



The American Steamer, made by The American Steam Truck Company, of Chicago, uses 7-cent fuel, the engine has only seventeen moving units, and the boiler produces steam in two minutes. Flexibility, power and economy are its features. The car sells for \$1,650, f. o. b. Chicago.

THE AMERICAN STEAMER

A New Steam Car Hails from Chicago; Improved Burner and Boiler Features

THE American Steam Truck Co., of Chicago, has entered the passenger car field with a new five-passenger phaeton, which, although built along conventional lines as far as appearance is concerned, incorporates a steam power plant as the source of power. Realizing that it is not the engine or transmission system that has stayed the progress of utilizing steam as automotive power, the engineers responsible for the American Steamer have devoted much time and effort to the boiler and burner. It is claimed these features have been worked out, by continual experimentation over a period of twenty years, gradually being perfected point by point, until the present stage of development was reached. Simplicity of construction and control are two points which are very much in evidence when steam as a motive power is considered, and, while all these advantages are incorporated in the car, they have been accomplished in such manner as to permit a reasonable first cost to the owner. Operating costs should be low, as it is claimed the engine can be operated on seven to eight-cent per gallon fuel, on which it gives a

fuel consumption of ten miles per gallon of fuel. No official speed tests have been made but the car has on several occasions attained a speed of sixty-five miles per hour.

The burner is an atomizing type, the fuel being pumped from the supply tank under pressure to a pressure tank by an ordinary plunger pump. A single fuel line leads from the pressure tank to a conduit about four inches in diameter, which enters at an angle the refractory lined circular fire-pot. In front of the nozzle is an electrical igniting device the usual pilot light being dispensed with. The Control is by a single lever on the cowl, which, when open complete an electrical contact to the lighting device and turns on the fuel. The flame swirls around the inside of the fire-pot and is thus kept away from the nozzle, as combustion takes place entirely within the fire-pot, heat being stored and retained by the refractory material. The pressure under which the fuel is carried makes possible the swirling or circular motion of the fire, however, to assist combustion a very light duty motor brings air into the fire-pot through the opposite end of the conduit. It is

claimed that this method of creating combustion, eliminates the carbon and soot formations at the burner and on the boiler tubes and does not require adjustments for variations in the viscosity or various grades of fuel that may be used.

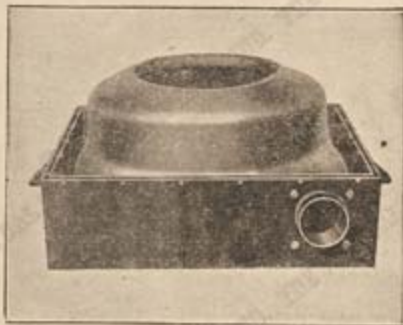


Fig. 1. The combustion chamber or fire pot, a big factor in making the American Steamer burner so effective.

The boiler is so constructed that the flame from the burner can not reach the tubes and also has several other unique features. The steam storage capacity is large and the circulation is such that saturated steam or water cannot reach the throttle. The water level is maintained to close limits by a specially designed water regulator. The construction of the boiler is also such that it can withstand considerable heat without developing tube or weld leaks. A mud drum or ring is located below the rim of the fire-pot, not exposed to the heat, and any oil or other foreign substances

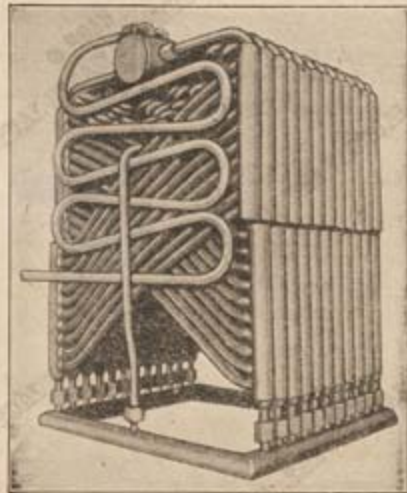


Fig. 2. Showing the remarkable construction and sectional features of the American Steamer boiler.

that may find their way into the boiler drop to this level and then are blown off without incrusting the inside of the boiler tubes. If this incrustation were permitted to form, it would act as an insulator between the walls of the tubes and the water and consequently boiler efficiency would decrease due to the tubes burning out.

The engine, rated at twenty-two and one-half horse-power, is of the two-cylinder vertical double acting type, developing a high starting torque with an economical consumption of steam. It is claimed that by providing two expansions of the steam, it is possible to get very satisfactory condenser results, as the pressure of the steam is almost reduced to atmospheric. The engine has a piston valve and Joy valve gear, which provides a rapid opening and closing of the valves.

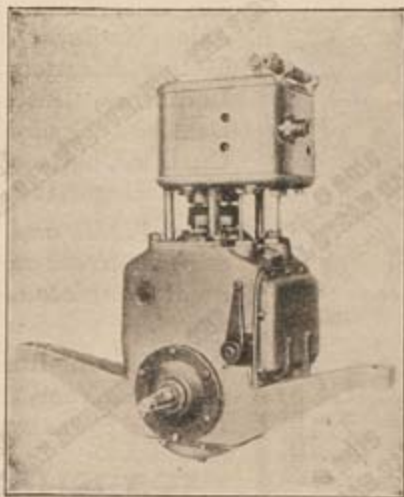


Fig. 3. The American Steamer engine, very small, very compact and very light in weight, but delivering consistently over 20,000 inch pounds torque.

The condenser is located at the forward end of the chassis and is similar to the conventional radiator of gasoline propelled cars. The exhaust steam of the engine is passed through the condenser, the latter being aided by a fan in a similar way that circulation is assisted in a gasoline car. A pump draws the water which collects in the condenser to the supply tank. The boiler with its fire-pot and the engine are located under the hood immediately back of the condenser. The pumps are located under the floor boards and driven from the main shaft by means of Thermoid universal joints. Three pumps are employed, all of which are of the plunger type; one supplying water to the boiler, one draws water from the condenser to the supply tank, and the third pumps fuel from the main supply tank to the pressure tank. Their function is accomplished automatically as duty demands.

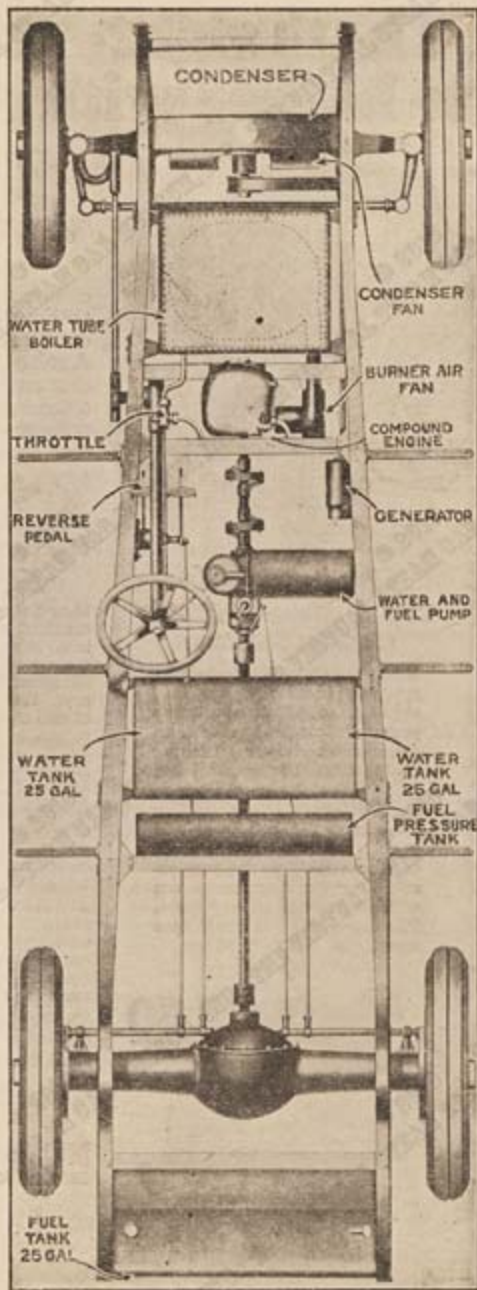
The control of the American Steam car is quite simple; there are no gears to shift or clutch to manipulate while driving; however, it is provided with a lever in the usual gearshift position, which permits the engine to be disengaged from the driveshaft so that it can be run idle if desired for operating the pumps or clearing the cylinders of condensation. The fire is turned on at the cowl by a single control lever. One slow turn of this valve is the complete and preliminary action, as this starts the fire going, which thereafter functions automatically. At six hundred pounds steam pressure, the fire shuts completely off automatically, and when the pressure drops to fifty pounds, the fire cuts in again until the full steam pressure is reached. While considerable heat is stored in the fire pot to protect the car from freezing in the winter, this automatic fire control when left on adds double insurance, as the fire is on at intervals and will always keep the power plant warm for as many hours as necessary. This is only necessary for long periods in extremely cold weather, as

To the right is shown the chassis of the American Steamer, showing the mechanism of this new car. The boiler and the engine are under the hood, and the pumps are under the front seat. The entire load is evenly distributed. The water tank holds enough water for 250 miles of travel, and the fuel tank holds enough fuel for 300 miles.

the fire pot and boiler are contained in a thick, insulated shell, which retains heat for many hours. It also takes four to five hours for steam pressure to entirely dissipate, which adds to the protection against freezing.

The chassis follows conventional car design, having semi-elliptic springs front and rear and a pressed steel frame. The rear axle is of the three-quarter floating type, having spiral bevel gears providing a gear ratio of one and three quarters to one. The front axle is a drop forging of specially treated steel and the wheels are mounted on Timken tapered roller bearings. The Hotchkiss type of drive is employed to take the torque and driving stresses, and the drive from the engine to the rear axle is by means of two metal universal joints and a tubular propeller shaft. Left-hand control is used and the chassis equipment includes 33x4 Goodyear cord tires.

The 121-inch wheelbase provides long, rakish lines, while genuine heavy leather upholstery over double spiral springs on seat cushions and back provides ample comfort for the driver and passengers. The top is of the one-man type, with beveled plate-glass window in the rear. The electrical



system is of the twelve-volt type, including an Exide battery, drum headlights with special deflecting lenses and tail and auxiliary lights.

Equipment consists of a single glass, clear-vision, slanting windshield, instrument board lamp, steam and fuel gauges, ammeter, oil gauge, speedometer, ignition switch and portable light with reeled cord. Also a complete set of tools, extra wheel or rim and carrier. Body equipment includes door opening curtains, robe rail back of front seat, extra heavy aluminum bound linoleum floor covering in front and thick, luxurious carpet on rear floor.

The chief reason why so little development has taken place in the steam automotive field has been the inability to provide a burner and boiler that would generate sufficient steam for this duty, occupying at the same time a space small enough, and do the work efficiently and economically in a simple, uncomplicated, fool-proof mechanism, so that the average motorist could handle it with perfect and care-free satisfaction. The American Steam Motor Truck Company claim that tests have proven to them that they have accomplished this ideal and that production on the five-passenger model will be started immediately. The initial plans call for a schedule of three hundred cars daily, and other models, such as roadster, coupe and sedan, will be added as the market demands.

Locating Ignition Trouble

IF the engine is missing test the spark plugs to ascertain which one is causing the trouble.

Short circuiting the plugs one after another by leaning a hammer head against them will quickly give this information, because the missing



plug when short circuited will make no difference in the running of the engine, while in the other cases it will. One end of the hammer head should rest on the cylinder as shown in order to complete the circuit through the hammer instead of through the spark plug.

Canadian Registrations

Of the 400,310 motor vehicles registered in Canada, Ontario possesses the largest number with 206,900, followed by Saskatchewan with 62,958; Quebec, 59,707; Alberta, 38,750; British Columbia, 31,000; Manitoba, 40,430; Nova Scotia, 14,250; New Brunswick, 13,564, and Prince Edward Island, 1,751.

Worth Trying

CONSIDERABLE trouble is often caused when overhauling a car by wrenches or other tools slipping into the dust pan under the engine. It may be that clutch adjustment is being effected, and, as a rule, the workman finds that he has to adopt a very cramped position with his head and shoulders half under the dash.

In such a case it is an easy matter for a wrench to slip out of one's greasy fingers, and as often but little space is left between the bottom of the flywheel and the undershield, it may be a matter of considerable difficulty to retrieve the missing tool. With unit construction of engine and trans-



mission the trouble may be considerably worse, for, should the wrench slip into the clutch housing, it may be the work of hours to recover it with the aid of a piece of bent wire.

These troubles can easily be guarded against by the simple precaution of tying a length of string to the other end, the string being attached to one's wrist, overall coat, or to an adjacent part of the car. This assistance is more particularly helpful, when, as generally is the case, two or more are being used at the same time, or alternately on the same nuts.

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