
Stanley

Stanley Steam Cars

Announcement
for the Season of

1913

Our Sixteenth Year of
Automobile Manufacturing

Stanley Motor Carriage Company
Newton, Mass.

Model 65, Ten H. P. Four Passenger Car

Price, fully equipped, $1,300 F. O. B. Newton

Our new 10 horse power car for 1913 meets the demand for a car of smart, fashionable lines, roomy and comfortable; of superior finish and equipment; with power enough to take its full complement of passengers anywhere, and at any desirable speed.

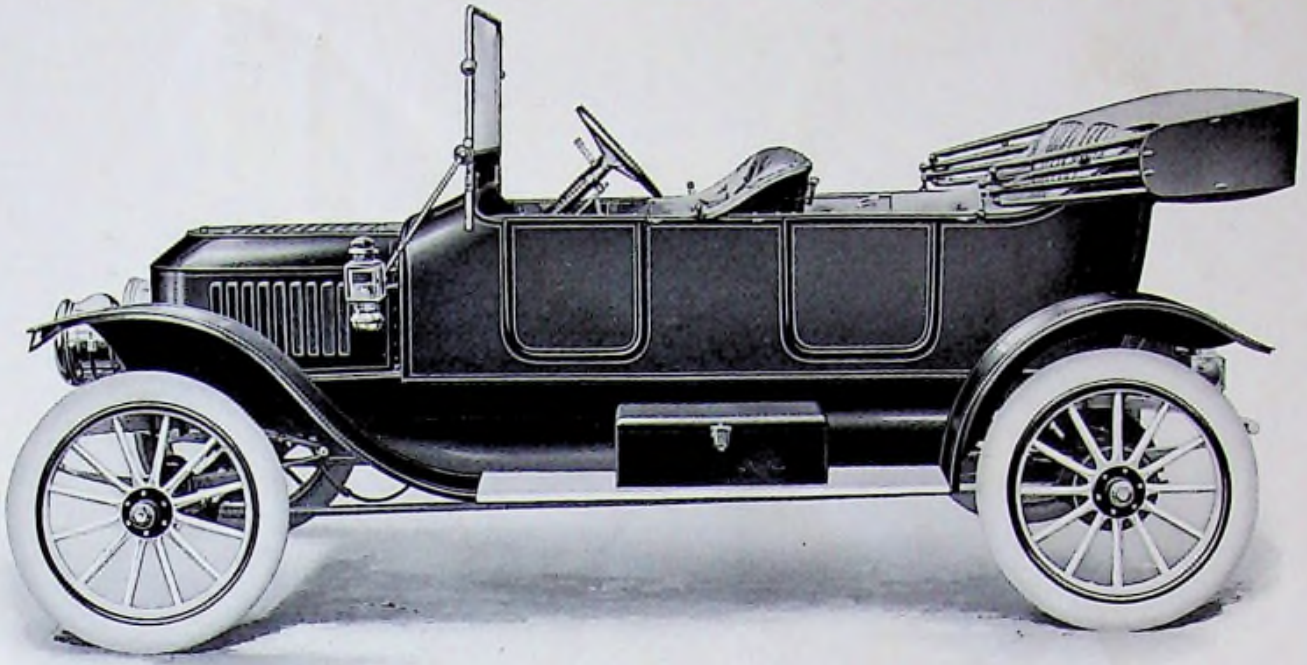
The body is of aluminum, and hand made. In all probability there is not another car in the world at less than twice the price (except our own other models) with such a superior body. The same high quality is evident throughout the equipment and finish. The windshield, lamps, speedometer, horn, top, etc., are not excelled on many cars selling for $2,000 or $2,500.

The body is detachable. The sills or frame are of wood, thus adding to the resiliency or easy riding of the car. The running boards, and also the front foot boards, are covered with gray linoleum, and bound with aluminum. The tonneau floor is covered with a carpet mat. The mudguards and splash curtains are of pressed steel.

The water tank, with outside filler at the rear, holds 40 gallons. The gasolene tank holds 20 gallons.

The equipment includes mohair top, with side and corner curtains and slip cover; Troy one-piece ventilating windshield; Jones 60-mile, 4 inch dial speedometer; "Long" horn; tool-box and tools, including jack, pump, and tire outfit; robe-rail; foot rest; and the lighting outfit consists of electric dash light, combination oil-and-electric side and tail lights, electrically ignited gas headlights with Prest-O-Lite tank in black metal cover, and a Willard 6-80 storage battery in a box.

The tires on the Model 65 are 32x4 on quick-detachable rims, most unusually large for a car of this size. The wheel-base is 112 inches, another unusual feature; both of which, of course, contribute greatly to easy riding.



MODEL 65, TEN HORSE POWER, FOUR PASSENGERS

Price, $1,300 F.O.B. Factory. Equipment includes top; windshield; speedometer; headlights and Prest-O-Lite tank; electric attachment for lighting gas headlights; electric gauge light; combination oil and electric side and tail lights; storage battery; "Long" horn; black-and-nickel finish. Wheel base, 112 inches; tires 32 x 4; quick detachable rims.

Price of Model 65 chassis including everything on the Model 65 except the body, top, windshield, robe rail, foot rest and the electric parts of the lighting outfit; $1,025 F. O. B. Factory.

Model 65 — Continued

The power plant consists of our 18 inch boiler and 3¼ by 4¼ inch engine. The efficiency has been increased appreciably as in all our cars for 1913, by the addition of a feed-water-heater.

The body of the car is ivory black; the running gear is gray; and the finish of the light metal parts is black and nickel.

A Model 65 car, with No. 32 inch wheels, and geared 30 to 56 makes 633 revolutions per mile as to its rear wheels, and 1181 as to its engine. Thus, at 30 miles per hour the engine will make only 590 revolutions per minute.

The price of the Model 65, fully equipped, is $1,300 F.O.B. Newton.

Model 64, Ten H. P. Roadster

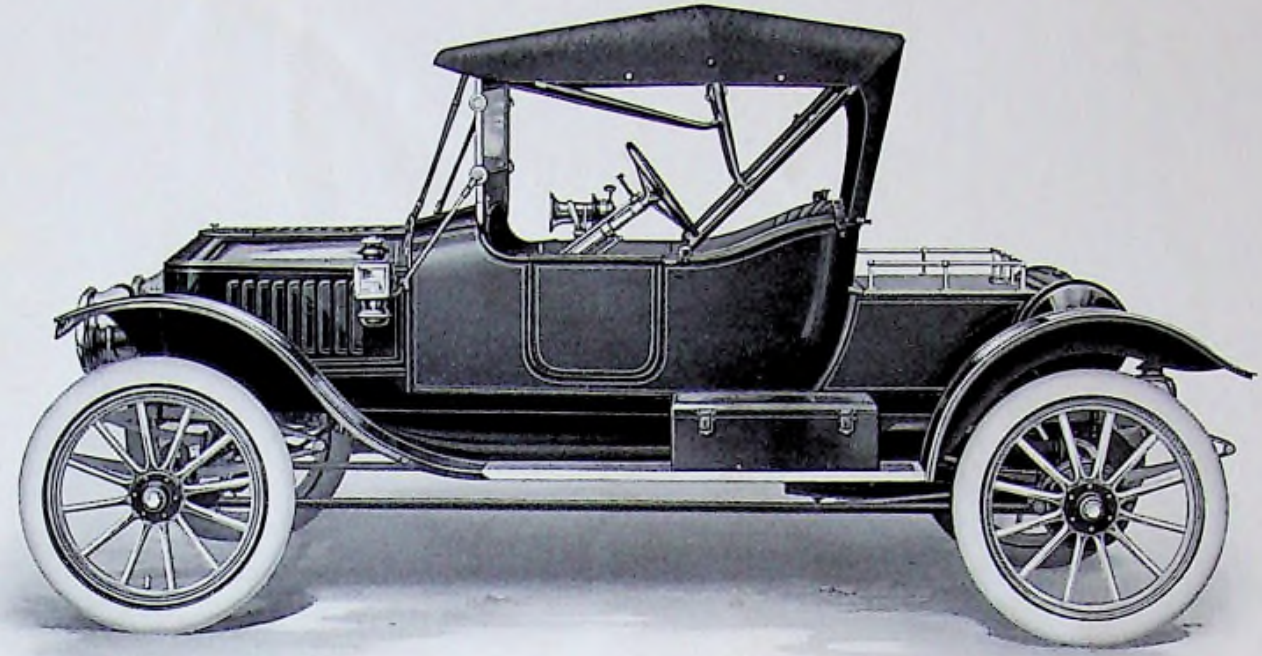
Price, fully equipped, $1,200 F. O. B. Newton

The new Model 64, Roadster, is a strictly two-passenger car. It is built on the lines of our Model 75 of 1911. In general detail it is like the Model 65, but it has 32 x 3½ inch tires on clincher rims. The wheel base is the same, and so is the equipment throughout; except, of course, the top, which is three-bow.

The engine gear in the Model 64 is 40 to 56. The water tank holds 40 gallons, and the gasolene tank holds 20 gallons.

As in the Model 75 of 1912, and the Model 78 of this year, the pump assembly and the cylinder oil tank are located under the seat.

The price of the Model 64, fully equipped, is $1,200 F. O. B. Newton.



MODEL 64, TEN HORSE POWER ROADSTER, TWO PASSENGERS

Price, $1,200 F. O. B. Factory. Equipment includes top; windshield; speedometer; headlights and Prest-O-Lite tank; electric attachment for lighting gas headlights; electric guage light; combination oil and electric side and tail lights; storage battery; "Long" horn; black-and-nickel finish.

Wheel base, 110 inches; tires 32 x 3½

Model 76, Twenty H. P. Car
Five Passengers

Price, fully equipped, $1,700 F. O. B. Newton

Our Model 76 is a five passenger touring car with our 20 horse-power plant. This plant consists of a 23 inch boiler and a 4 x 5 engine. The feed water heater added to our 1913 cars increases the efficiency of this power plant considerably.

The Model 76, as well as the Model 77 four-passenger car, is built with detachable body.

The sills, or frame, are of wood. The body, as in all our pleasure cars, is of the flush side or torpedo type, and made of aluminum. Our bodies are not pressed, but are hand made, of the same materials, by the same workmen, and in the same factory that makes bodies for some of the best $5000 and $6000 cars in America.

The equipment is of the same high quality that characterizes all our cars. It includes mohair top with side and corner curtains and slip cover; Troy one piece ventilating windshield; Jones 60-mile, 4-inch dial speedometer; "Long" horn; tool box and tools, including jack, pump and tire outfit; robe rail; foot rest; and the lighting outfit consists of electric dashlight, combination oil-and-electric side and tail lights, electrically ignited gas headlights with Prest-O-Lite tank in black metal cover, and a Willard 6-80 storage battery in a box.

The running boards and also the front foot boards are covered with gray linoleum, and bound with aluminum. The tonneau floor is covered with a carpet mat. The mud guards and splash curtains are of pressed steel.

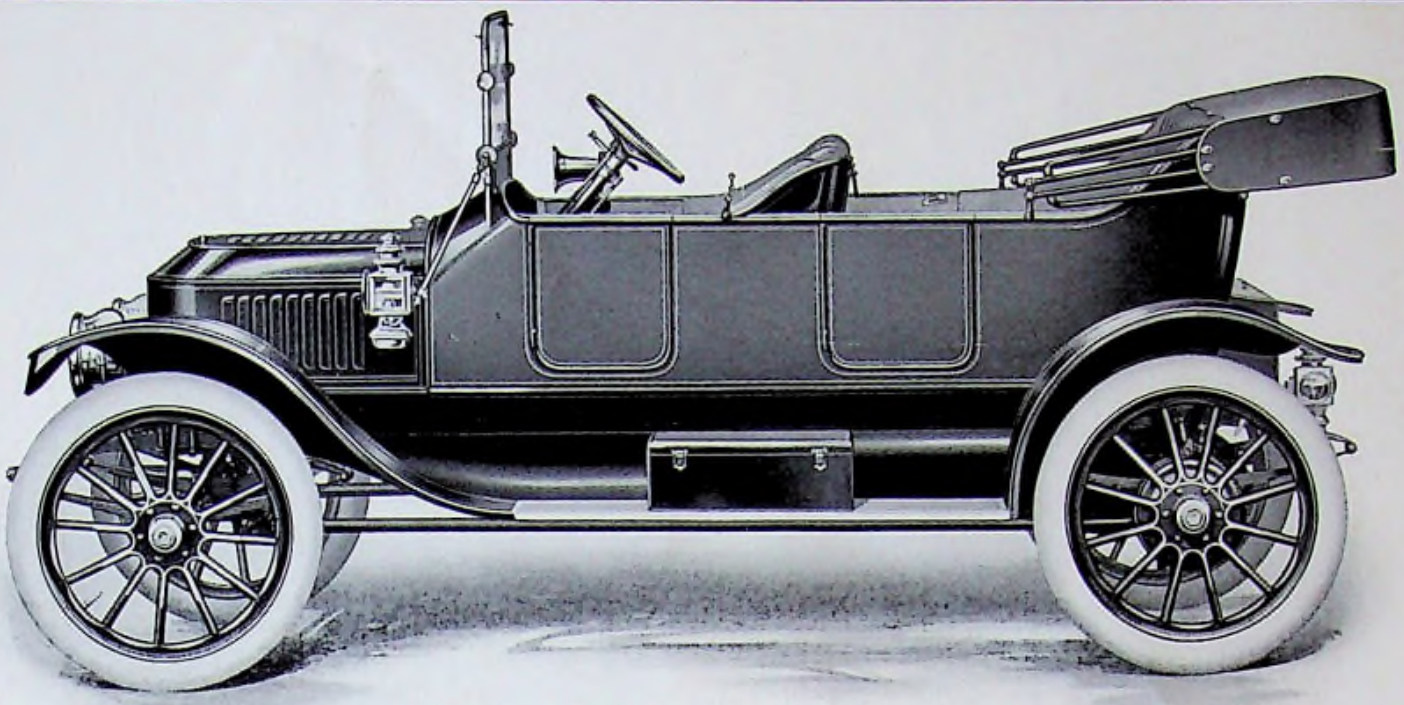
The water tank, with outside filler, is at the rear, and holds 45 gallons. The gasolene tank holds 20 gallons.

The wheel base is 120 inches. The tread is 56 inches. The tires, on quick detachable rims, are 36 x 4,—an unusually large size on cars of this size.

The upholstery is unusually comfortable. The tonneau is large and roomy. All the seats, including the driver's seat, have been designed primarily with a view to comfort.

The Model 76 car, with 36 inch wheels, and geared 40 to 60, makes 560 revolutions per mile as to the wheels, and 840 revolutions per mile as to the engine. Thus at 30 miles per hour, the engine will make only 420 revolutions per minute.

The price of the Model 76, fully equipped, is $1,700 F. O. B. Newton.



MODEL 76, TWENTY HORSE POWER TOURING CAR, FIVE PASSENGERS

Price, $1,700 F.O.B. Factory. Equipment includes top; windshield; speedometer; headlights and Prest-O-Lite tank; electric attachment for lighting gas headlights; electric gauge light; combination oil and electric side and tail lights; storage battery; "Long" horn; black-and-nickel finish. Wheel base, 120 inches; tires 36 x 4; quick detachable rims.

Price of Model 76 chassis including everything on the Model 76 except the body, top, windshield, robe rail, foot rest and the electric parts of the lighting outfit, $1,325 F. O. B. Factory.

Model 78, Twenty H. P. Roadster

Price, fully equipped, $1,640 F. O. B. Newton

Our Model 78, with hand-made aluminum body, is intended for those who want a strictly two passenger car with a little extra speed. The 20 horse-power plant is used, as in the Model 76 and Model 77.

The wheel base is 120 inches. The steering position is exceedingly comfortable, and since the seats are just midway between the axles, the car is particularly easy riding.

The water tank holds 42 gallons; and the gasolene tank holds 20 gallons. The tires are 36 x 4 on quick detachable rims.

The Model 78 is geared 51 to 57. This makes it considerably faster than the other 20 horse-power models.

The equipment is just the same as the 76 and 77, with the exception, of course, of the top, which is three-bow.

The price of the Model 78, fully equipped, is $1,640 F. O. B. Newton.

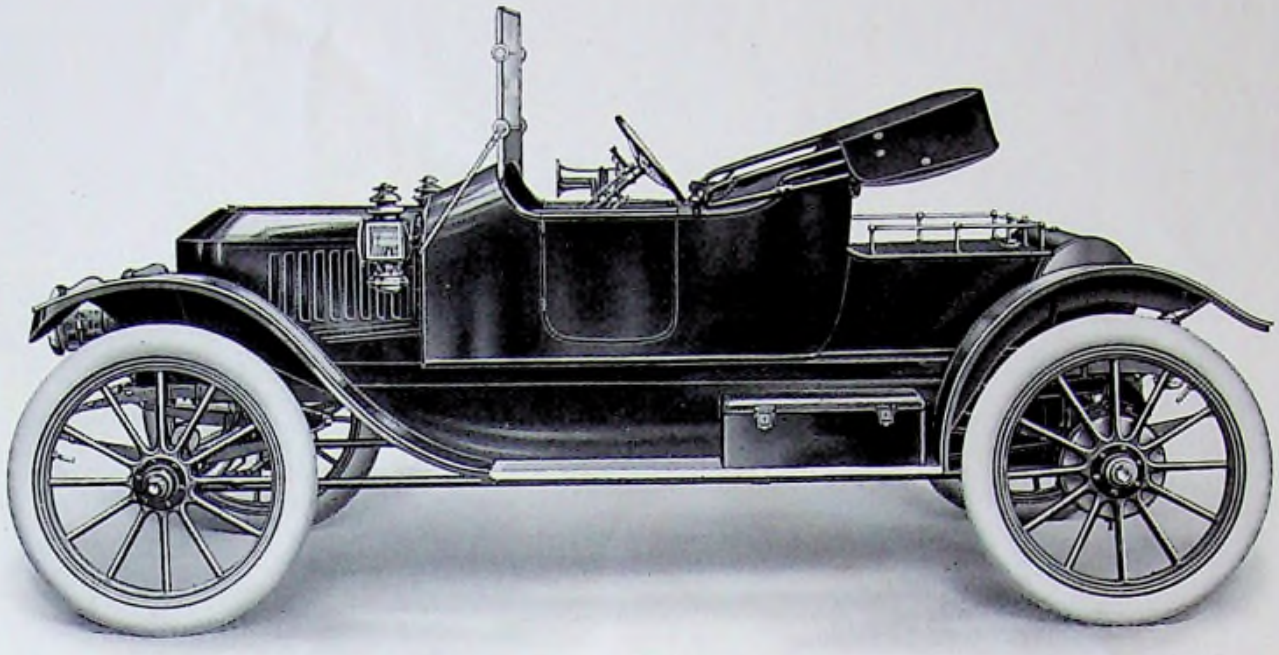
Model 77, Twenty H. P. Touring Car Four Passengers

Price, fully equipped, $1,700 F. O. B. Newton

This car is of our 20 horse-power, and is built on the same chassis as the Model 76 five passenger touring car; and is the same in every particular except as to the body; and the body is the same except as to the width of the rear seat, which in the Model 77 is narrowed to a capacity for two passengers instead of three.

The Model 77 has 120 inch wheel base, 36 x 4 inch tires on quick detachable rims, and the equipment is just the same as in the Model 76.

The price of the Model 77, fully equipped, is $1,700 F. O. B. Newton.



MODEL 78, TWENTY HORSE POWER ROADSTER, TWO PASSENGERS

Price, $1,640 F. O. B. Factory. Equipment includes top; windshield; speedometer; headlights and Prest-O-Lite tank; electric attachment for lighting gas headlights; electric gauge light; combination oil and electric side and tail lights; storage battery; "Long" horn; black-and-nickel finish.

Wheel base, 115 inches; tires 36 x 4; quick detachable rims.

Model 809, Thirty H. P. Touring Car Seven Passengers

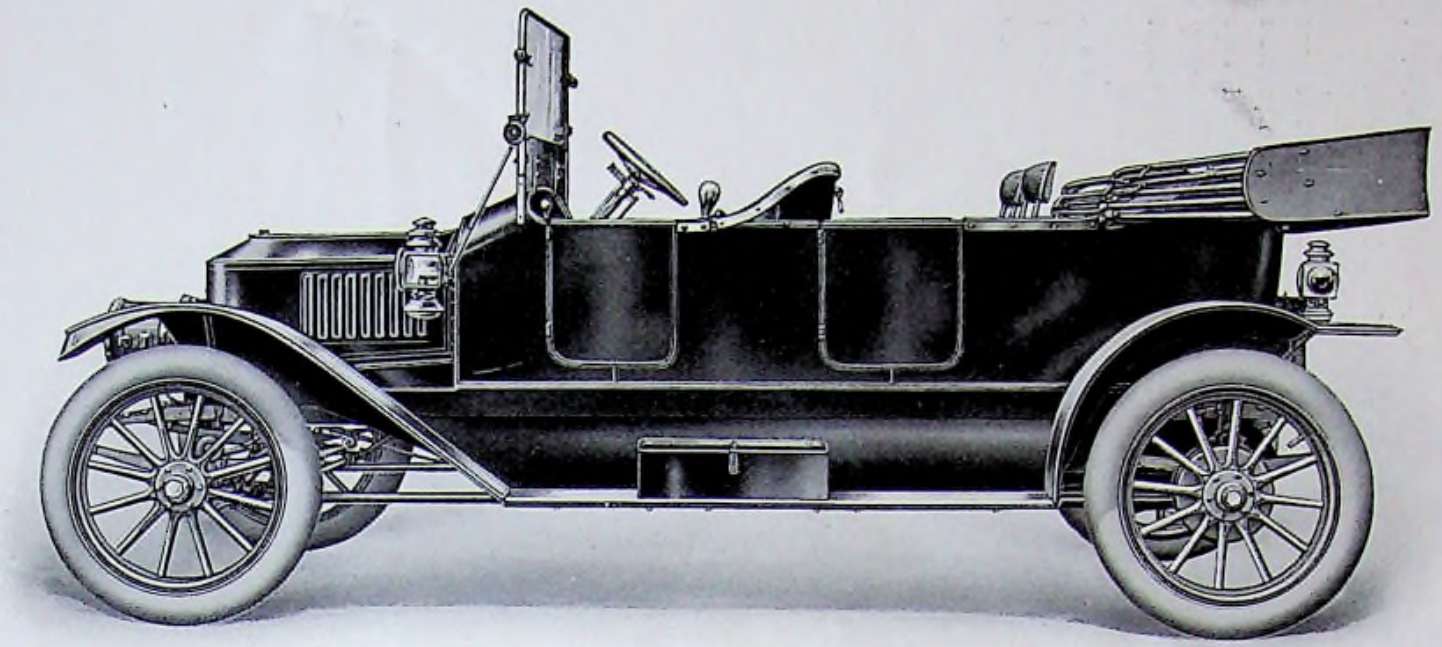
Price, fully equipped, $2,500 F. O. B. Newton

Since the simple Stanley power plant is, part for part, just the same in the large cars as in the small ones, this large, seven-passenger car is as easy to drive as a runabout. Hence, the great pleasure of driving a large car himself is enjoyed by many a Stanley owner, who would not feel competent or comfortable in driving a gasolene car of equal power.

The Model 809, which is quite the same as the Model 87 of last year, is a 30 horse-power, seven-passenger touring car, and is built with a hand-made aluminum body, detachable from the chassis.

The power plant consists of our 26 inch boiler and our 4½ x 6½ inch engine. Our new feed-water heater adds considerable efficiency. The wheel base is 134 inches, and the tires are 36 x 4½ on quick detachable rims.

This 30 horse-power seven-passenger car was first offered last year in response to a steady demand for a large and extremely powerful car. We adapted to this purpose the 30 horse-power plant which we had used so successfully in recent years in our 12 passenger mountain wagon. The service those cars have been put to in mountain resort work in many parts of the country proved the power plant to be most remarkably sturdy and efficient. Adapting it to ordinary touring meant that it would not be driven to anywhere near its capacity, and therefore, that it would have almost unlimited serviceability. The success of that Model 87 of last year, which was practically the same as this year's Model 809, and which was the most satisfactory car we ever built, has proven the judgment of ourselves, as well as those customers of ours in response to whose demand the car was first built.



MODEL 809, THIRTY HORSE POWER TOURING CAR, SEVEN PASSENGERS

Price, $2,500 F. O. B. Factory. Equipment includes five-bow top; windshield; speedometer; headlights and Prest-O-Lite tank; electric attachment for lighting gas headlights; electric gauge light; combination oil and electric side and tail lights; storage battery; "Long" horn; black-and-nickel finish. Wheel base, 134 inches; tires 36 x 4½; quick detachable rims. Price of Model 809 chassis including everything on the Model 809 except the body, top, windshield, robe rail, foot rest and the electric parts of the lighting outfit, $2,050 F. O. B. Factory.

Model 809 — Continued

The car has the same high degree of finish, and the same excellence of equipment as our other cars. The equipment includes five bow mohair top, with side and corner curtains and slip cover; Troy one-piece ventilating windshield; Jones 60-mile maximum hand 4 inch dial speedometer; "Long" horn; tool box and tools, including jack, pump, and tire outfit; robe rail; foot rest; and the lighting outfit consists of electric dash light, combination oil-and-electric side and tail lights, electrically ignited gas headlights with Prest-O-Lite tank in black metal cover, and a Willard 6-80 storage battery in a box.

The color of the body is ivory black, and of the running gear, gray. The car presents a most distinguished and fashionable appearance.

The price, including equipment, is $2,500 F. O. B. Newton.

Model 810, Thirty H. P. Express Wagon 2500 pounds capacity

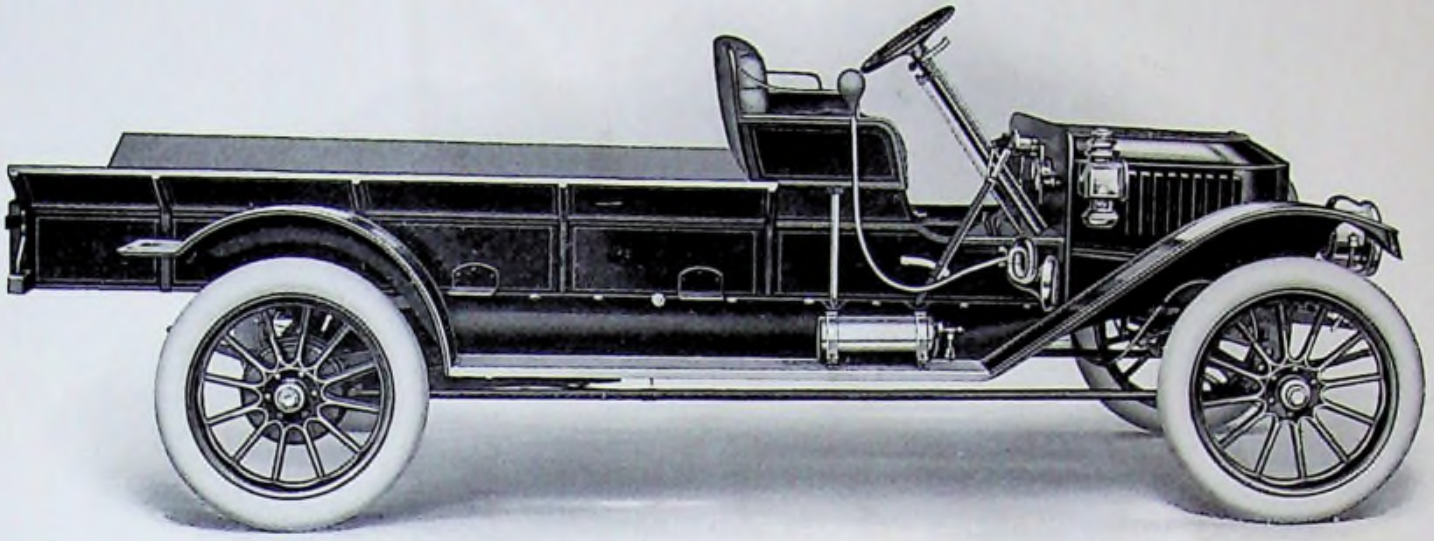
Price, equipped, $2,100 F. O. B. Newton

The Model 810, without the three rear seats and the top, can be recommended highly for an express or delivery wagon, or truck, up to a load of 2500 pounds. The inside body dimensions are about 44 x 104 inches. Detachable side boards are furnished.

This car, running on large pneumatic tires with an extra long wheel base (136 inches) makes an extremely satisfactory car for delivery and express work; and as an emergency wagon. It is also particularly well adapted for market gardeners, who on account of the absence of vibration, can carry their soft produce, such as strawberries, to market without fear of injuring them.

Any kind of an upper body can be built for the car.

We sell the Model 810 Express Wagon at $2,100 which price includes the same equipment as the Mountain Wagon, except the top, the three rear seats and the windshield.



MODEL 810, EXPRESS WAGON. CAPACITY 2500 POUNDS

Price, $2,100 F. O. B. Factory. Similar to Model 810 Mountain Wagon, but without three rear seats, top and windshield.

Model 810, Thirty H. P. Mountain Wagon Twelve Passengers

$2,300 with Equipment, F. O. B. Newton

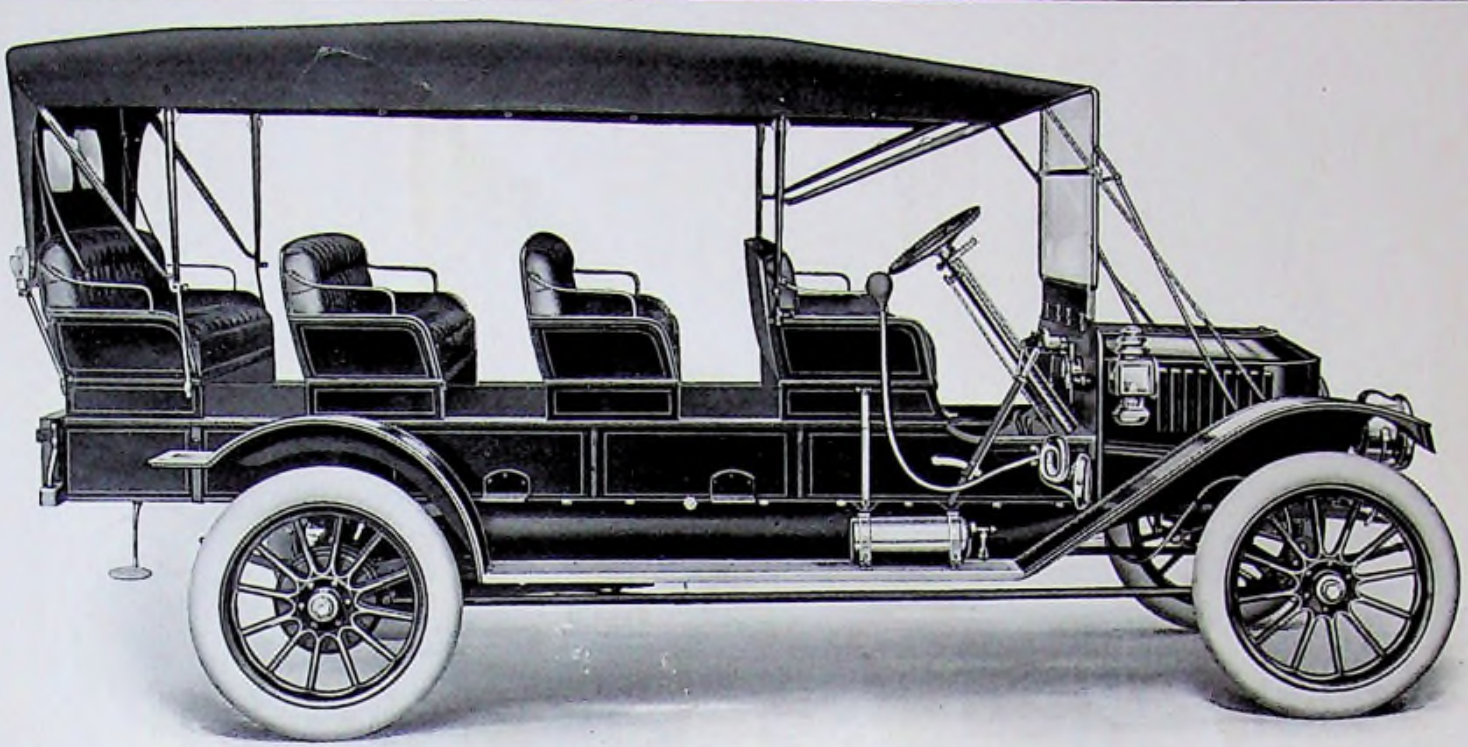
The steady and growing demand for this Mountain wagon, which we have made for several years, compels us to manufacture it this year in larger quantities than ever before. The service rendered has been uniformly successful, especially on hard mountainous roads. These cars have been great money makers for their owners. No other cars have been able to compete with them; first, because their reliability has proven so much greater than gas cars and they don't leave their passengers on the road; second, because the passengers appreciate their easy riding; and third, because the expenses of running them, especially as to tires, are so low as to leave the owner a good margin of profit.

There are four seats, each for three passengers. The wheel base is 136 inches. The tires are 36 x 5, front and rear. The rear seats are removable, thus making a roomy baggage wagon, with inside body dimensions of about 44 x 104. Detachable sideboards are furnished for use in baggage service.

A number of these cars are in service as truck and delivery wagons and they can be recommended highly for this use, up to a load of about 2500 pounds.

The equipment includes the four seats, a folding top, headlights and Prest-O-Lite tank, glass front, speedometer, and oil lamps, horn, etc. We can furnish the electric lighting outfit, as on our pleasure cars, at an extra cost of $75.

The color of the Model 810 is red, both body and running gear. The price of the Model 810, equipped as above, is $2300.



MODEL 810, THIRTY HORSE POWER MOUNTAIN WAGON, TWELVE PASSENGERS

Price, $2,300 F. O. B. Factory. Equipment includes top; windshield; speedometer; headlights and Presto-O-Lite tank; "Long" horn; black-and-nickel finish.

Wheel base, 136 inches; tires 36 x 5, front and rear; quick detachable rims.

Specifications

General. The boiler and burner are in front under the hood, with no moving parts. The pumps, two for water, one for gasolene and one for cylinder oil, are all actuated by three moving parts. The engine has thirteen moving parts, the differential has four and the driving shafts of the rear axle constitute two more. There are also two automatic valves, one controlling the gasolene by-pass, the other controlling the burner, each with one moving part. Thus there are but twenty-four moving parts, exclusive of balls, in the whole Stanley power plant; and none requiring hand lubrication.

Engine. In the ten horse power cars, 3¼ x 4¼. In the twenties, 4 x 5. In the thirties, 4½ x 6½. Roller bearing throughout, including crossheads. Hooking up device as on all recent cars. Stuffing boxes accessible without removing main centre case. The engine is equipped with an oil tight, dust-proof case, the rear members of which are of aluminum. The engine, differential and axle thus run in an oil bath.

Engine Gear Ratio. In the Model 65, the ratio is 30 to 56. In the Model 64, the ratio is 40 to 56. In the Models 76 and 77, the ratio is 40 to 60. In the Model 78 the ratio is 51 to 57. In the Model 809 the ratio is 50 to 70. In the Model 810 the ratio is 40 to 70.

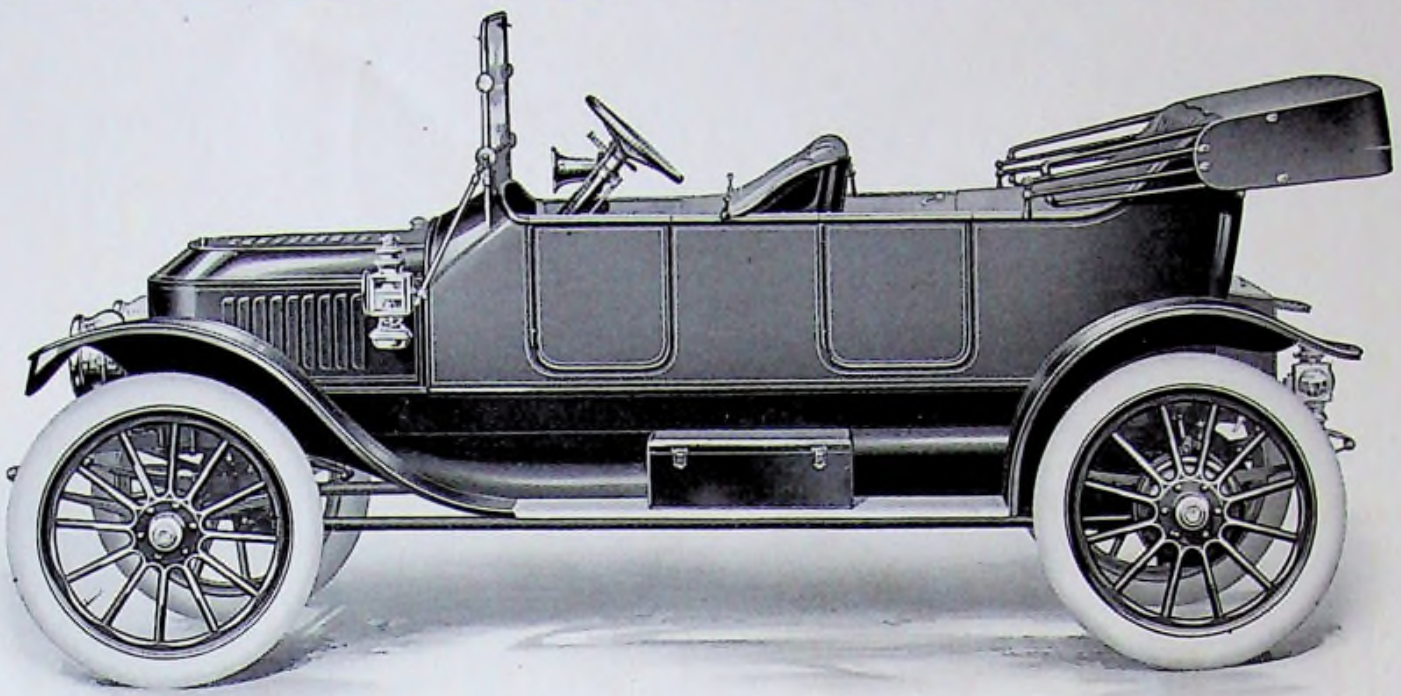
Boiler. 18 inches in diameter, of regular Stanley type; lower head and shell pressed out of one piece of steel; top head welded in by oxy-acetylene process. Superheaters heavy guage steel tubing, heavily nickel plated. Extension water feed, feeding the water to the boiler below the water level.

Burner. 18 inches in diameter, regular Stanley type.

Feed Water Heater. A feed water heater suspended from the sill, and enclosed in the flue, is heated by the exhaust steam; and adds appreciably to the efficiency of the power plant. This also acts as a muffler.

Low Water Automatic. All our cars are equipped with a low water automatic gasolene shut-off, which automatically shuts off the main burner, when the water in the boiler gets as low as a point about two inches above the fusible plug level. This warns the driver that his water is getting low, and saves blowing a fusible plug.

Pumps. All four pumps are driven direct, without links or rachets and all four are actuated by but three moving parts.



MODEL 77, TWENTY HORSE POWER TOURING CAR, FOUR PASSENGERS

Price, $1,700 F.O.B. Factory. Equipment includes top; windshield; speedometer; headlights and Prest-O-Lite tank; electric attachment for lighting gas headlights; electric gauge light; combination oil and electric side and tail lights; storage battery; "Long" horn; black-and-nickel finish.

Wheel base, 120 inches; tires 36 x 4; quick detachable rims.

Specifications — Continued.

Axles. All our axles are built of heavy straight round tubing, and all are skillfully re-enforced with continuous trusses. All the front wheel bearings and all the inside rear axle bearings are Timken roller bearings. The outside rear axle bearings are also roller bearings.

Differential. Simple bevel gear type, with six pitch spur driving gear.

Brakes. Two sets on hubs — internal expanding, and external contracting. Multibestos lined. Foot lever for the controlling brake, band lever for the emergency brake.

Steering Gear. Of the pinion and sector type. Adjustable steel pinion at the end of the steering post meshed into steel sector gear. Adjustable cone bearings in front wheel spindles. Oil cups on all other steering gear bearings including two on the sector gear stud. Front axle forks which carry the front wheel spindle are set at an angle to reduce the effort of steering—a practice always followed in Stanley Cars.

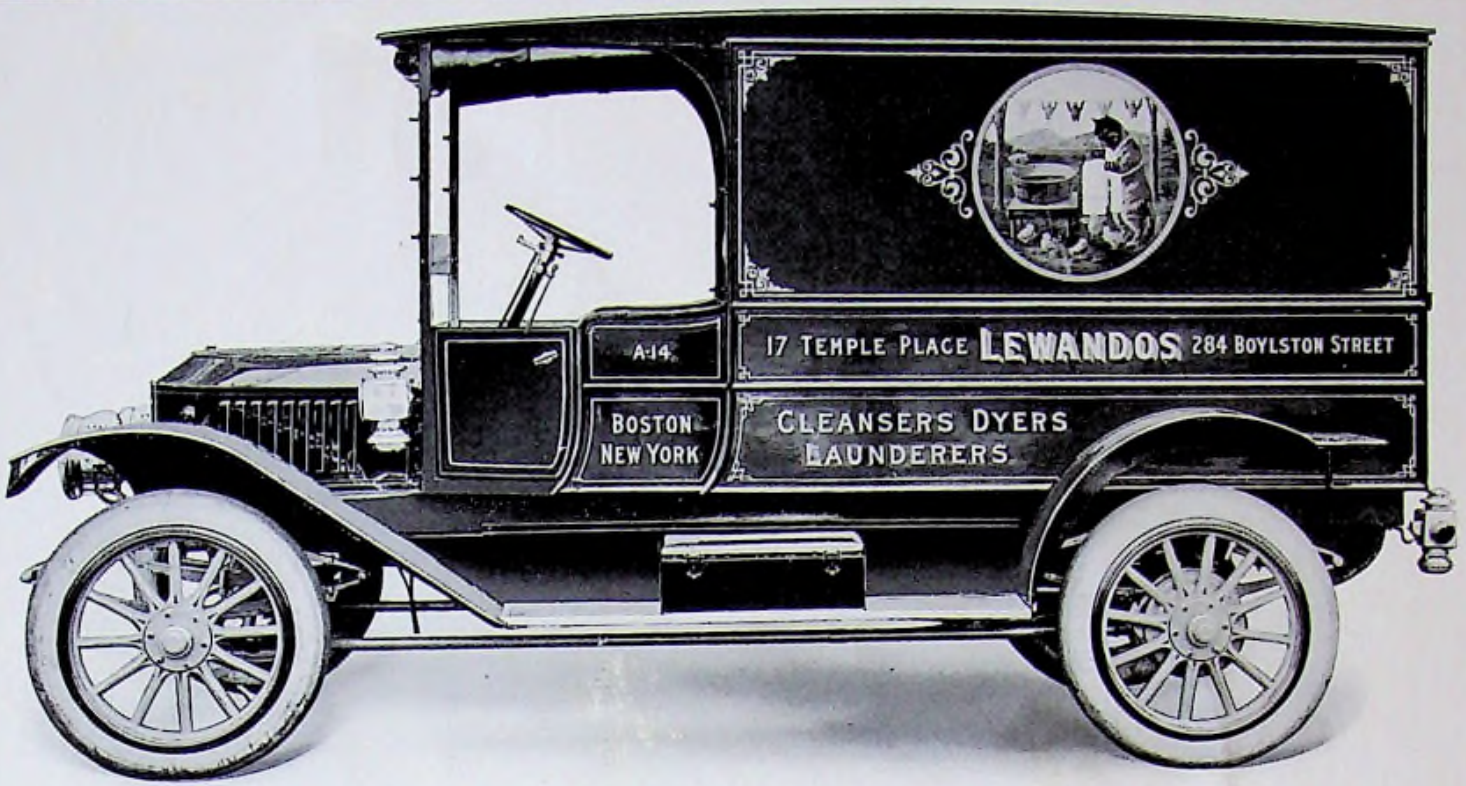
Bodies. All our pleasure car bodies are hand made, and of aluminum. The bodies are ivory black with gray running gears. The Model 810 has a wooden body and is painted red throughout. The sills or frame in all the models are of the finest ash, and in the Models 65, 76, 77 and 809 the bodies are detachable from the chassis.

Lighting Equipment. The lighting equipment on all our pleasure cars includes a Prest-O-Lite tank and black metal cover for same; a Willard 6-80 storage battery in box; gas headlights with electrical ignitors; combination oil-and-electric side and tail lights; electric dash light; and all controlled by a simple switch box located conveniently to the driver's right hand.

Steering Wheel. 16-inch, sub-imposed upon which are the throttle and by-pass levers.

Springs. Full elliptical, front and rear, insuring easiest riding; and more adaptable to all kinds of road conditions than any other type.

Mudguards. Pressed steel mudguards, front and rear, with dropped extension at their outer edge. Front mudguards have integral aprons connected with the body. The rear guards have integral aprons extending 6 inches below the mudguard.



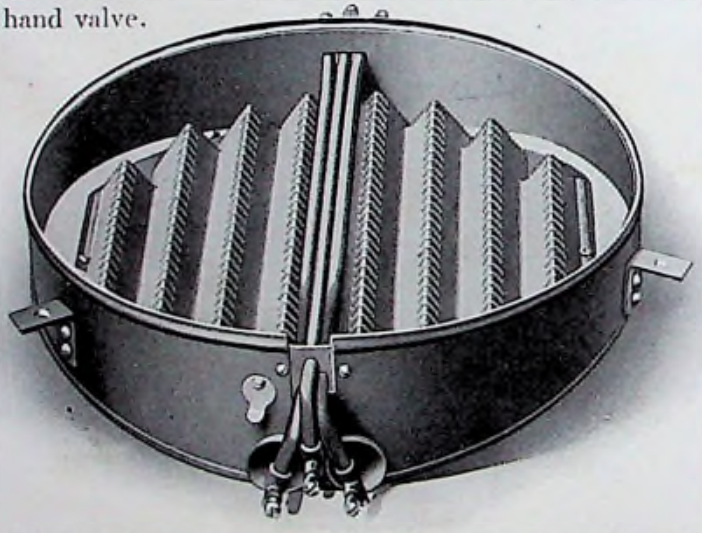
MODEL 79, TWENTY HORSE POWER LIGHT DELIVERY WAGON, CAPACITY 1500 POUNDS

Chassis price, $1,360 F. O. B. Factory. Price for panel body will range from $300 to $600. Equipment includes everything on the Model 78 except body; top; windshield; robe rail; foot rest and the electric parts of the lighting outfit. Wheel base, 126 inches; tires 34 x 4½; quick detachable rims.

Stanley Burner

(*Patented*)

The Stanley burner consists of a corrugated casting, with a series of slots at the apex of each corrugation; the vaporizer; and the mixing tubes. The gasolene becomes thoroughly vaporized in passing through the tubes of the vaporizer, which are exposed to the flame of the burner. It issues at high velocity from the nozzles and passes into the mixing tubes, drawing in with it the amount of air necessary for perfect combustion. It then enters the chamber below the casting and passes up through the slots, where it burns as in a bunsen burner with a clear blue flame. The pilot light acts similarly, but it has a very small independent casting. The pilot light, burning directly under the vaporizer, keeps it hot while the main burner is not burning, and will relight the main burner after it has been shut off by either the automatic or the hand valve.



Stanley burner, showing vaporizer and mixing tubes. A slotted castiron plate, completely encased. In effect a huge bunsen burner, giving perfect combustion.

The burner is so constructed that it secures perfect combustion and intense heat, and is entirely encased, there being no air inlet except the mixing tube; consequently it is not affected by air currents.

The pilot light is not shut off by the automatic, but burns continuously after being lighted until shut off by the hand valve, and is just strong enough to hold the steam pressure. The car can be left standing for several hours with the main burner turned off and still have steam enough to run. In fact, it is common practice to leave the pilot burning over night.

The pressure on the fuel in the pressure tank which supplies this burner is maintained automatically when the car is running, and since there is but little gasolene under pressure, it takes but a short time to pump up the pressure by hand before starting. This makes the system a very safe one, as compared with cars where the entire gasolene supply is under pressure.

Stanley Boiler

The Stanley boiler is of the fire tube type. The lower head is part of the pressed steel shell. The shell is wound with piano wire. The tubes are 33/64 inch diameter. The tubes are expanded into the heads by means of a taper expander. In the

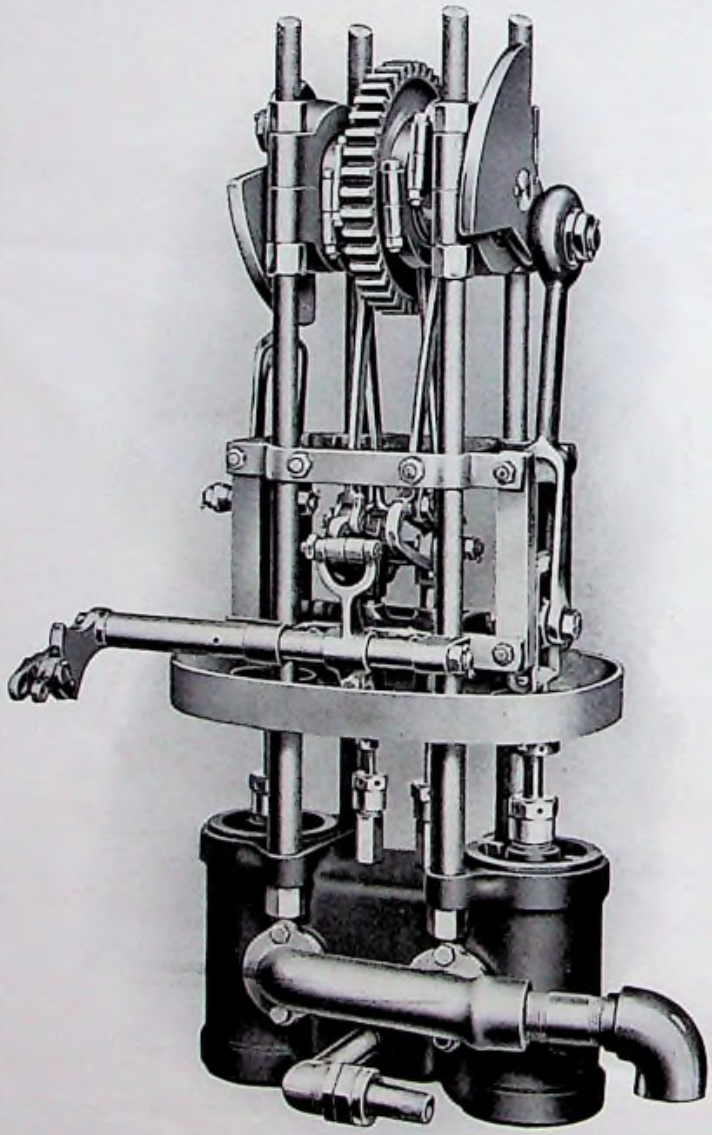
Stanley boiler. The shell and the lower head are of one piece, of pressed steel. The upper head, shell and ring are welded together by the oxy-acetytive process. The tubes are of copper, re-enforced at each end with steel bushings. The bands indicated in the cut are of thin brass, to hold in place the half inch sheet asbestos insulation.

18 inch boilers there are 469 tubes, each 14 inches long, with 66 square feet of heating surface. In the 23 inch boilers there are 751 tubes, each 14 inches long, with 104 square feet of heating surface. In the 26 inch boiler there are 999 tubes, each 16 inches long, with 158 square feet of heating surface.

Stanley Engine

(*Patented*)

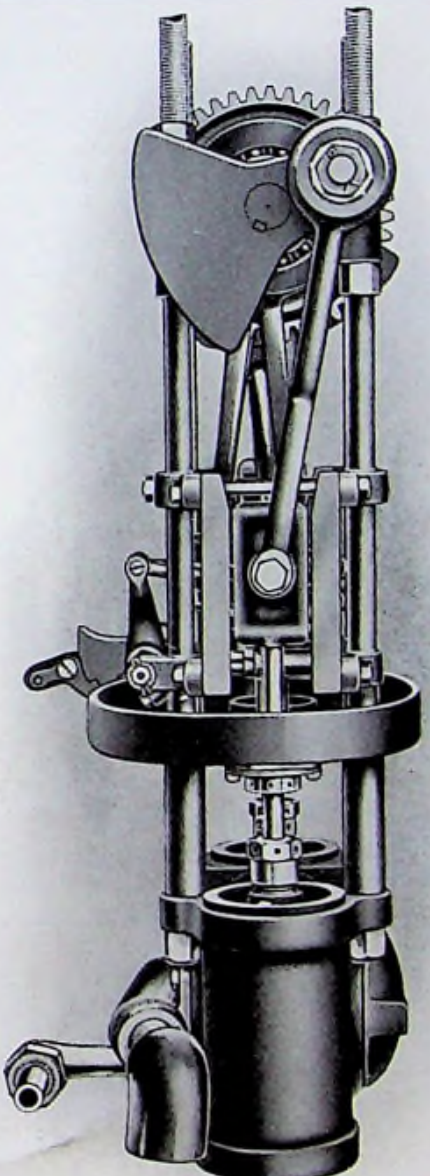
The engine used in the Stanley Steam Car is of our own design and manufacture and is patented. It is two cylinder,



View of Stanley engine, obliquely from above. Showing main bearing; excentrics; link motion; baffle-plate; "hooking-up" device. There are but thirteen moving parts (exclusive of rollers) in the Stanley engine.

double-acting, of the locomotive type, with plain slide valves and link motion reverse.

This engine is more completely a roller-bearing engine than any other engine in use in an automobile. Even the crossheads



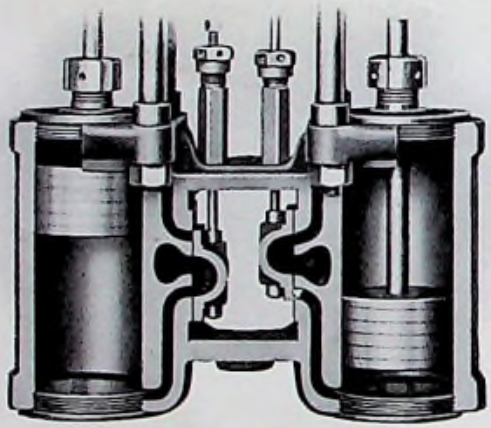
Side view of Stanley engine, showing roller-bearing crosshead, connecting-rod and bearing, with counterbalance; steam chest cover; and exhaust outlet. The Stanley engine is more completely a roller-bearing engine than any other engine used in an automobile.

run on rollers. This particular feature has been in use by us more than twelve years and is one of the greatest improvements ever made

in automobile engines. The use of rollers in the crossheads does away entirely with the loss of power from sliding friction.

The engine is placed horizontally in such a position that the steel gear on the crank shaft of the engine engages the main gear of the differential, thus forming a direct power transmission. The front end of the engine is suspended from the body of the car, and partakes of its up and down motion. The rear end of the engine is connected radially to the rear axle, thus keeping the gears always perfectly adjusted.

The Stanley engine consists of only thirteen moving parts exclusive of rollers. Being of the double acting type, each piston gets an impulse at each end of the cylinder. Thus this two-



View of part of Stanley engine with cylinders cut away, to show piston and valve motion. The Stanley engine is a simple engine, double acting (four impulses to the revolution), with slide valves and link motion reverse.

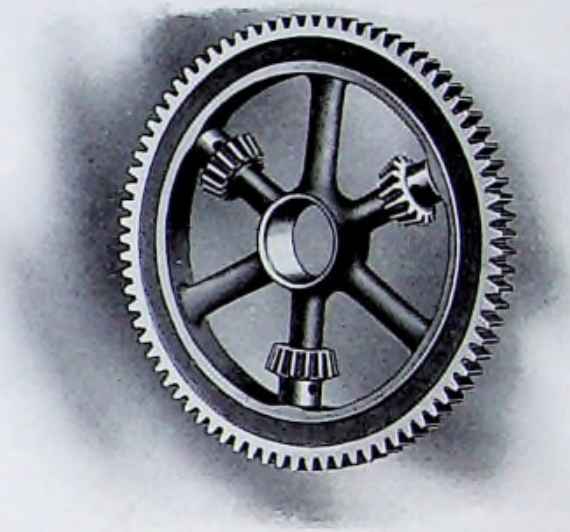
cylinder engine, with only thirteen moving parts, gets as many impulses per revolution as the conventional gasolene engine would get if it had eight cylinders. As a result of this condition, the Stanley engine makes fewer revolutions per mile and, therefore, fewer per minute at a given speed. For instance, a Model 76 car, with 36 inch rear wheels and geared 40 to 60 makes 560 revolutions per mile as to its rear wheels and 840 revolutions per mile as to its engine. Thus, at 30 miles an hour the engine will make only 420 revolutions per minute.

The engine, driving gear and differential are enclosed in an oil-tight and dust-proof case and run in an oil bath.

Cylinder Lubrication

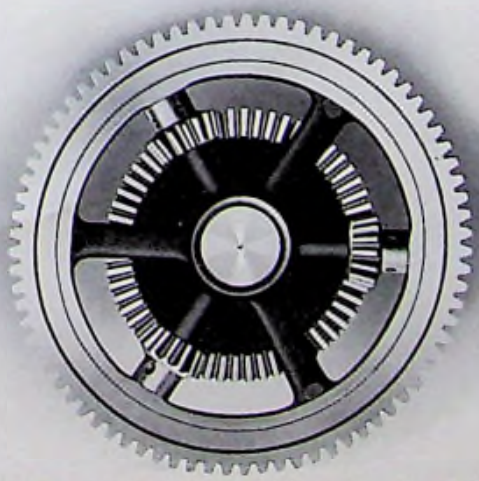
All our cars are equipped with a mechanical cylinder oiler which delivers a definite quantity of oil to the steam chest each mile the vehicle is run. Just as much oil goes in the last mile of the run as the first. This mechanism is very simple and reliable. A sight-feed device on the dashboard shows whether or not the pump is pumping oil.

Stanley Differential



Stanley driving gear, which meshes into the main gear on the main bearing of the engine, while the bevel pinions mesh into the bevel gears on the driving shafts. The only "transmission" in the Stanley car. Only four moving parts.

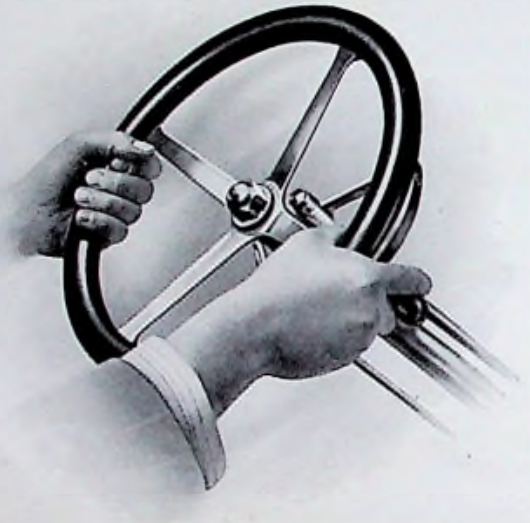
The Stanley differential consists of a spur gear and three bevel pinions, thus making only four moving parts. The spur gear meshes directly with the main gears of the engine; and the pinions mesh with the bevel gear affixed to the inner ends of the driving shafts of the rear axle, on the outer ends of which are a round taper and a square section on to which are forced the rear wheels. This is in fact a bevel gear differential, and is what has always been used on Stanley cars. It constitutes the most direct delivery of power from engine to rear wheels of any automobile in the world; and this differential is all the "transmission" there is in a Stanley car.



Detail showing Stanley differential and driving gear. The main driving gear with its three bevel pinions, and one driving shaft with its bevel gear, are shown.

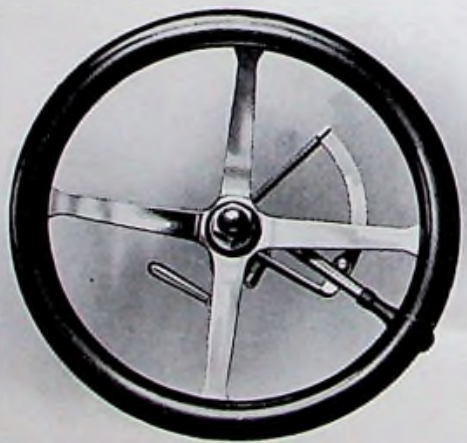
Steering Wheel and "Control"

Aside from brake and reverse pedals, the entire Stanley control is in the throttle, sub-imposed on steering wheel and operated



Steering wheel with hands, showing how the throttle-lever is lightly gripped in the fingers without removing the hand from the wheel.

by the right hand. The illustration shows how easily the driver may manipulate the throttle by the index and middle fingers,



Steering wheel, showing the single throttle in the Stanley system of control locked by its locking screw; and the by-pass lever.

while still retaining his grip on the wheel. There are no other throttles, and no change-speed levers. The speed of the car is

governed entirely by the amount of steam admitted into the engine, and this amount is determined by the position of one throttle. The entire range of the throttle lever is only a few inches, and in an ordinary day's run a play of a couple of inches between extremes is all that is required. Stanley control shows up to its best advantage in the two extremes of automobiling—hard mountainous roads and crowded city streets. No unexpected hill or quagmire can "stall" the motor—and no sudden stop or sudden start in city traffic forces the operator to "change speeds." The whole range of conditions is covered by the simple single throttle.

The reverse pedal is in position under the left foot. The controlling brake pedal is in position under right foot. Ordinarily, these act as foot rests for the operator. The reverse gear may also be used as a brake. All these features make the Stanley control the simplest and the Stanley car the safest on the road.

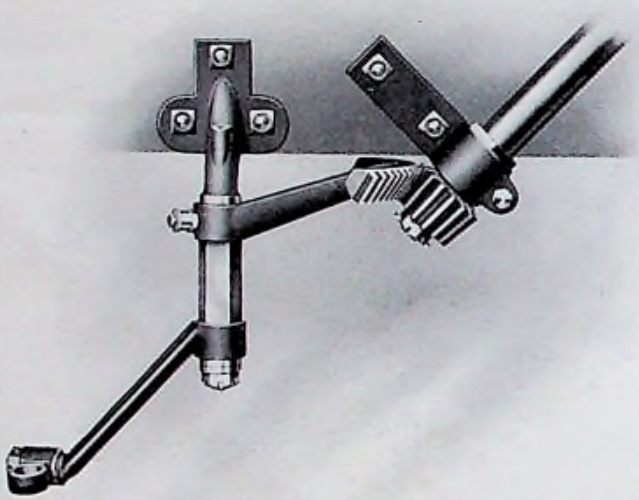
Front spring and spindle construction, showing how the spindle is set at an angle, to assist in easy steering.

Front Axle Forks

The front axle forks which carry the front wheel spindle are set at an angle as shown in the illustration of fork and spring above. The point of contact of the wheel on the ground is back of an imaginary line continuing the angle of the fork to the ground. This is the principle of the front fork of a bicycle, and it gives the same effect in steering. It tends to keep the front wheel in line with the rear wheels, and to make the car go straight ahead. Thus the effort of steering is reduced. This construction is particularly advantageous in muddy and sandy roads.

Steering Gear Mechanism

The Stanley steering gear is of the sector and pinion pattern, and is not of the so-called irreversible type. A pinion at the lower end of the steering post engages the teeth of a sector gear whose bracket is mounted to the frame of the car. The connection between the long arm of the sector gear forging and the spindle levers is completed by only two steering rods.



Detail of pinion, affixed to the end of steering post, and sector gear. The hexagon nut just above steering-post bracket permits of plenty of adjustment. The long arm of sector casting connects with steering rods. (See cut of front axle on page 27).

Thus there are but six moving parts in the Stanley steering mechanism—the pinion and post (forming one built-up part); the sector gear forging, the two rods, and the two spindle levers. The whole steering mechanism is completely protected by the front axle, as shown in the cut on page 30.

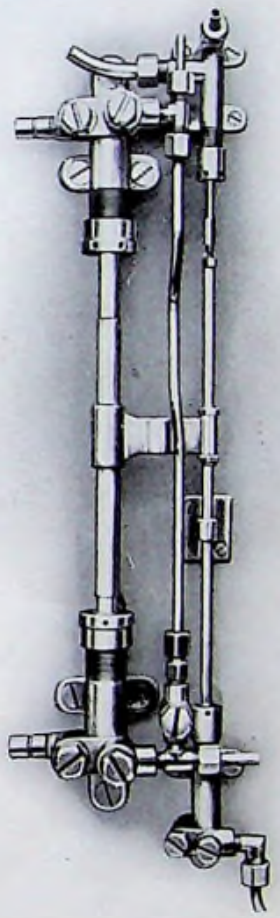
Springs

All Stanley cars are equipped with full elliptical springs of the best tempered stock and each size fitted carefully for the weight of car and passengers it carries. No other type of spring adapts itself to both minimum and maximum passenger load, and to both boulevards and rough roads, as does the full elliptical spring.

Pumps

The pumping system includes two water pumps, one gasolene pump, and one cylinder oil pump, which are so aligned that the

four plungers form one (built-up) part. This plunger part is actuated from the engine by two other parts, so that in the whole pumping system there are but three moving parts, exclusive of



Stanley pumps, showing how the four plungers form one moving part. The two large pumps are for water, one or both of which may be by-passed by the lever on the steering wheel.

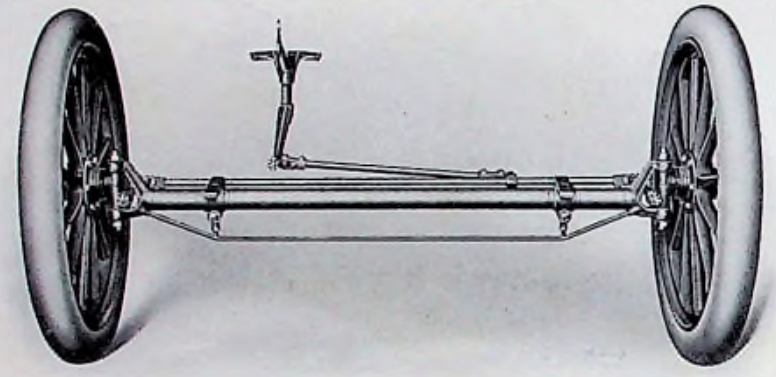
rollers. The pumps move constantly while the engine moves and not independently of the engine. There are also a hand gasolene pump and a hand water pump.

Superheated Steam (*Patented*)

The use of superheated steam is desirable in two ways. First, it saves water. While water practically costs nothing, it has to be carried, and this adds to the total load. Second, it saves fuel. This costs money. By our patented system of superheating we completely avoid overheating and consequent burning of the cylinder oil. Our system, while securing a high degree of superheat, renders it impossible to overheat.

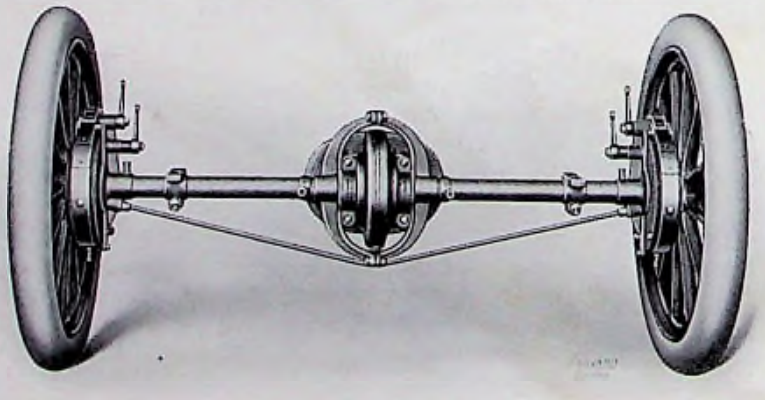
Axles

The Stanley axles are of straight heavy steel tubing trussed in so skilful a manner that they have the maximum strength with the minimum weight. The front axle is so constructed in relation



Detail of front axle, showing trussing, steering mechanism and rods; and complete protection afforded the steering gear by the axle itself. Only six moving parts in this steering gear. Timken roller bearings are used.

to the steering mechanism, that the latter is completely protected by the former and no part of the steering mechanism projects below the axle. Thus no obstruction in the road can reach the steering rods unless the axle itself is first demolished.

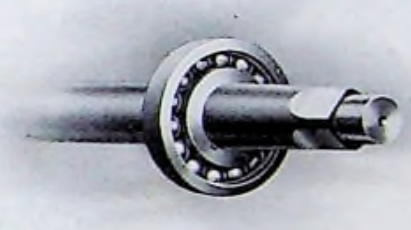


Detail of rear axle showing trussing and oil-tight casing of differential. The large elliptical case is the rear member of the oil-tight engine case. Timken roller bearings for inside bearing, and parallel roller bearings for outside bearing.

Furthermore, the lowest points of clearance in the Stanley car are the axles themselves. There are no fly wheels or other parts in the body of the car projecting so low as the axle lines. Hence, that danger of bringing a low-hung mechanical part into contact with a high point in the road while both front and rear wheels are on lower ground is entirely lacking in Stanley cars.

These points of construction, usually given little attention by manufacturers, are among the many features that make the Stanley the safest car on the road. The clearances on Stanley cars are as follows:

Model	Front Axle	Rear Axle	Between
65	11 inches	9 inches	14 inches
76	12 "	10 "	15 "
809	12½ "	10½ "	15 "



Wheel-end of rear axle showing roller-bearing: and squared and tapered sections.

The front axle and spindle are provided with oil cups. The rear axle is lubricated automatically from the engine case.

The wheel-end of the rear axle driving shaft is made with a round tapered section and a squared section. The wheel is forced in to this driving shaft and is held there by a nut with cotter-pin.

Brakes

The controlling brakes are of the internal expanding type, located on the hubs, protected from dust, and controlled by a pedal in position under the right foot. The emergency brakes are external contracting, also on the hubs, and controlled by a hand lever. All brakes are lined with multibestos.

The reverse mechanism may also be used as a brake without injury, as when the engine is reversed, the compression of air in the steam chest will act against the forward force of the rear wheels and check it.

Fusible Plug

(*Patented*)

The burning of the boiler is avoided by the use of our fusible plug. When the water in the boiler gets too low, the plug melts out and warns the driver, who at once shuts off the fire and the boiler is protected.

This plug is so situated that it can be quickly removed and a new one put in its place, and after pumping water into the boiler the fire may be relighted and in a few minutes the vehicle is under way again.

The Importance of Cylinder Oils

It is costly practice to experiment with cylinder oils. The damage is done within the engine before making itself known to the operator. Observation over a period of many years in our own repair shop has shown us that much of the cylinder, valve and piston trouble, some of which is so mysterious and unaccountable to the driver, is caused by the use of inferior or unsuitable oils.

The question of lubrication is one of vital importance to the economical operation of any car, and it is to the mutual interest of Stanley owners and ourselves that the oil best adapted to meet the requirements existing in Stanley cars should be used at all times. After giving this matter much care and attention, we adopted, and have used exclusively for some years, the Harris Superheat Steam Cylinder Oil, furnished by the A. W. Harris Oil Company, Providence, R. I., and the Oilzun High Pressure Superheated Steam Cylinder Oil manufactured by the White and Bagley Company, Worcester, Mass., and would urge each Stanley owner to have one of these oils on hand at all times, and always to run his car with it, feeling confident that thus the best results will be obtained.

Location of Parts

In all our cars the boiler and burner are under the hood in front. The mixing tube, blow-off valve, fusible plug and safety valve are at the very front, and in the most accessible places. The brake levers are both in position for the right foot, and the reverse lever for the left foot. The throttle valve and by-pass levers are sub-imposed on the steering wheel. The burner valves, water indicator and gauges are on the dashboard. The cylinder oil tank and water and gasolene pumps are under the front foot board.

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