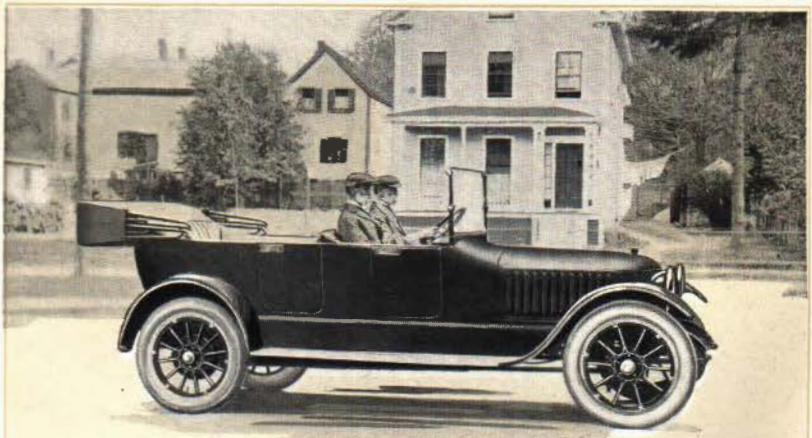
The Magic of Steam

STANLEY
MOTOR CARRIAGE
COMPANY
NEWTON
MASSACHUSETTS

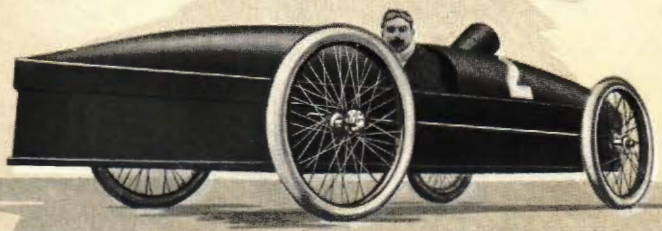
STANLEY STEAM CARS



F. E. and F. O. Stanley, founders of the Stanley Motor Carriage Co., June 5, 1917

F. E. and F. O. Stanley in their first car, June 5, 1897, just twenty years before

F. E. and F. O. Stanley, Oct. 11, 1898, at Charles River Park. One mile in 2.11 — world's record at the time



Fred Marriott in the Stanley "Armadillo," Jan. 26, 1906. One mile in 28⅘ seconds — world's record for six years

STANLEY STEAM CARS

"THAT'S the way I've always wanted to drive a car!"

He was on the right-hand folding seat in the tonneau of a seven-passenger Stanley, leaning forward and talking to the owner who was driving.

The owner was half turned toward the rear. He was giving little attention to the road, and although they were starting up a four per cent grade at five miles an hour, he was giving no thought to the car, nor was he causing the slightest discomfort to his guests. His mind and theirs were entirely free for conversation.

An internal-explosive car came up behind, rushing the hill, and as it came abreast it shifted gears. Without looking around, without taking his mind off the conversation, without touching a gear-shift lever or pedaling a clutch, he accelerated up to twenty-five miles an hour, leaving the other car far behind.

"That's the way I've always wanted to drive a car!" exclaimed the man on the folding seat. "I began driving cars in 1899 and I've driven the best of them,—American cars, English cars, French cars and Italian cars. And I gave up driving my cars myself two years ago because I couldn't drive them that way. Why, I've always been brought up to believe that it couldn't be done. But here you start up a hill at five miles an hour without any noise or vibration, then you simply wish it to go faster, and it does — and all you do is to push that little finger lever a couple of inches. That's power at low speeds. I wouldn't be afraid to drive this car down Fifth Avenue or on Rush Street Bridge, up in the mountains or anywhere on earth. I think I'll buy one myself!"

These Stanley Cars Are Unconventional — So Is Their Performance

TO drive a car in the way that you have always wanted to drive a car, with stored power built up in advance; with instant application of that stored power to the rear wheels by merely moving a finger lever; with no such things as gear-shift, clutch, flywheel or accelerator pedal, is an unconventional performance and a vastly superior one — the performance, indeed, that you have always wanted and have been taught to believe could never be attained even with eight or twelve cylinders.

In that sense the Stanley cars are unconventional — but in that sense only.

STANLEY STEAM CARS

The Simplest, the Safest, the Least Mysterious

AS a matter of fact, its power plant is the most conventional, the oldest, the most highly standardized, the most efficient, the simplest, the safest and the least mysterious that science has ever devised for driving a road vehicle.

We guarantee to deliver you what every manufacturer would like to deliver, and is trying honestly to deliver, but never has been, and never will be, able to deliver with the internal-explosive engine—a performance that goes with steam power and steam power alone.

We guarantee not only that the Stanley has no carburetor troubles, but that it has no carburetor.

Not merely that it has no clutch troubles, but that it has no clutch.

Not merely that it has no gear-shift troubles, but that it has no gears to shift.

Not merely that it has no self-starter troubles, but that it has no self-starter; it naturally and actually starts itself with its own power, without the necessity of a separate power plant.

Neither has it any substitute devices to perform the functions of these—there are no such functions to perform. The functions themselves are simply not a part of the Stanley and could not conceivably be a part of the Stanley.

You Would Like to Drive One Yourself

ANY manufacturer of internal-explosive cars would like to build a car without these complicated and intricate devices, just as he would like to drive one himself—but it simply cannot be done with the internal-explosive engine.

How ironical it is that those very complications—those extraneous devices which manufacturers, at the behest of their customers, would so gladly discard if they knew how—are the very devices which are positively essential to give the internal-explosive car even so good a performance as it has.

It shows what persistent inventive genius can do in adapting a machine to a use for which it is absolutely unfitted.

The Stanley car has no such devices, and needs none, for its power is complete in itself.

A Power Plant Standardized a Hundred Years Ago

HERE is a power plant for land vehicles standardized one hundred years ago. George Stephenson laid down the principle in 1820. And the principle he definitely fixed is that of a two-cylinder, simple engine, supplied with steam by a fire-tube boiler.

Since Stephenson's time, poppet-valve engines have been tried; compound engines, multiple-cylinder engines and rotary engines have been tried. All have been found wanting. Flash boilers, semi-flash boilers, water-tube boilers—they, too, have been tried without success. In other words, Stephenson's principle has been definitely fixed, not because nothing else has been tried, but because everything else has been tried.

For self-propelled land vehicles, Stephenson's types of steam engine and boiler are to-day the standard for everything save automobiles.

Why not, then, for automobiles as well?

The first automobiles were driven by steam. They burned hard fuel,—first wood and then coal,—and they ran on steel tires. But the automobile as we know it

to-day — a vehicle to transport us on the highways with speed, comfort and safety — awaited two things,— liquid fuel and the pneumatic tire.

It is only twenty-five years since the pneumatic tire was invented, but in that short time the automobile, which would be impossible without it, has revolutionized our social and economic life, and the manufacture of motor cars has become America's third greatest industry.

The automobile was also impossible without liquid fuel. We, to-day, can't conceive of putting up with wood or coal.

Liquid fuel was discovered in 1859. Among the first experimenters with it, one discovered that it had explosive as well as inflammable qualities.

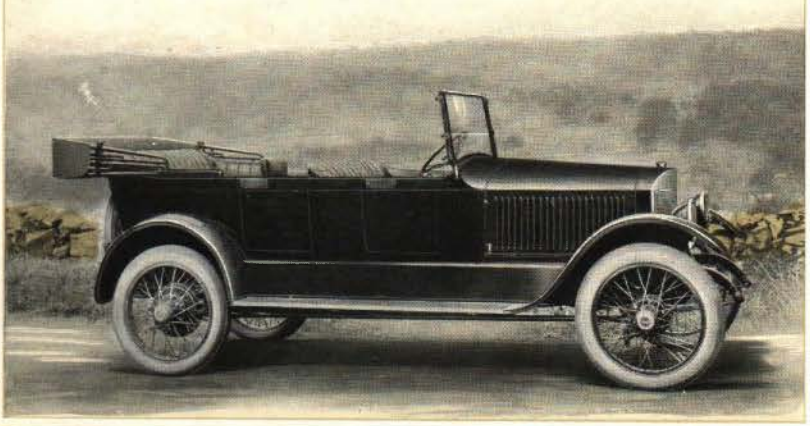
Another soon conceived the brilliant and almost revolutionary thought of inducting a drop of liquid fuel into the cylinder of an engine, exploding it there, and allowing the resulting force to drive down the piston.

This was *power direct from fuel!*

"Why burn the fuel under a boiler, transfer the heat to the water to turn it into steam, and then conduct the steam to the cylinder, when the fuel itself could be burned (exploded) directly in the cylinder, and thus dispense with the steam boiler and burner units?"

The thought seemed brilliant and feasible. It caught the fancy of the engineers and the pioneers of the day. For certain purposes, indeed, it had great merit — for stationary engines and such other purposes as required only constant load and constant speed.

But engineers tried to adapt this internal-explosive engine, essentially a constant-speed, constant-load device, to drive the variable-speed, variable-load automobile — by far the most inappropriate use to which it could be put.



It was immediately apparent that a clutch and a change-speed gear had to be interposed between the engine and the rear wheels. But such problems did not deter these courageous pioneers, nor did the more delicate problems of vaporization, carburetion and ignition. Persistent inventive genius, following the engineering fashion which had set in, combatted the difficulties and almost overcame them. Nor did the engineers hesitate long to put in two internal-explosive engines — or four, or six, or eight, or twelve, to drive one automobile.

All these honest and intelligent efforts were for one sole purpose, — to deliver to the public the performance which it demanded and is still demanding, and must have.

But were the efforts genuinely intelligent?

Who Was to Blame for Spreading This Fallacy

ASK any automobile *manufacturer* why he is building internal-explosive cars, and he will tell you, "Because that is what the public demands."

But he is wrong. The public knows nothing about automobile mechanics, except what the manufacturers have taught it. The public is not demanding internal-explosive cars. The public is not demanding any given number of cylinders. Four cylinders were not introduced, nor six, nor eight, nor twelve cylinders, because the public demanded four, or six, or eight, or twelve cylinders. What the public has always demanded and is still demanding is a better performance, less noise, less trouble, less physical effort of operation, less mental anxiety in traffic and dangerous going, with power at low speeds, and safety.

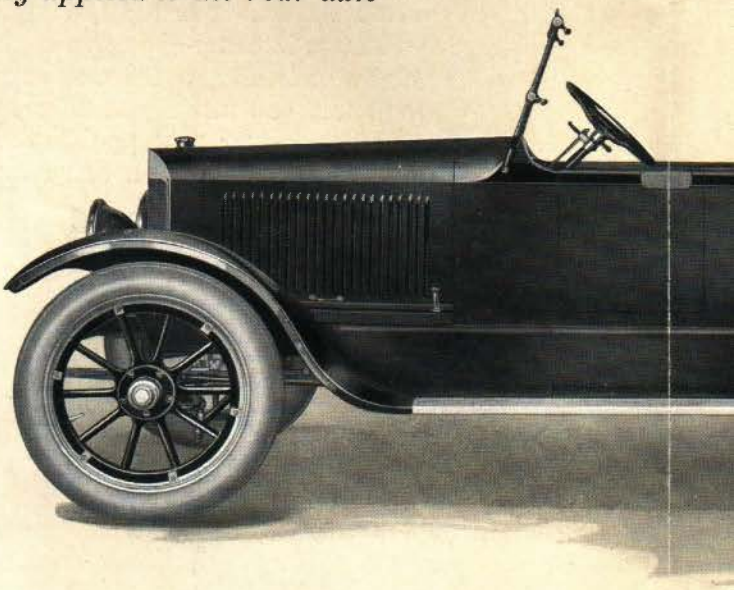
Ask any *motorist* why he bought an internal-explosive car instead of a steam car, and he will tell you, it was because they are better. "They must be better because there are more of them. If steam cars were better, the manufacturers would build steam cars."

So you see the manufacturers blame the fashion on to the public, and the public blames it on to the manufacturers.

Those who are really to blame are the early pioneer automobile engineers — those who began with the beginnings of the explosive liquid fuel. They are the men who are responsible for the fashion. They were carried away with the idea of getting "power direct from fuel." And they lost sight entirely of the fact that their real

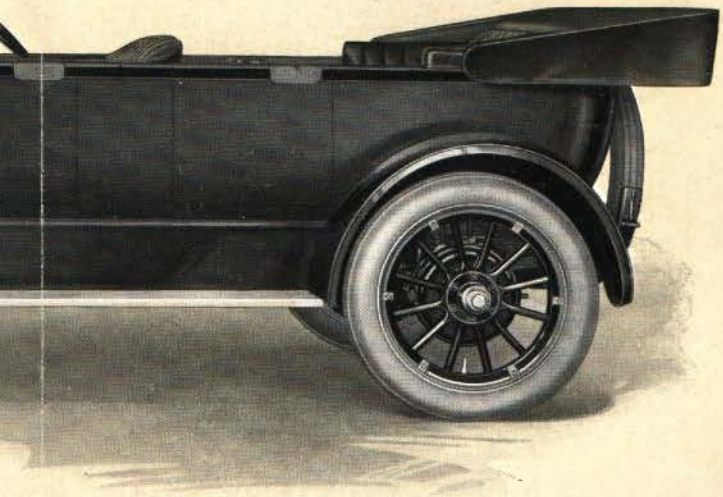
Power—

Correctly generated
Correctly controlled
Correctly applied to the rear axle



The performance of the Stanley is, at all times, equal to the demands made upon it, and the quality of this performance is so satisfying that Stanley owners soon forget they have an engine in the car.

STANLEY STEAM CARS



Seven-Passenger Touring Car ____$2600.00
Four-Passenger Touring Car ____ 2550.00
Chassis_____ 2225.00
(Wire Wheels Extra)

The coach work is in keeping with the car itself—beautiful, substantial. The bodies are hand made, by methods that gave the builders of Stanley bodies a world name for fine equipages, before the day of the automobile.

problem was not merely to get the power from the fuel, but to get the power from the fuel to the driving wheels of the automobile.

Other Industries Have Suffered from Unsound Fashions

THE industrial history of the world records many an earlier example of an "engineering fashion," which carried engineers and the public far down the wrong fork in the road.

The electrical industry once suffered from a similar fundamental error. In the early days the alternating current was the vogue, only to be forced by an "engineering fashion" to give way before the so-called "direct current." Think of it, "direct current"! The very words, like the phrase, "power direct from fuel," cast a spell. Direct current swept the boards. For a decade or more one lone figure, S. Z. DeFerranti of London, championed the alternating current and stood with his back to the wall fighting the world. In 1889 George Westinghouse took up the fight and began a vigorous campaign of exploitation. These two courageous men lived to see the world turn again to the alternating current. The "fashion" for direct current died out and the alternating current succeeded it, not as a mere change in fashion, but because it was fundamentally sound, because it delivered a superior performance.

Persistent but Short-Sighted "Inventive Genius"

THE complications of the internal-explosive automobile, which have been found necessary to give the public even an approach to the performance which it has always demanded — clutch, carburetor, complete electric plant for ignition, another complete electric plant for starting the internal-explosive power plant, gear-shift set, universal joints, flywheel and accelerator — these complications are a splendid testimonial to the "persistent inventive genius" which created them.

The intelligence applied to these problems was of the very highest order, save in one respect. It was short sighted. The engineers conceived their problem to be, not to build a good automobile, but to build a good internal-explosive automobile.

Narrowing a problem usually makes it easier, but in this case it made it harder.

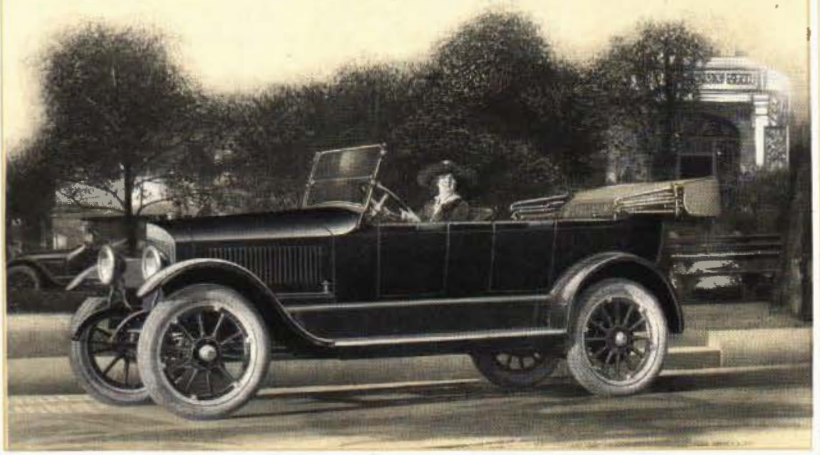
The complications introduced to make the internal-explosive engine deliver its power to the rear wheels

became in time, indeed almost immediately, far greater than those of the steam boiler and burner unit, which, with the best intentions in the world, the pioneers undertook to get around.

It is highly probable, if those early engineers could have seen the latest products of their most brilliant successors, with eight or twelve complete internal-explosive engines; with standardization so remote, even in the number of cylinders, that the oldest manufacturer of cars in America admits that twelve cylinders are necessary for a good performance, and the most successful claims that four are enough; with over three thousand revolutions a minute and the resultant lubrication problems; with the engine removed to the farthest possible point from the driving wheels; with two or even four universal joints; with incredibly delicate vaporizing mechanism; with incredibly accurate manufacturing limits; with even four valves to a cylinder controlled by incredibly accurate timing gears; with the primitive functions of clutch and gear-shift still present,—it is highly probable that those early engineers, if they could have visualized the modern automobile, would have cried to one another, "Hold! We dare not impose so prodigious a tax upon the brains of engineers. We dare not impose so prodigious a mechanism upon the civilization we are striving to benefit."

How Simple the Problem Was, After All!

THEY would have seen, what in fact they failed to see, that boiling water over a kerosene burner, and conducting the steam to a two-cylinder engine geared direct to the rear axle, with only thirty-odd moving parts in the complete vehicle, was, indeed, the simplest possible solution of their problem of getting the power from the liquid fuel to the rear wheels.



But entirely aside from the complications of these later days, entirely aside from the initial and well-nigh prohibitive absurdity of making a fire-box out of the cylinder, the error was fundamental.

There is no stored power in an internal-explosive automobile — there cannot possibly be any. The only place where power can be stored is in the flywheel, and it can be stored there only by speeding up the engine after the emergency calling for the power has arisen.

Only in the steam car with fire-tube boiler, and in the electric car, can power be stored.

The electric car would be ideal, and would probably displace both steam and internal-explosive cars but for its four principal limiting factors — its range is too short; it takes hours to restore its power; it lacks a forty or fifty-mile-an-hour spurt; and the driver is conscious every minute that he has less power than he had a minute ago.

Stored Power Gives You the Performance You Want

IT was the stored power, built up in advance, all ready and waiting for the whim of the driver, which caused that man in the tonneau to exclaim, "That's the way I've always wanted to drive a car!"

It is stored power which is necessary for any self-propelled vehicle, on rail or road, for the performance the public wants and must have.

The locomotive, which is the greatest civilizing force of all time, is still a steam engine. Internal-explosive locomotives have been tried repeatedly, in many forms; but they have been abandoned. It was not that the railroads were not alert for an improvement over the

steam locomotive — it was that the improvement, in spite of all business-like encouragement, was not forthcoming.

The internal-explosive automobile owes its start and its vogue, not to business, but to sport; — not to the keen, "close buyer" of commerce, but to the sportsman who spent, in the aggregate, millions of dollars through the early days and sustained the industry. These sportsmen knew little or nothing about automobile mechanics and, then as now, they took the internal-explosive car on the word of the engineers; and the engineers, then as now, imagined the buyers were demanding that type of car.

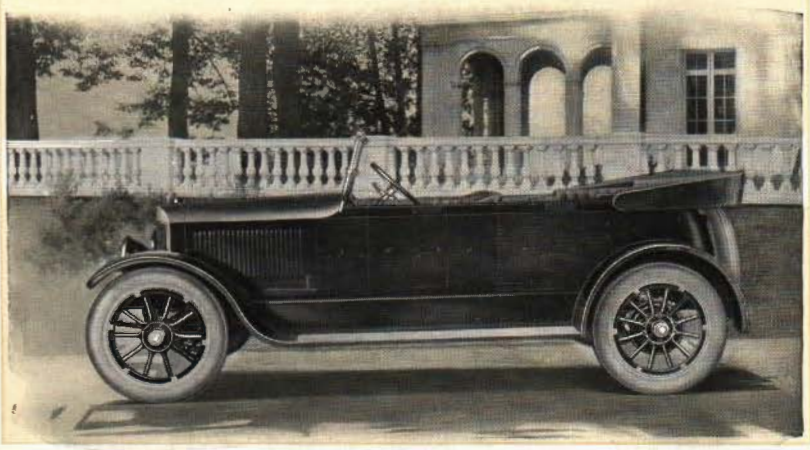
The railroads, on the other hand, were run on a basis of efficiency and cost. They had less time for fashion. Having discovered that the internal-explosive engine was fundamentally unsuited for a variable-load, variable-speed vehicle like a locomotive, that it had no starting effort, that it could not possibly have any stored energy, and no power at low speeds, they gave it up; and Stephenson's principle of the steam engine is now more firmly entrenched than ever before.

Even the internal-explosive railway passenger-car — the unit car, so-called — has proven to be only a magnificent failure.

The modern internal-explosive engine is a marvel of ingenuity. "Persistent, inventive genius" has done wonders in combatting the difficulties which are inherent in it.

But no matter how well the work is done or shall be done, the results the engineers are striving for, the performance the public is demanding and must have, can simply never be attained with this form of power.

It can be attained with electric power, but only with the prohibitive limitations outlined above.



STANLEY STEAM CARS

That Performance Is Stanley Performance

IT can be attained, right now, without any limitations, and is ready at your call — if you will drive a Stanley car.

Like that man in the tonneau, you want a car whose whole range of performance is controlled by a single little finger lever on the steering wheel;

— whose gears are always in mesh, so that you do not have to separate your power from your load almost every time you have to change your car speed — every time, in fact, when you are compelled to do it unexpectedly in dangerous places, on Fifth Avenue, on Rush Street Bridge or in the mountains;

— whose power is built up in advance ready for instantaneous application to the rear wheels at your merest wish;

— whose power does not depend upon the speed of a flywheel, which can be accelerated only after the critical emergency has arisen;

— whose maximum effort can be applied to the wheels under the most adverse conditions, giving power at low speeds, — at one mile an hour if the hill or mud requires it, — without relation to the speed of the engine;

— which has only two cylinders, and a crankshaft only eight inches long, and yet has a hundred per cent torque on the crankshaft continuously, without "impulses" — without even "overlapping impulses";

— whose crankshaft is parallel to the rear axle so that no right angles must be turned by the power;

— whose engine is at the nearest possible point to the driving axle — geared right into it, in fact, so that no universal joints are necessary;

— which has only thirty-seven moving parts in the complete vehicle;

— whose power is not created by turning the engine cylinder into a fire-box, but is generated in a boiler with no moving parts to be exposed to the heat and the gases;

— whose power can be generated without operating the engine, or whose engine can be operated without generating power;

— whose fuel is supplied for consumption without the aid of a carburetor or other outside atomizing or vaporizing device;

— whose boiler is of the fire-tube, water-level type, which is the only kind which permits a storage of power;

— whose burner is equipped with a pilot to maintain the stored power when standing;

— *and whose fuel is kerosene.*

STANLEY STEAM CARS

Specifications

Body. Aluminum; smooth-line, with flush sides. Front seat 44 inches wide; rear 48 inches.

Upholstery. Soft genuine leather, straight grain; filled with curled horsehair. Wide, deep cushions in both front and rear, tilted for comfort.

Top. Improved one-man type, locking to windshield.

Windshield. Special Troy design, ventilating and rain vision; finished in black enamel and nickel.

Color. Regent Green with running gear and fenders black. Valentine's colors and varnishes used exclusively.

Lights. Electric throughout, with Willard Battery and Apple Electric generator. Combined headlights and dimmers with separate bulbs; electric dash and tail lights.

Horn. Klaxon electric under hood; button under driver's left foot.

Steering Gear. Warner, with 18-inch wheel; left side; worm and gear type.

Wheelbase. 130-inch with standard 56-inch tread.

Wheels. 34 x 4 with Firestone light demountable rims. Wire wheels optional at $100.00 extra for set of five in black, colors $110.00.

Tires. Straight groove, black tread, cord, 35 x 4½ straight side.

Springs. Semi-elliptical front; full-elliptical rear.

Frame. Channel section pressed steel.

Front Axle. Complete Timken installation.

Rear Axle. Special Stanley with Timken bearings.

Brakes. On rear wheels with 14-inch drum and 2-inch face. Hand Emergency Brake of expanding type and pedal service brake of contracting type.

Pump. Driven from rear axle at one-quarter engine speed.

Water Tank. 24-gallon capacity, tank hung under frame, giving water mileage of 150 to 250 miles.

Radiator. Standard Mayo, V-shaped, cellular type.

Fuel Tank. Main fuel tank for kerosene at rear; pilot tank and cylinder oil tanks under front seat.

Boiler. Standard Stanley fire-tube type, welded construction; 23-inch diameter.

Burner. Drilled type; can burn kerosene or gasoline or any mixture of the two. Pilot burns gasoline from miniature tank of 4-gallon capacity. Pilot started electrically.

Engine. Two cylinders, 4 x 5, slide valve type; double acting; bolted to rear axle and geared direct into differential ring gear. The entire differential and engine assembly enclosed in a dust-proof, oil-tight housing and running in a bath of oil.

PRICES

7-Passenger Touring Car	$2600.00 F. O. B. Newton
4-Passenger Touring Car	2550.00 F. O. B. Newton
Chassis	2225.00 F. O. B. Newton

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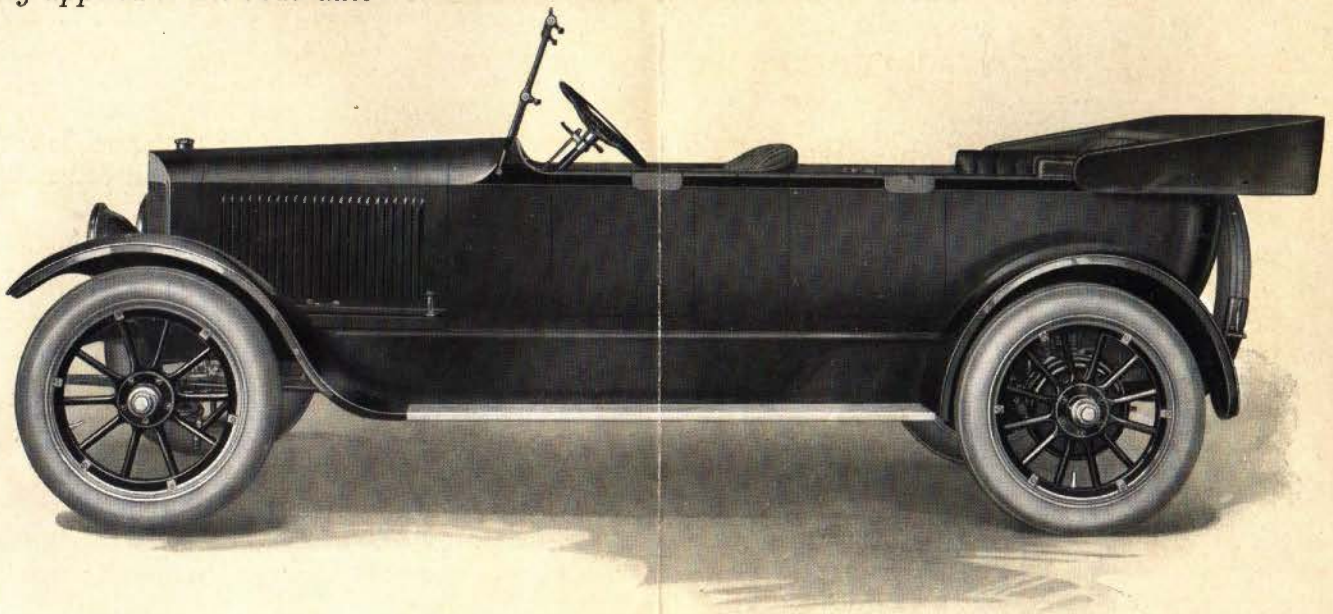
STANLEY STEAM CARS

Power—

Correctly generated
Correctly controlled
Correctly applied to the rear axle



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