

1922

T.C. - AUTOMOBILES, STEAM

American Steam Truck Co.

TECHNOLOGY DEPT.

The American Steamer

*Five
Passenger
Phaeton*



STEAM UNDER THE HOOD

American Steamer experimental car finished in 1918 and tested out over a period of fifteen months for upwards of 35,000 miles



THE AMERICAN STEAMER has arrived. That much desired, long sought for, perfect, low priced steam car is here. The ideal steamer for which the American public has held faith during the twenty-five years of automobile development is now ready to take its rightful place as the peer of all motor cars.

Recent scientific steam discoveries, coupled with inventive genius, persistent research and experimentation by this company and its engineers for twenty years has made possible a motor car driven by steam, superior in every way to any other car in existence.

We announce immediate delivery of the AMERICAN STEAMER five-passenger phaeton, offering to motorists that exquisite joy, supreme driving satisfaction, easy, flexible, dependable flow of power possible to steam only. A car which affords and establishes a simplicity and ease of operation no where near obtained by any other car. A rugged, but refined super-normal automobile which sets a world standard for long life, efficiency and low cost of maintenance. A car that practically assures reduction of mileage cost by fifty per cent.

And withal, the AMERICAN STEAMER is a thing of beauty. Its grace of lines, the genuine, balanced refinement throughout, the perfect craftsmanship woven into it thoroughly is not exceeded by any car twice its price.

Here is the AMERICAN STEAMER — the greatest automobile achievement in twenty-five years, ready now for your use and enjoyment.

PASSENGER CAR DEPARTMENT

American Steam Truck Company
20 East Jackson Blvd., Chicago

R. R. Howard, President and Treasurer; E. C. Jacobson, Vice President; Harry F. Gay, Secretary; A. T. Macdonald and H. A. Moje, Directors

Forty Puffs

Only one switch on the dash to turn, and the car is ready to go.

About two minutes to wait for steam when machine is cold. Much less when the boiler is hot.

It stays hot for hours.

Start, stop and control by moving the throttle lever on the steering wheel post.

No gears to shift, grind, wear out, or become noisy.

No clutch or speed pedal to operate.

Develops over 60 to 75 horse power, as compared with gas engines.

By a single movement of a lever on the dash, power may be increased 100 per cent—for emergencies or convenience.

It operates on gas oil, kerosene, distillate or fuel oil; gives a mileage of 11 miles to the gallon of gas oil (8c per gallon).

Will pull uphill or through sand, mud or snow, in a manner no gas car can possibly hope to equal.

The engine runs from 25,000 to 50,000 miles without need of overhauling.

Costs one-half as much to overhaul as a gas engine.

Uses less than quarter as much lubricating oil as average gas car.

No complicated machinery in burner or steam control apparatus.

Complete operation is automatically controlled from the seat.

The burner shuts off automatically when boiler has sufficient steam pressure, and burns again automatically when steam falls below a certain pressure.

No adjustments of burner required whatsoever after leaving the factory.

The burner is ignited and entirely controlled by electricity. No pilot light is used.

The boiler is assembled in sections to insure low cost and convenience in making repairs. Safety is assured—the American Steamer boiler cannot possibly explode.

It will not freeze under worst Chicago weather

conditions where ordinary precautions are taken.

Practically unaffected by cold in its operation. Full water tank (25) gallons operates 250 to 300 miles without replenishment.

Because steam pressure is power without vibration, tire mileage is greatly increased, and the running gear of the AMERICAN STEAMER has double life, far less breakage and repairs than any other car in existence.

It operates on low-grade, cheap fuels, which are burned with perfect combustion in the AMERICAN STEAMER burner. Affords a quick start and rapid acceleration, without gear shift or clutch manipulation.

It will creep smoothly under load at half mile per hour on hill or level, and accelerate to full speed by simply moving the throttle.

Complete control is afforded with throttle lever and brake.

The engine is very quiet and gives practically no vibration.

It affords 100 per cent power at all speeds on direct drive.

The AMERICAN STEAMER has only 17 moving units.

It is impossible to kill engine at some critical moment.

It eliminates transmission, gear shift, clutch, fly wheel, magneto, carburetor, distributor and has no complicated parts to take their place. Knocking of engine on grades is never experienced.

There is no carbon to reduce engine efficiency. No re-grinding of valves is necessary.

Oil troubles and burning out of engine bearings cannot be experienced in the AMERICAN STEAMER.

The simplicity and ease of repairs, and the comparatively few working parts, reduces the cost of maintenance to a minimum.

It is a quiet and smooth riding car and has a quicker pick-up or get-away than any other car in existence.

It is the ideal car for ladies or elderly people to drive because of its simplicity of control and ease of operation.

Specifications

American Steamer 5-Passenger Phaeton

WHEEL BASE: 121 inches.

WHEELS: Distel or artillery type, 33x4, fitted with Firestone Straight Side Demountable Rims.

TIRES: 33x4 Goodyear Cord.

ENGINE: Especially designed American Steamer Engine, rated 22½ horsepower steam (equal to over 60 horsepower gas). Two-cylinder, compound, double acting, high pressure, superheated steam. Located under the hood. Heavy duty chrome nickel crank shaft, 2½" diameter. Extra large bearings. Forced feed cylinder lubrication. Engine turn-over 500 revolutions per minute at thirty miles per hour. Power plant delivers speed of 65 miles per hour. Convenient foot pedal "simples" engine to increase horsepower 100 per cent at will. Steam consumption 12 pounds per horsepower hour. The most economical small engine in the world.

BOILER: Especially designed American Steamer Boiler. Water tube type, made in sections. Located under the hood. Built of cold drawn seamless steel tubing. Constructed especially to take care of severe expansion and contraction. Will withstand overheating many times without tubes leaking. Rapid steamer. Heating surface 150 square feet. Unusually large water and steam capacity. Tested to 4,000 pounds pressure to the square inch. Working pressure 600 pounds to the square inch. Provided with safety valve at 850 pounds pressure. Also has automatic burner cut-off at 600 pounds pressure.

BURNER: American Steamer especially designed atomizing type for burning low grade fuels such as fuel oil, gas oil, distillate and kerosene. Fire box lined with refractory material so designed and constructed as to cause

complete combustion of gases in the fire box, thereby preventing the destructive action of the fire from impinging on the boiler tubes. Controlled and operated entirely from the dash by automatics. Generates working pressure of steam in about two minutes.

CONDENSER: Special flattened tube type, 150 square feet of radiating surface. Handles complete condensation easily. No steam exhausts into the atmosphere.

WATER TANK: Water tank located under front seat. Capacity, 25 gallons. Range 250 to 300 miles.

FUEL TANK: Located at rear of chassis. Capacity, 25 gallons. Range, 250 to 300 miles. Indicator gauge on instrument board.

PUMPS: Located below back floor boards on main shaft. Driven from shaft by Thermoid coupling.

THROTTLE VALVE: Patented duplex balanced valve, with metal to metal seats, packless valve stem, allowing flexibility of motion without loss of power. Quick opening—self cleaning—noiseless—non-corrosive or erosive—no grinding of valve—made of Monel metal.

BRAKES: Internal expanding and external contracting.

SPRINGS: Semi-elliptic, front and rear. Front, 40"x2". Rear, 54"x2½".

AXLES: REAR—Special American designed three-quarter floating type. Special bevel nickel steel gears. Gear ratio, 1¾ to 1.

FRONT AXLE—Forged from high grade steel specially heat treated. Tapered Roller Bearings front and rear.

UPHOLSTERY: Heavy genuine leather over deep spiral springs on seat cushions and backs.

TOP: One man, gypsy type—sun and rain proof. Beveled plate glass window in rear. Curtains open with doors.

ELECTRIC SYSTEM: Special American Steamer 12 volt generator and motor. Exide battery.

THE AMERICAN STEAMER

FIVE PASSENGER PHAETON

FIVE PASSENGER TOURING CAR
PRICE \$1,650 F. O. B. FACTORY
WAR TAX EXTRA



American Steamer five passenger phaeton—
stock car complete with standard equipment

Specifications—*Continued*

ELECTRIC LIGHTS: Large headlights with special deflecting lenses. Tail light.

EQUIPMENT: Single glass, clear vision, slanting windshield. Electrically lighted instrument board mounting, combination steam and fuel gauges; ammeter, lubricating oil

gauge; speedometer; ignition switch and light with reeled cord for portable use. Robe rail on back of front seat; extra heavy aluminum bound linoleum floor covering in front; thick, luxurious carpet on rear floor. Complete set of tools. Extra wheel or rim and carrier.

How It Works

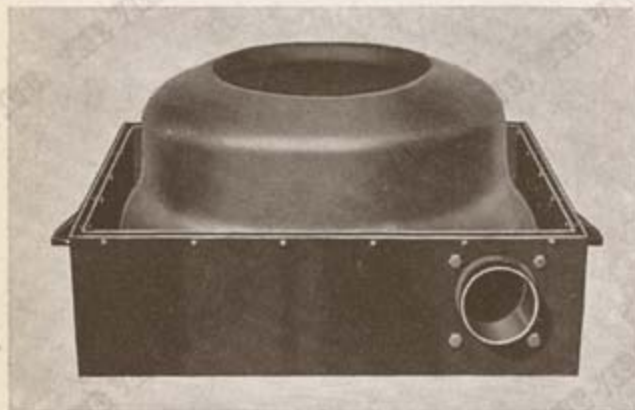
THE chief reason why so very little development has taken place in the steam automotive field, has been inability to provide a burner and boiler that would generate sufficient steam for this duty, occupy at the same time a small enough space, do the work with sufficient efficiency and economy, in a simple, uncomplicated, fool-proof mechanism, the ordinary man on the street could handle with perfect and care-free satisfaction.

THE AMERICAN STEAMER has been worked out by continual experimentation over a period of twenty years, gradually being perfected point by point, until a steam apparatus has been designed that provides plenty of power quickly, easily, simply and economically. Results are achieved with more certainty and with less trouble than with a gasoline car, while at the same time affording greater advantages of steam—stored power; flexibility, long life and low operating and maintenance cost.

CONTROL: The fire is turned on at the dash by a single control valve lever. One slow turn of this valve is the complete and preliminary action. This starts the fire going which thereafter functions automatically. No other preliminary movements are required. Working pressure of steam is reached in about two minutes from dead cold. At 600 pounds steam pressure, the fire shuts completely off automatically and when the pressure drops downward about 50 pounds, the fire cuts in again from dead out until full steam pressure is reached.

Naturally there are no gears to shift or clutch to manipulate in driving. **THE AMERICAN STEAMER**, however is provided with a lever in the position of the usual gear shift, which permits the engine to be disengaged from the drive shaft so that it can be run idle if desired for operating the pumps or clearing the cylinders of condensation or for other purposes which may appear from time to time. Other steam cars have found it necessary frequently to jack up the rear wheels in order to idle their engine.

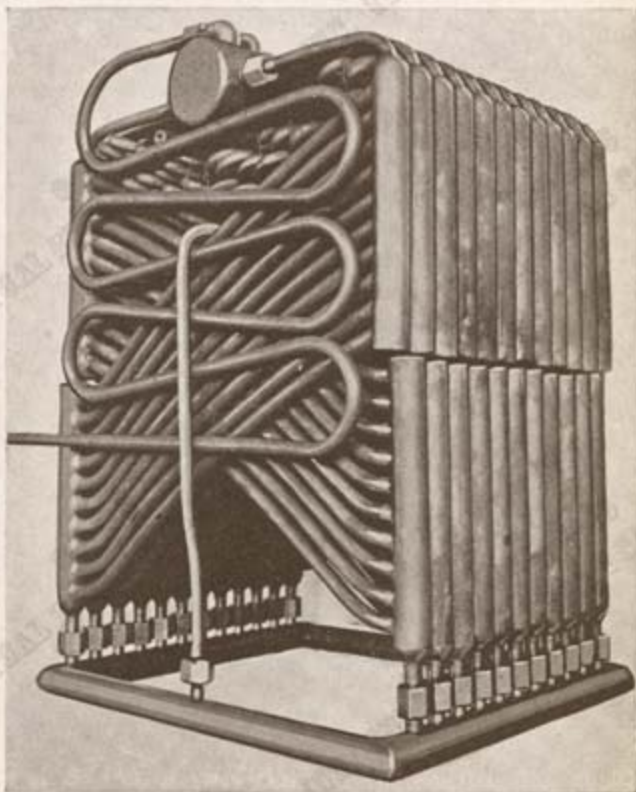
BURNER: The American Steamer Burner is an automizing type, worked out after years of experimentation by Mr. E. C. Jacobson, vice-president of this company, and while a description of it sounds similar in a general way to some other burners which have been tried and failed, this burner does the work required of it in a simple and highly satisfactory manner. The fuel is pumped from the supply tank under high pressure to a pressure tank, by an ordinary plunger pump driven on the main shaft. 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 which is over two feet in diameter and fourteen inches in depth. At the end of the fuel line is a single hole nozzle located in the conduit, about six to eight inches back from the fire pot. In front of the nozzle is the electrical igniting device. There is no pilot light. Opening the control valve at the dash completes an electrical contact to the lighting



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

device, turns on the fuel, and the flame swirls or circles around inside the fire pot. The nozzle is thus out of the flame and heat. It is never troubled by clogging up with carbon or soot. Complete combustion takes place entirely within the circular fire pot. Heat is stored and maintained by the refractory material. The pressure under which the fuel is carried, provides the chief force or blast which propels the circular motion of the fire, however, at the other end of the conduit is a very light duty motor which brings air forward into the fire pot in order to supply sufficient oxygen to make combustion perfect. This method achieving complete combustion, leaves our whole burner apparatus free from carbon and no soot and no deposits or incrustations of this element, collect on the boiler tubes. There is nothing fine nor intricate about the adjustments of the automatics on this burner. We

have had absolutely no failures in getting fire when desired. Viscosity of fuel, whether kerosene, distillate or fuel oil, makes no difference to this burner, the oil may be changed in the supply tank at will to a different grade of oil and the apparatus will handle the change perfectly without calling for readjustment.

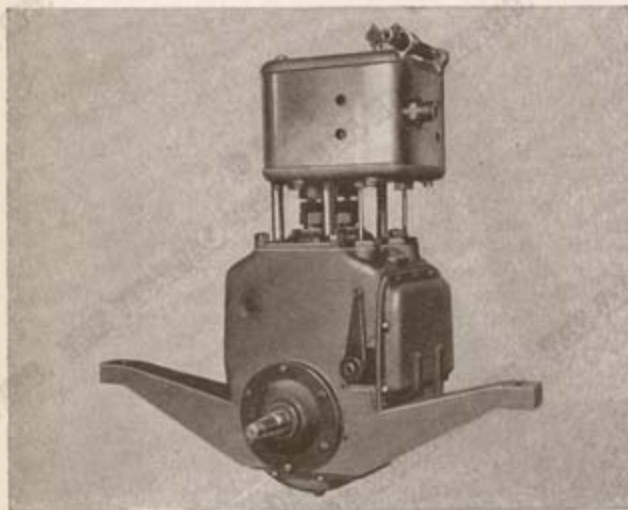


Showing the remarkable construction and sectional features of the American Steamer boiler

BOILER: The American Steamer Water Tube Boiler accomplishes two or three things in boiler construction never reached by any other steam automobile boiler designed. In the first place, this boiler has tremendous steam storage capacity. The circulation is such that it is impossible to pull saturated steam or water to the throttle. Water level is maintained with a variation of less than an inch by our own especially designed water regulator. The biggest advantage of all in this boiler, is that it is possible to let it get red hot many times and even run cold water into it while it is quite hot and no tube or weld leaks develop. We have put one boiler, which is at this time in operation, to a test of overheating more than fifty times and none of its joints

or welds have fractured or developed leaks. The fact that our mud drum or ring is below the rim of our fire pot thus not exposed to heat of the fire is of special advantage. All oil and other foreign substances that may find their way into the boiler, drops to this lower level which is never more than about 200 degrees hot and is thus blown off without incrusting on the inside of the tubes, which in other boilers forms an insulation between the water and the tubes, causing them to burn out. The whole system is extraordinarily free from scaling. We are able to show boilers in use for three years absolutely without any indication of scale. These facts together with the fact that the flames from our burner do not reach the tubes, assure a long life troubleless boiler.

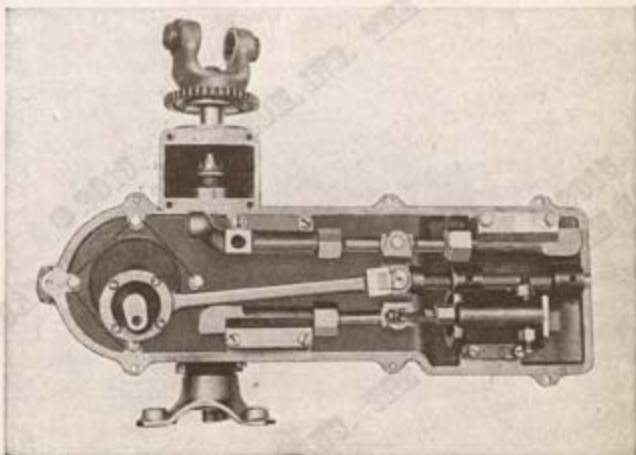
ENGINE: American Steamer Engine is a two cylinder, double acting compound engine. It delivers the high starting torque desired and is astonishingly economical in its consumption of steam. Besides the desirability of its economical features, the fact that we get two expansions of the steam thus bringing the pressure down close to atmospheric pressure, makes it possible for us to get highly satisfactory condenser re-



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

sults. This engine has piston valve and Joy valve gear which is an advantage over the Stephenson in that the lead is not increased and the distribution of steam to the two ends of the cylinder on short cut-off is more nearly equal. This valve gear also gives a rapid opening and closing to the valve. It is safe to say that this engine will deliver a mileage of several hundred thousand miles or upwards of ten years of continual duty and it is a certainty that it will run forty or fifty

thousand miles without overhauling. A very interesting feature is that the two or three quarts of lubricating oil in the crank case, requires no change or addition in three or four months, in fact, the one filling of oil in the crank case will run the engine ten thousand miles without change.



This shows the complete pump unit remarkable for its efficiency and simplicity

PUMPS: The pumps in THE AMERICAN STEAMER Passenger Car are located under the foot board in a special unit, driven from the main shaft by Thermoid coupling. There are three pumps (all plunger pumps), one furnishes water to the boiler, one draws water back from the condenser to the supply tank and the third pumps fuel to the pressure tank. These pumps operate at all times while the engine is running. Their function is accomplished automatically as duty requires. They operate at one-half the speed of the engine.

CONDENSER: The condenser is similar to standard radiator of a gasoline car. It has, of course, no water level, the steam passing through from the exhaust of the engine into the top of the condenser, passes down through the core and is turned into water by the time it reaches the bottom. This is aided by a fan in similar way that cooler circulation is assisted in a gasoline car. The pump which draws the water back from the condenser to the supply tank, is of such capacity that a slight vacuum is maintained in the condenser. This has the advantage of letting the steam pass more quickly through the condenser, also relieves the low pressure cylinder in engine of atmospheric back pressure, rendering the work of that cylinder somewhat more efficient.

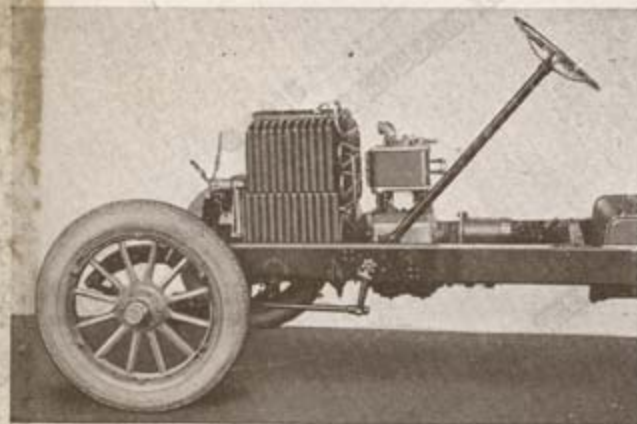
COLD WEATHER: The precaution necessary to protect against freezing is not so great in the American Steamer as with the average gas car. There is no water in the radiator. There are no water jackets

on the engine. Any exposed water pipes are well insulated. Place the AMERICAN STEAMER in a cold garage in extremely cold weather and the stored up heat in the fire pot together with the warm water in the boiler and the fact that the boiler and the fire pot are contained in a thick insulated shell, makes it perfectly safe for upwards of twenty-four hours. Standing a car idle on the street, is perfectly safe under the most extreme weather conditions possible in the United States or Canada. You may leave the fire automatics on and the fire will cut in when your steam pressure drops and cut out again at full pressure thus the fire is on at intervals and everything is kept warm. It, therefore, can stand for as many hours as you care to leave it and at a very small fuel cost. This is not necessary even in zero weather if you expect to leave your car for only two or three hours. Steam pressure does not entirely dissipate for four or five hours. And when you want to drive away, you don't have to wonder whether the engine will start or not. Even in the event of freezing up, the worst possible damage would not make an expense of more than \$4.00 or \$5.00.

SPEED: The engine when turning over 500 revolutions per minute, delivers to the car a speed of thirty miles per hour. Thus it revolves only one-third as fast as a gasoline engine to do the same duty. We do not know the exact limit of speed of the AMERICAN STEAMER. It will maintain more than sixty miles per hour.

BALANCE: While the engine, burner and boiler are all situated under the hood, the engine is light in weight, the burner and boiler are not excessive in weight, the pumps and water tanks are in the center of the chassis and the fuel tank is on the rear. The general weight is thus very equitably distributed and we have been assured by biggest automotive experts, is excellently balanced.

OTHER MODELS: Specifications and prices on Roadster, Sedan, and Coupe, will soon be available.



Showing the compactness of the power plant assembly and its location under the hood

1922

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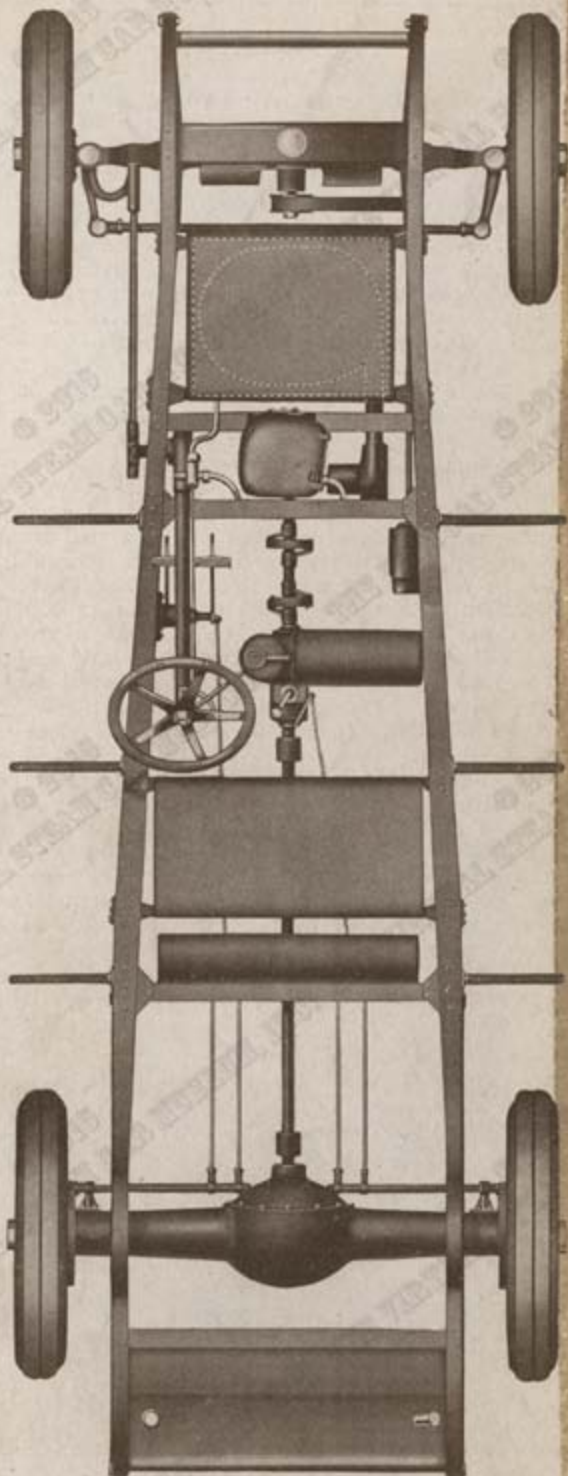
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Bird's eye view of the chassis showing location of various units and giving
a very clear idea of the complete assembly



AMERICAN STEAMER

AMERICAN STEAM TRUCK Co., CHICAGO

1922-24