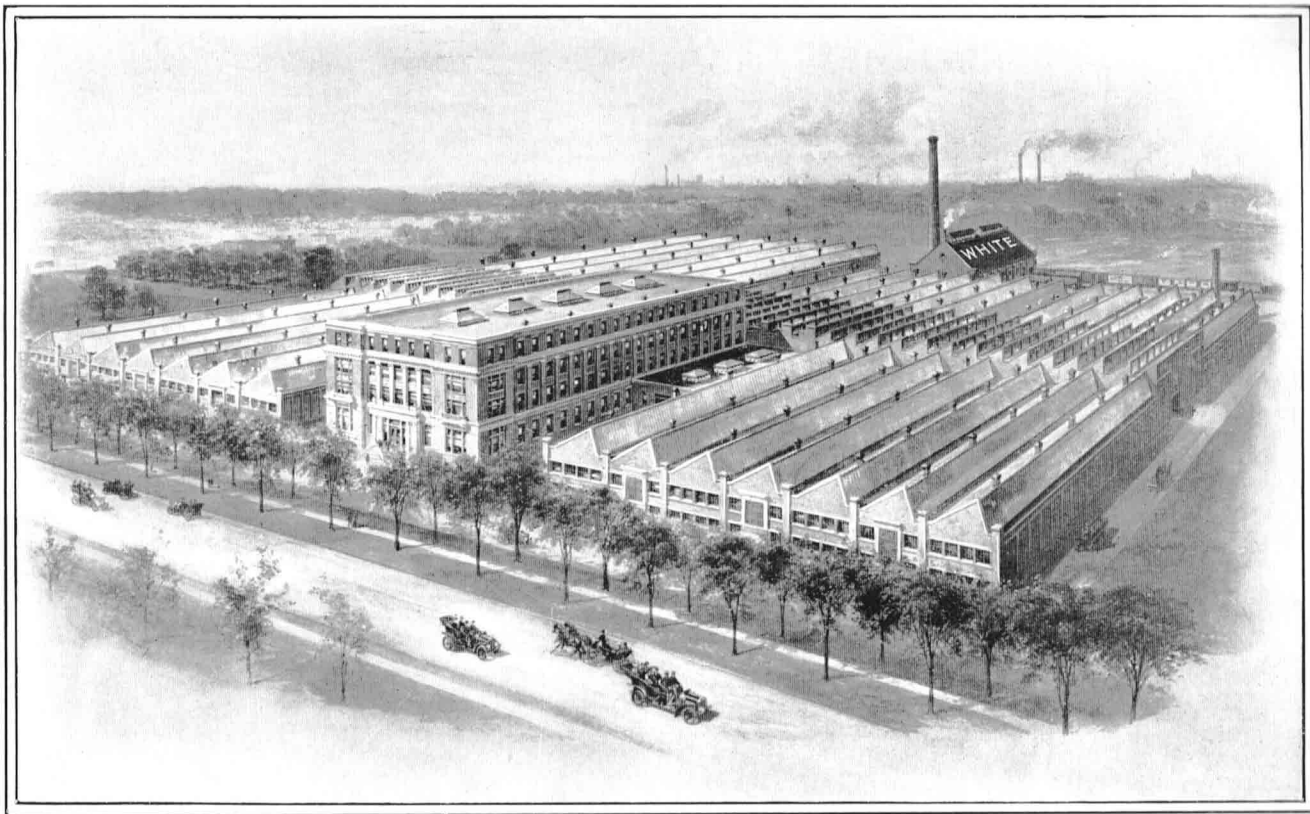
1460 Market Street, San Francisco, California

629-33 North Broad Street, Philadelphia

240 Michigan Avenue, Chicago

407 Rockwell Avenue, Cleveland

35 Kingly Street-Regent Street, London-West, England



THE NEW FACTORY OF THE WHITE COMPANY

ANNOUNCEMENT

DURING the coming season we shall offer two distinct models, a 30 horse-power car, known as the Model "K," and a 20 horse-power car, known as the Model "L." These models are the successors respectively of the Model "G" and the Model "H" of the present season, and the prices for each model, with the various styles of body, are unchanged. The Model "K" has a somewhat longer wheel-base and is hung nearer the ground than its predecessor. The Model "L" has a larger generator than had the Model "H."

In both of the new models a change has been made in the position of the thermostat. This device is located in a most accessible position in the steam line connecting the generator and the engine. The thermostat is readily adjustable and can be replaced within a few minutes. A thermometer, which can be read from the driver's seat, is fitted to the steam line, so that the driver can see at all times the temperature of the steam.

1901—THE WHITE STEAM CAR—1908

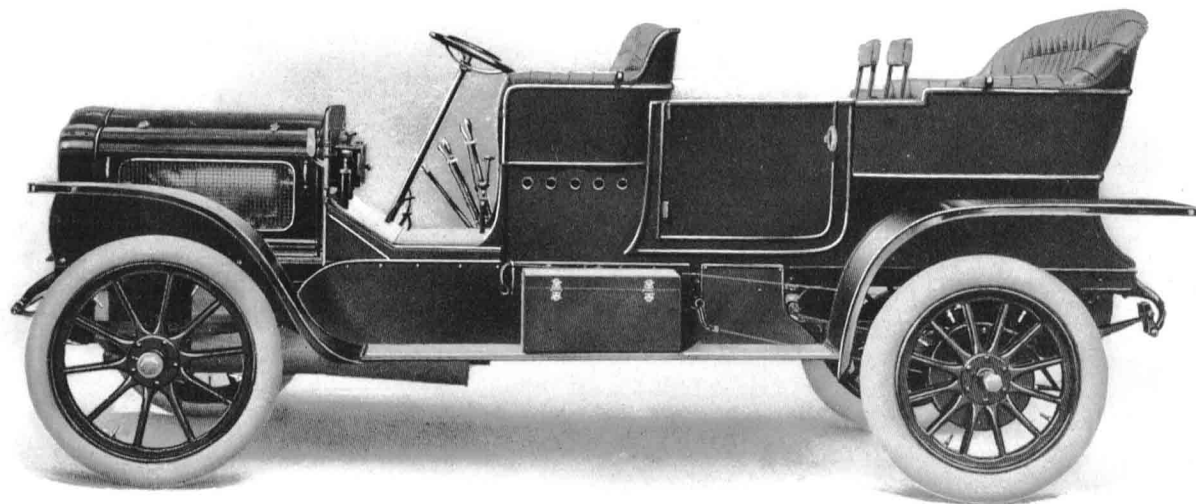
THE WHITE Steam Car is now entering upon its eighth season before the public. The prestige which it enjoys to-day, not only in this country but practically throughout the civilized world, is a result of its splendid performance in private service and in public competitions during the entire period which has elapsed since it was first put upon the market. To give an adequate idea of the impressive way in which the WHITE has demonstrated its superiority over other types of motor cars, it would be necessary to give a complete history of important motor car contests, commencing with the New York-Rochester endurance run in 1901, the first contest of the kind held in this country, wherein 100 per cent. of the four WHITE starters received first-class certificates, as compared with but 20 per cent. of first-class certificates won by the other starters. The chronicle would be much the same in the intervening years and would terminate, for the moment, with the Glidden Tour of 1907, wherein the WHITE Steamer was the only make represented by three or more cars which was not penalized and

wherein the only individual prize offered, the Hower Trophy, was won by the WHITE Steam Runabout. The complete records of WHITE victories, not only in endurance and reliability contests but also on the track, on the road and on the mountainside, may be found in the WHITE Bulletin, of which fourteen numbers have been issued.

While it has been possible to demonstrate in public competition the unequalled reliability, the unmatched hill-climbing qualities and the superior speed of the WHITE, it has not been possible to demonstrate publicly, in this country at least, many of the pronounced qualities which make the WHITE more desirable than other types of machines. Suppose that there were held at intervals "Noise Competitions" wherein awards were made to the cars which made the least noise. Suppose that contests were in vogue wherein the prizes went to the cars that made the least odor or showed the least exhaust. Suppose that it were practicable to determine the physical effort necessary on the part of drivers of various makes of machines in guiding their cars over a

MODEL "K" WHITE TOURING CAR

WITH STRAIGHT LINE BODY



WHEEL-BASE, 122 INCHES

30 HORSE-POWER

PRICE, \$3,700

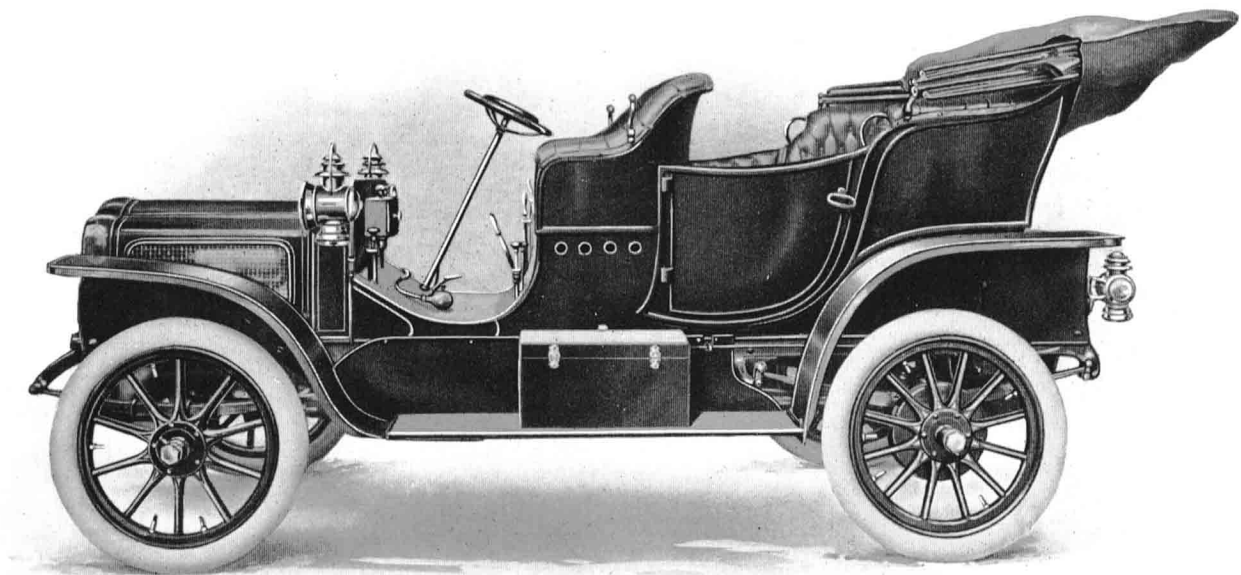
given route. Is there any one who doubts that 100 per cent. of the honors in such contests would go to the WHITE?

Fortunately, a beginning has been made in England in the direction of holding competitions to test the desirability of motor cars from points of view other than those of speed and reliability. The first contest of this kind was the London Town Carriage Competition, the announced purpose of which was "To determine the relative advantages of different types of self-propelled vehicles for town use." The cars were judged on no less than fourteen separate points, covering the principal features of construction and operation. Twenty-two of the leading foreign cars were pitted against the WHITE in this contest, but the highest award went to the WHITE entries. In the more recent English "Dust Competition," it was officially decided that the WHITE raises less dust than any other make of car. The third English desirability contest was the South Harting hill-climb, held under the auspices of the Royal Automobile Club. This was primarily an efficiency contest wherein the first award was made to the WHITE because it developed at the rear wheels a greater percentage of its assigned horse-power than did any other car, the rating assigned to the WHITE by the Royal Automobile

Club being 50 horse-power. Expressed in other words, the contest showed that, in the WHITE, a smaller proportion of the power of the engine is lost in wear and tear on the mechanism than in any other car.

Close observers of automobile development and of automobile doings, however, have found many reasons, besides the result of public contests, to incline them toward the WHITE in preference to any other car. They have noted, first of all, the extraordinary longevity of the WHITE. While the early models of other machines have entirely disappeared from view, the WHITE stanhopes of 1901 and 1902, and the first WHITE touring cars are still in active operation—out of date, it is true, but not out of commission. These observers have also regarded as significant that those who have once owned a WHITE continue their allegiance to this make. Furthermore, motorists of experience appreciate the value of the testimony of those in the tire business that "Tires last twice as long on the WHITE as on any other car of equal weight." The tendency of the government of this country and of other countries to select the WHITE when automobiles are desired for military or other official service has also made its impression. Discriminating purchasers have also been impressed by the fact

MODEL "L" WHITE TOURING CAR



WHEEL-BASE, 104 INCHES

20 HORSE-POWER

PRICE, \$2,500

that the WHITE is the only American touring car which is in demand, not only in far-off "open markets" like Japan and Australia, but also in countries abundantly supplied with cars of local manufacture. In England, for example, there are more WHITE cars than there are of any one foreign make in the United States.

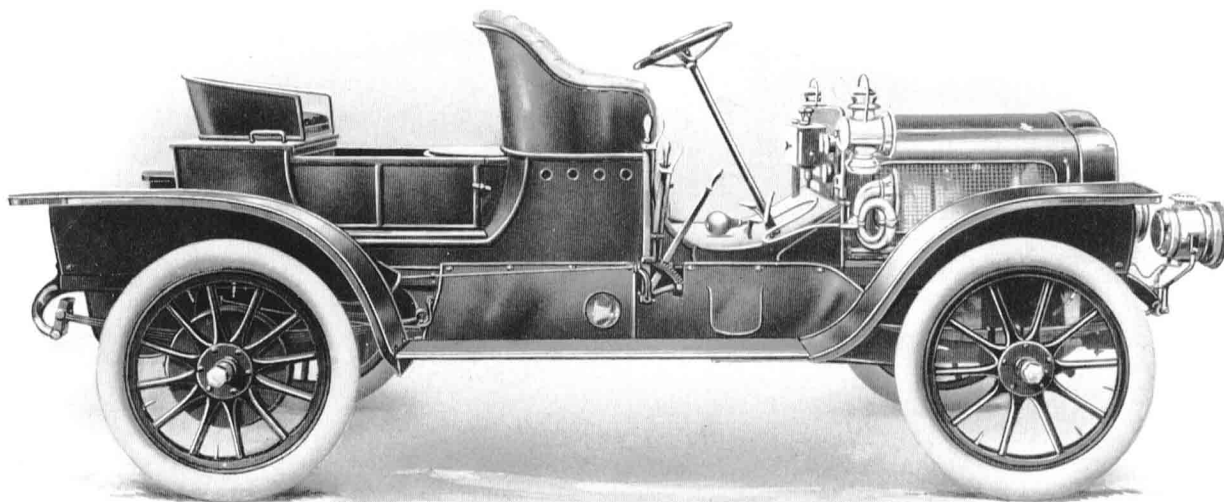
The factor which has perhaps made the deepest impression upon the purchasing public is that the development of the WHITE Car has been a more orderly evolution than has been the case with any other machine, that is, there has been less necessity for radical redesigning and there has been no "right-about-face" in the lines along which the car has been developed. For example, the prevailing problem of "How many cylinders?" never concerns our customers or ourselves. Every WHITE Car ever built has been fitted with a two-cylinder engine. In the WHITE stanhope of 1901 and 1902, two simple engines were used. In all the later models of the WHITE, commencing with 1903, the compound engine has been used. The WHITE engine has amply demonstrated itself to be in every way ideally adapted for automobile work. It runs smoothly and without noise or vibration regardless of what the load

may be. It has great power at starting and at all other times. All speeds from zero to maximum are obtained by throttle control. In other words, that essential quality, "flexibility," which designers of gasoline engines are striving to obtain in limited degree by the multiplication of cylinders, of cost and of complication is, in fullest degree, one of the inherent qualities of the WHITE engine.

A similar continuity of design, likewise indicating perfect adaptability for the work which it is called upon to do, has prevailed in the case of the WHITE generator. This vital part has undergone no essential change in the principles of its construction from the time when the first WHITE cars were put upon the market. The development which has taken place in the WHITE system has been along the lines of refining the automatic methods of regulation with the result that, in the present models, the pressure and temperature of the steam remain constant whether the car is running fast or slow, coasting or climbing the steepest hill. Furthermore, a person driving a WHITE car for the first time can obtain as good results as the most experienced operator. As regards simplicity of operation, no other car can approach the WHITE.

MODEL "K" WHITE RUNABOUT

HOWER TROPHY TYPE



WHEEL-BASE, 105 INCHES

30 HORSE-POWER

PRICE, \$3,400

MECHANICAL FEATURES OF THE WHITE STEAM CAR

THE WHITE GENERATOR

ANY description of the WHITE Car must necessarily commence with a description of the generator, as this is the feature which, more than any other, distinguishes it from all other automobiles. Furthermore, there is no other make of car embodying any of these principles of generator construction, owing to the protection afforded to the inventor by the patent laws of all civilized countries. The generator is located about in the center of the chassis. It is enveloped by an asbestos insulating casing, which in turn is surrounded by an annular flue, through which the products of combustion are conducted downward and are dissipated into the air without their escape being in any way noticeable.

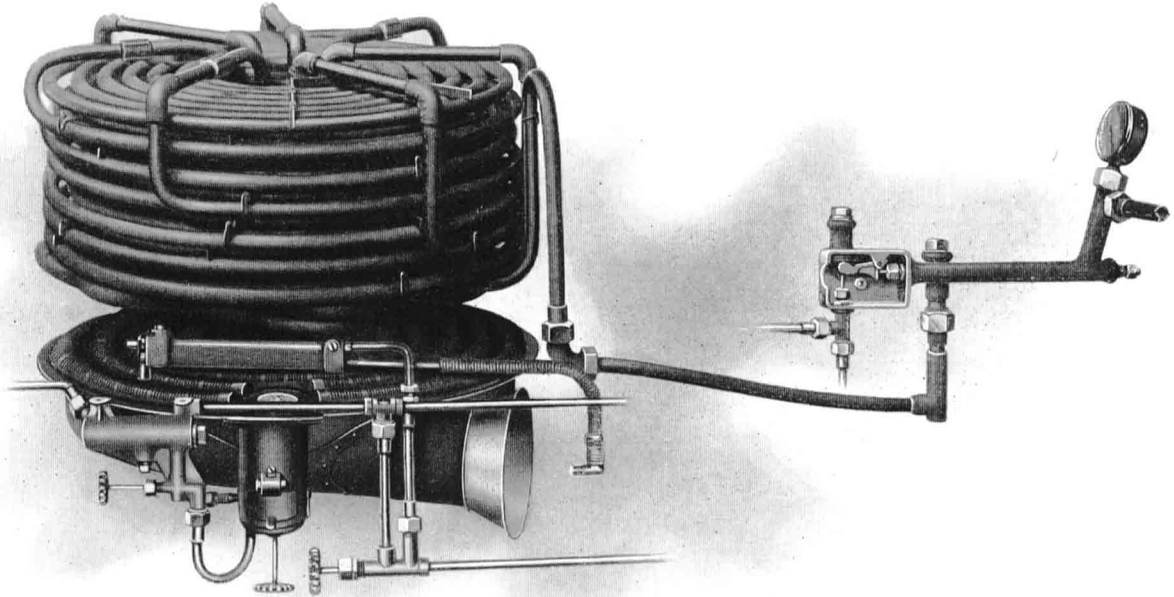
The WHITE generator is radically different from any other type of boiler ever constructed. In the first place, in every other known type of boiler the water is at the bottom and the steam at the top. In the WHITE generator, on the contrary, the water is at the top and

the steam at the bottom. This fact alone is sufficient to show the unique construction of the WHITE generator.

The WHITE generator consists of nine coils of steel tubing superimposed above one another. The seven upper coils are wound spirally, while the two lower coils are wound in what might be called "gridiron" fashion. The several coils are joined in series, and if the whole should be unwound and straightened out, the generator would be seen to be made up of a single, long piece of tubing. Below the coils is located the burner. The coils offer a very large heating surface so that as the products of combustion pass up between them, practically all of their heat is absorbed by the coils.

The connections between the coils are so made that the water or steam, in order to pass from one coil to that next below, must be forced up to a level above the top coil and then pass down again. This feature is an important element in the construction of the generator, as it prevents water from descending by gravity and

THE WHITE GENERATOR



This illustration shows the White generator, together with the burner, vaporizer and the pilot light. On the right may be seen the thermostat which controls a valve for admitting an auxiliary water supply to the generator. The dial of the thermometer is plainly visible from the driver's seat. The active element of the thermostat, a bronze rod, may be readily adjusted or replaced.

renders the circulation down through the generator dependent upon the action of the pumps.

The operation of the generator is as follows: Water is pumped from the tank through the feed-water heater and into the upper coil and, as it is forced into the coils below, its temperature gradually rises. At some variable point in the lower part of the generator it "flashes" into steam. In the lower coils the steam receives a high degree of superheat, and in this condition leaves the generator and is conducted to the engine.

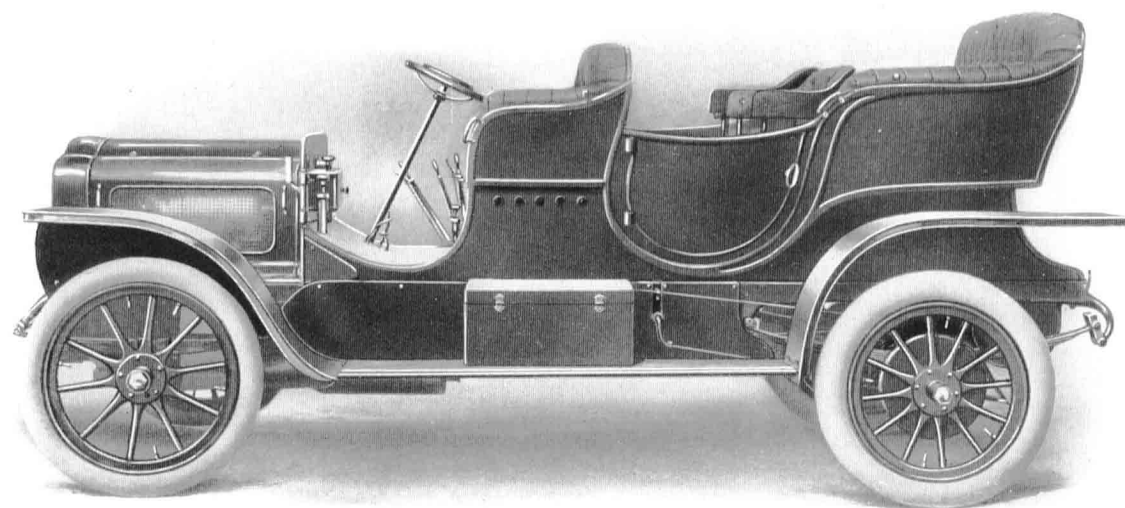
As regards the safety of the system, it should be noted, first of all, that there is but little water and steam in the generator at any one time and, even in the event of its simultaneous liberation, the effect would be inconsequential, as compared with the failure of an ordinary boiler, in which there is present not only a great volume of steam but also a large amount of water which passes into steam as soon as the pressure is reduced. The late Professor Thurston, Dean of the School of Mechanical Engineering of Cornell University, in dis-

cussing this point in a professional report, said: "The tubular construction (of the WHITE generator) permits insurance of safety against pressure of excessive amount, since these small tubes are strong enough to bear enormous pressures—pressures, in fact, many times greater than those employed. Even if rupture is effected by deliberate over-pressure to the required amount, it will not result in anything more serious than a split tube, in which the rent acts as a self-provided safety-valve."

Attention is called to the fact that as there is no "water-level" to maintain, there is no need of water gauge, water-glass, float, fusible plug or other device, such as is used in connection with ordinary types of boilers. So rapid is the circulation through the generator, that mineral matter, whether in solution or in suspension in the water supplied to the generator, is carried through the generator without causing any incrustation, as is proven by the experience of all of our owners, especially of those who have driven thousands of miles in regions where "hard" water is invariably used.

MODEL "K" WHITE TOURING CAR

WITH CURVED LINE BODY



WHEEL-BASE, 122 INCHES

30 HORSE-POWER

PRICE, \$3,700

THE WHITE ENGINE

THE WHITE engine is compound, vertical, of the same type as used in our cars since 1903. The high-pressure cylinder is provided with a piston valve, and the low-pressure cylinder is fitted with a slide valve. The valve motion is of the familiar Stephenson link type, and is actuated from the crank shaft by a set of four eccentrics. Every bearing on the crank shaft is a ball-bearing of generous dimensions.

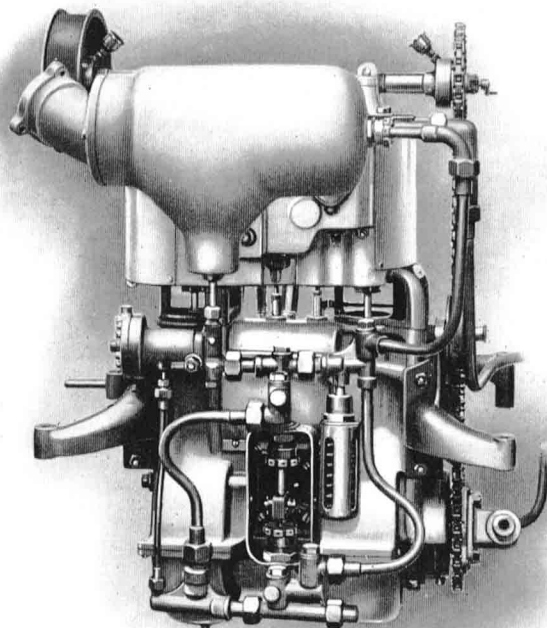
In the Model "K" engine, the high-pressure cylinder is 3 inches in diameter and the low-pressure is 6 inches in diameter. The stroke is $4\frac{1}{2}$ inches. On the left hand side (looking forward) of the engine are the two pumps which supply water to the generator. These are driven from an eccentric on the crank shaft by means of a rocker arm. On the right side of the engine are the air pump and the pump which returns the water from the condenser to the tank. These two pumps are also driven from an eccentric on the crank shaft. The engine is supported on cross-beams on the main frame by means of four suitably curved brackets. The pumps and all connections are easily accessible.

In the Model "L" engine, the high-pressure cylinder is 3 inches in diameter and the low-pressure cylinder is

5 inches in diameter. The stroke is $3\frac{1}{2}$ inches. The water pumps are located and driven the same as in the Model "K." The condenser pump is located on the front of the engine and is driven by an extension from the low-pressure cross-head pin. The air pump is on the right hand side of the engine and is driven by means of a connecting rod from the crank shaft. The engine is supported on an aluminum pan, which allows perfect accessibility, and which gives protection from mud and dust.

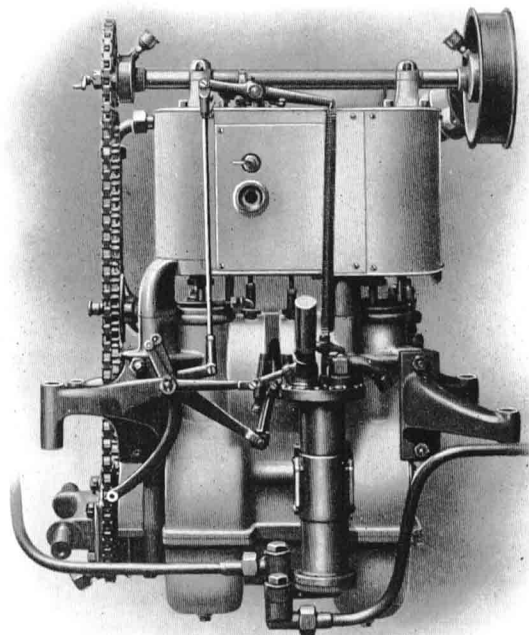
To those who are familiar with the ordinary types of steam machinery, the economy and efficiency of the WHITE engine and the WHITE generator are matters of great interest. Prof. R. C. Carpenter, of Cornell University, in a paper read before the American Society of Mechanical Engineers, reported that the WHITE power plant (generator, engine and all accessories) develops one actual horse-power for each 14.3 pounds of weight. Professor Carpenter further reported that, in the extensive tests which he had conducted, the WHITE power plant showed a water consumption of but 11.96 pounds per horse-power per hour. This wonderful economy is equalled only by that of the largest triple-expansion condensing engines.

WHITE MODEL "K" ENGINE



LEFT SIDE

Showing the feed-water heater, the pumps for supplying generator, and the water regulator



RIGHT SIDE

Showing the air pump for supplying pressure to fuel tank and the pump for returning water from condenser to tank

THE WHITE REGULATING SYSTEM

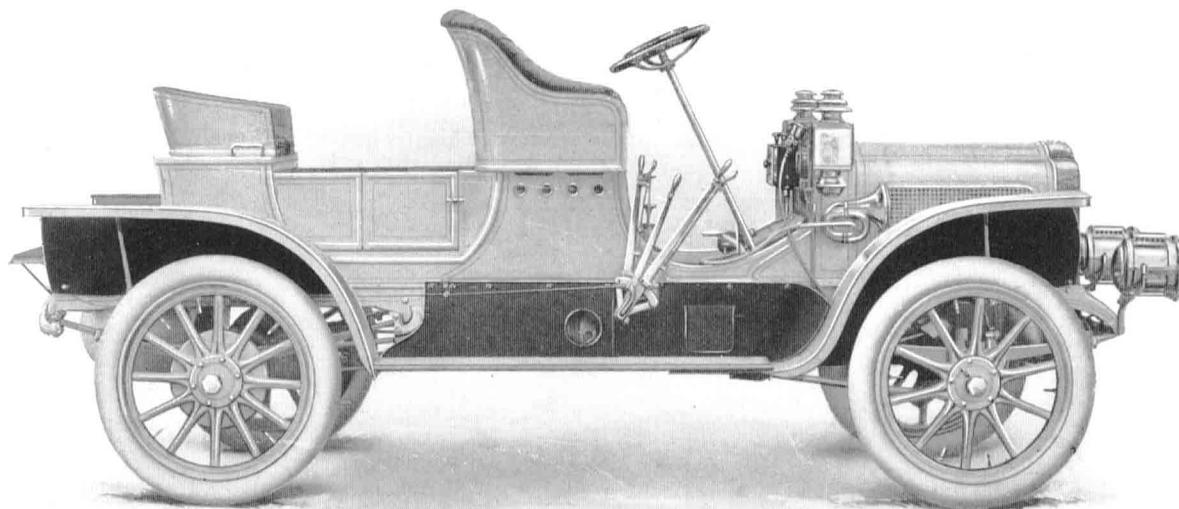
OBVIOUSLY, the amount of water to be supplied the generator and the amount of fuel to be supplied the burner will vary with different running conditions. Both the water and fuel supply are automatically controlled without in any way engaging or requiring the attention of the operator.

There is a water-regulator of the familiar diaphragm type which alternately directs toward the generator or diverts therefrom the water from the pumps, according to whether the steam pressure is below or above the normal working pressure. There are two separate paths by which water may reach the generator from the pumps. One path is by way of a simple device called the flow-motor and the other is by way of a thermostat. The first path may be described as the main source of supply, while the second path, by way of the thermostat, is an additional source of supply which comes into action only when additional water is needed. The opening and

closing of the gasoline supply to the burner is controlled by the flow-motor. Whenever water is passing through the flow-motor, which will happen whenever the engine is running and the steam pressure is below normal, a valve in the line supplying fuel to the burner will be open and the fire will be "on." At all other times the supply of fuel to the burner will be shut off. When the temperature of the steam tends to exceed the normal, the thermostat comes into action and permits additional water to enter the generator. Since the amount of fuel is not increased, this additional supply of water tends to bring the temperature of the steam at once back to normal.

The action and interaction of the several regulating devices are such as to maintain the steam under all operation conditions, at a practically constant pressure with a uniform degree of superheat, as is evidenced by the readings of the steam gauge and of the thermometer.

MODEL "L" WHITE RUNABOUT



WHEEL-BASE, 104 INCHES

20 HORSE-POWER

PRICE, \$2,400

OTHER CHARACTERISTIC WHITE FEATURES

ALTHOUGH the WHITE car has not a condensing engine in the usual sense of that term, it is nevertheless true that a considerable proportion of the steam is condensed and the water thus used over and over again. From the engine the steam is conducted into a condenser which forms the front of the car. The condenser consists of a number of vertical finned tubes, which offer a very large cooling surface. There is a large fan behind the condenser which aids the circulation of air between the tubes, thus increasing the efficiency of condensation. That a WHITE will run 150 miles on one filling of the water tank is a very conservative estimate.

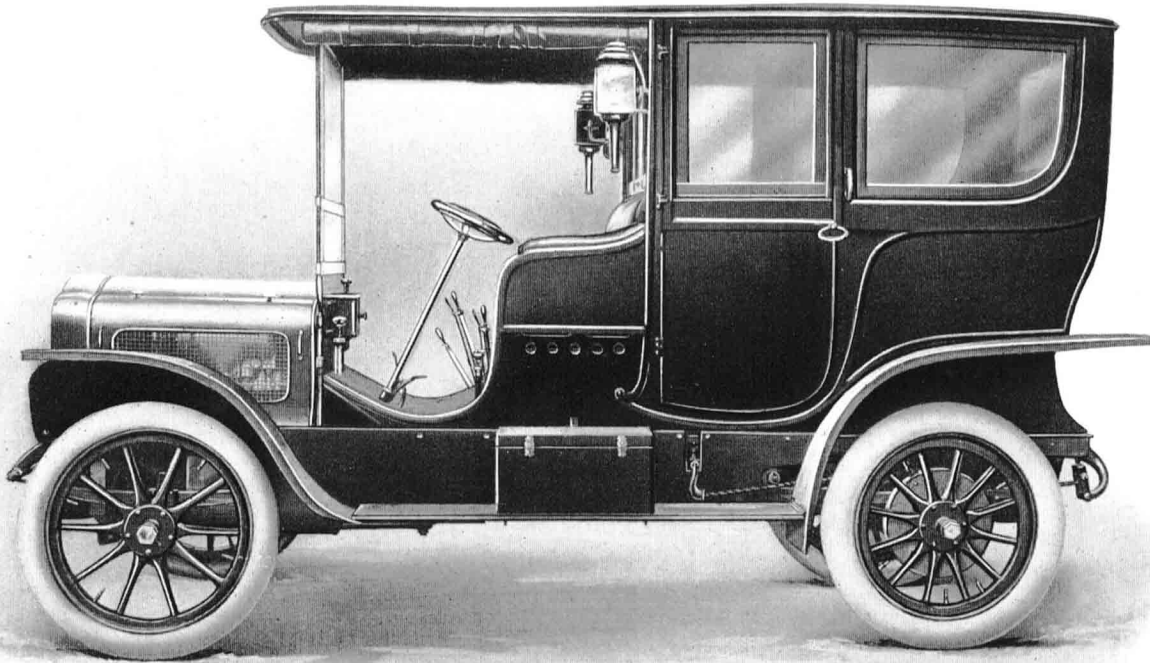
The feed-water heater consists simply of a coil of piping located in the exhaust pipe leading from the engine to the condenser. The water on its way from the pumps to the generator passes through this coil and absorbs a certain amount of heat from the exhaust steam. It thus enters the generator at a higher temperature than otherwise would be the case, and at the same time the process of condensation of the exhaust steam is aided.

The gasoline tank, of about twenty-four gallons capacity, is made of pressed steel. It is hung in a well-protected position between the rear of the frame and one of the cross braces which connect the sides of the frame. The tank is fitted with a float indicator, so that the level of the fuel within may be readily ascertained.

The fuel is supplied to the burner under a moderate pressure, which is maintained by the air-pump attached to the engine. The fuel first passes through the vaporizer and then enters the burner, where it mixes freely with air and burns with a blue flame, giving perfect combustion. The pilot-light performs the two-fold function of heating the vaporizer and lighting the burner (as has already been stated, fuel is only intermittently supplied to the burner, the quantity being automatically controlled to suit the running conditions).

The frame of both models is of armored wood. Experience has shown that this construction is much stronger, weight for weight, than one of pressed steel, and will much better withstand severe shocks and strains.

MODEL "K" WHITE LIMOUSINES



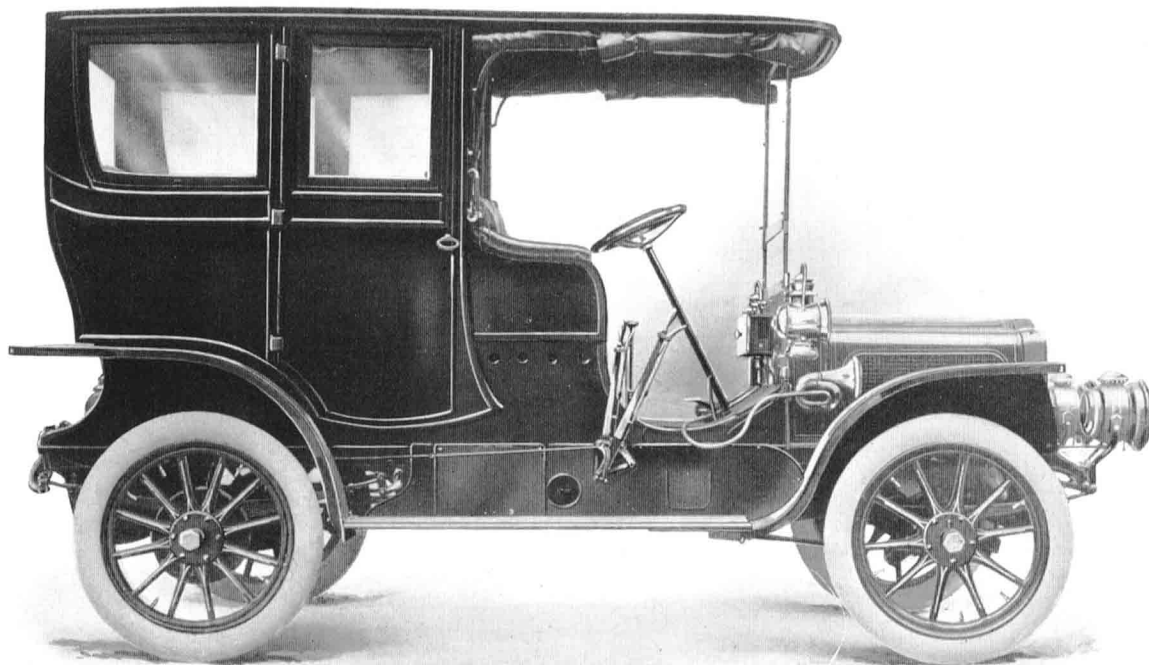
WHEEL-BASE, 116 INCHES 30 HORSE-POWER PRICE, \$4,500 With Pullman Seats, \$4,700

HITHERTO we have spoken only of those features which are peculiar to the WHITE Car. In describing those features of the WHITE which are common to all automobiles, such as brakes, axles, wheels, oiling system, etc., it is difficult to do justice to the subject. The specifications of two different automobiles may read much the same, yet as regards suitability for hard service, there may be no comparison between the two. For example, a certain car may have a "shaft drive," but the shaft is set at such an angle as to involve considerable wear at the universal joints and much loss of power. Therefore, when we specify that the WHITE has a shaft drive, we wish to emphasize that the driving-shaft from engine to rear axle is horizontal and that the universal joints have practically no work to do. Similarly, while almost every machine has "two independent sets of brakes," one must compare the unusually large brake surfaces on the WHITE with the corresponding parts in other machines, to fully appreciate this feature of the WHITE car. In short, the proper designing of every part of a machine, major and minor, is a matter of experience, and the symmetrically

robust automobile is that which issues from a factory which has been building cars for a number of years in large quantities. In this connection we would point out that we have built more large touring cars than any other concern in the world. The purchaser of a WHITE, therefore, receives the benefit of an experience in designing and building not obtainable elsewhere.

There are a thousand and one details of automobile construction—such as the correct selection of special steels for the various working parts and their proper heat treatment—which cannot be adequately treated in a catalog. It is when automobiles are put to a test such as the 1907 Glidden Tour—the longest and hardest endurance contest ever held—that the public has its best opportunity to judge of the comparative merits of the different makes. The results of that contest—100 per cent. of the WHITE cars finishing with perfect scores, as compared with but 30 per cent. of the gasoline cars—are more eloquent of WHITE superiority than would be many pages descriptive of the advantages of steam power and the particular methods of constructing each part of a WHITE Steam Car.

MODEL "L" WHITE LIMOUSINE



WHEEL-BASE, 104 INCHES

20 HORSE-POWER

PRICE, \$3,200

SPECIFICATIONS

MODEL "K" WHITE STEAM CAR

30 Steam Horse-Power

DIAMETER OF HIGH-PRESSURE CYLINDER	3 inches	FRONT TIRES	36x4 inches
DIAMETER OF LOW-PRESSURE CYLINDER	6 inches	REAR TIRES	36x5 inches
STROKE	4½ inches	FRONT SPRINGS	44 inches
INTERNAL DIAMETER OF GENERATOR TUBING	½ inch	REAR SPRINGS	56 inches
WHEEL-BASE OF TOURING CAR . .	122 inches	HAND BRAKE—Powerful contracting brake act- ing on drums on rear wheels.	
WHEEL-BASE OF LIMOUSINE AND LAN- DAULET	116 inches	FOOT BRAKE—Powerful expanding brake act- ing within drums on rear wheels.	
WHEEL-BASE OF RUNABOUT . .	105 inches	GASOLINE TANK CAPACITY . . .	24 gallons
		WATER TANK CAPACITY . . .	17 gallons
		MINIMUM CLEARANCE	10½ inches

ALL PRICES HEREIN QUOTED ARE F. O. B. CLEVELAND

Prices do not include Acetylene Lamps, Tops or other extra equipment

SPECIFICATIONS

MODEL "L" WHITE STEAM CAR

20 Steam Horse-Power

DIAMETER OF HIGH-PRESSURE		FRONT SPRINGS	42½ inches
CYLINDER	3 inches	REAR SPRINGS	50 inches
DIAMETER OF LOW-PRESSURE		HAND BRAKE—Powerful expanding brake act-	
CYLINDER	5 inches	ing on drums on rear wheels.	
STROKE	3½ inches	FOOT BRAKE—Powerful expanding brake on	
INTERNAL DIAMETER OF GENERATOR		flywheel.	
TUBING	½ inch	GASOLINE TANK CAPACITY	20 gallons
WHEEL-BASE	104 inches	WATER TANK CAPACITY	17 gallons
FRONT TIRES	34x4 inches	MINIMUM CLEARANCE	10½ inches
REAR TIRES	34x4 inches		

ALL PRICES HEREIN QUOTED ARE F. O. B. CLEVELAND

Prices do not include Acetylene Lamps, Top, or other extra equipment

WARRANTY

ALL the parts of the WHITE Steam Car, Models "K" and "L," are warranted by the seller against defects in workmanship, or material, for the season of 1908, ending December 31, 1908, as follows:

Upon the return to that office of THE WHITE COMPANY from which the car was purchased (the said offices being as follows: The Home Office, at Cleveland, Ohio, and the branch offices at New York, Chicago, San Francisco, London, Boston, Philadelphia, and Cleveland) of any broken or defective part within said period, transportation prepaid, the same will be repaired or a corresponding new part will be supplied free of charge, f. o. b., said office, if, upon inspection, the failure of said part is shown to be due to defect in material or workmanship, and not due to abnormal use, misuse, neglect, or accident; but we assume no responsibility for any labor or damage of any kind except as above provided.

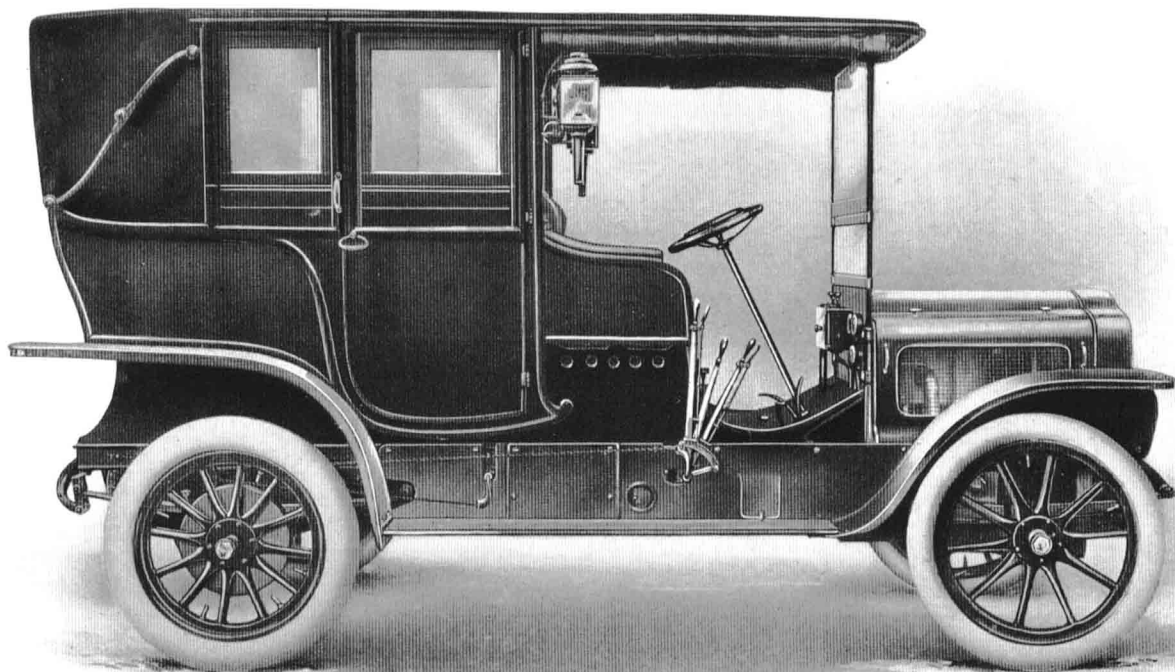
We make no warranty whatever with respect to tires, rims, gauges, lamps, and other equipment not manufactured by us.

The condition of this warranty is such that if the motor vehicle to which it applies is altered or repaired outside of our factory, offices, or distributing points, our liability under this warranty shall cease.

The purchaser understands and agrees that no warranty of any kind, of WHITE Steam Cars, is made or authorized to be made by THE WHITE COMPANY other than that hereinabove set forth.

THE WHITE COMPANY

MODEL "K" WHITE LANDAULET



WHEEL-BASE, 116 INCHES

30 HORSE-POWER

PRICE, \$4,600

TOURING BUREAU OF THE WHITE COMPANY

OWING to the fact that there are more WHITE cars in use than of any other make and also to the fact that all WHITE owners are distinguished for their ceaseless touring activities, this company maintains a Touring Bureau for the collection and distribution of touring data. An important phase of the work of this bureau is the issuing of the WHITE Route Books, which give detailed road directions for important touring routes. The WHITE Route Books are conceded by all to be the best of their kind ever issued. Five numbers of the WHITE Route Book have been issued covering the following routes:

- | | |
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| No. 1—New York to the Berkshire Hills via Poughkeepsie and return by way of Hudson, Kingston, Newburgh and Poughkeepsie. | No. 3—New York to Boston and Boston to New York. |
| No. 2—New York to Norfolk, Va., including the route to and from Philadelphia, Gettysburg, Harrisburg, Hagerstown, Winchester, etc. | No. 4—Philadelphia to Cape Charles and Baltimore to Halltown. |
| | No. 5—Buffalo to Albany, Albany to Buffalo, New York to Albany, Albany to New York, and Albany to Quebec. |

Copies of these route books will be furnished, without charge, on application to any of the branches or agencies of this company, or to the Touring Bureau of THE WHITE COMPANY, 1402 Broadway, New York.

1908