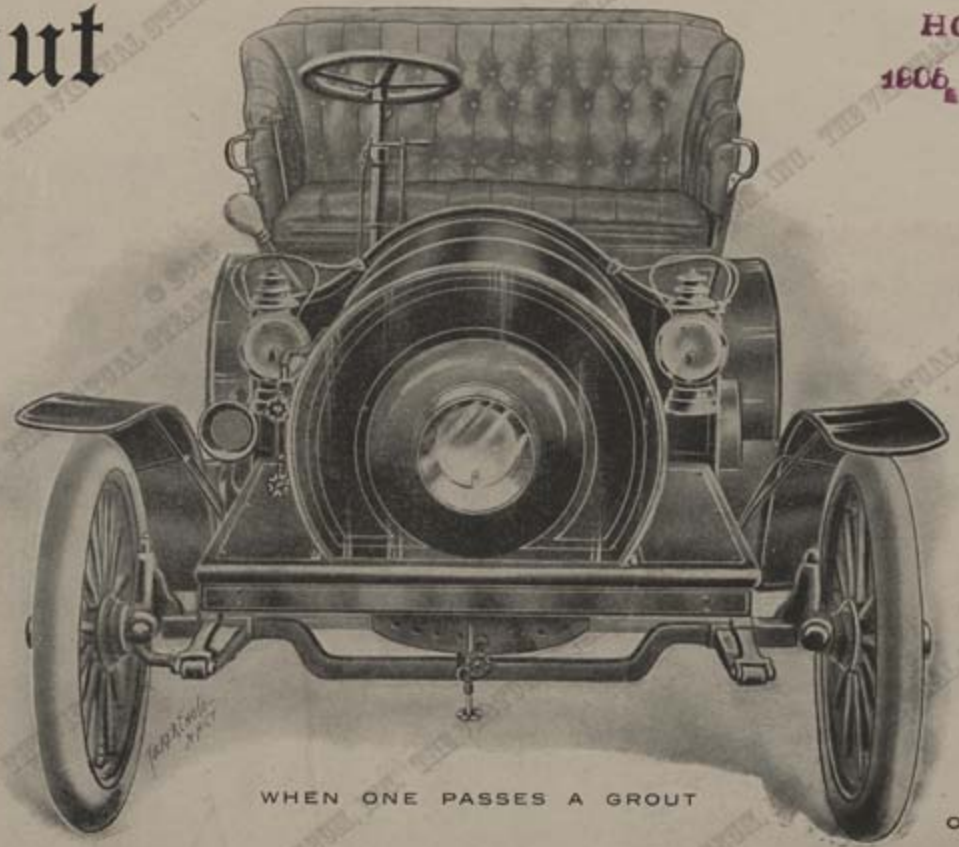
1905

Grout

H Cuntz
1906



ESTABLISHED
1896

WHEN ONE PASSES A GROUT

ORANGE, MASS.
U. S. A.

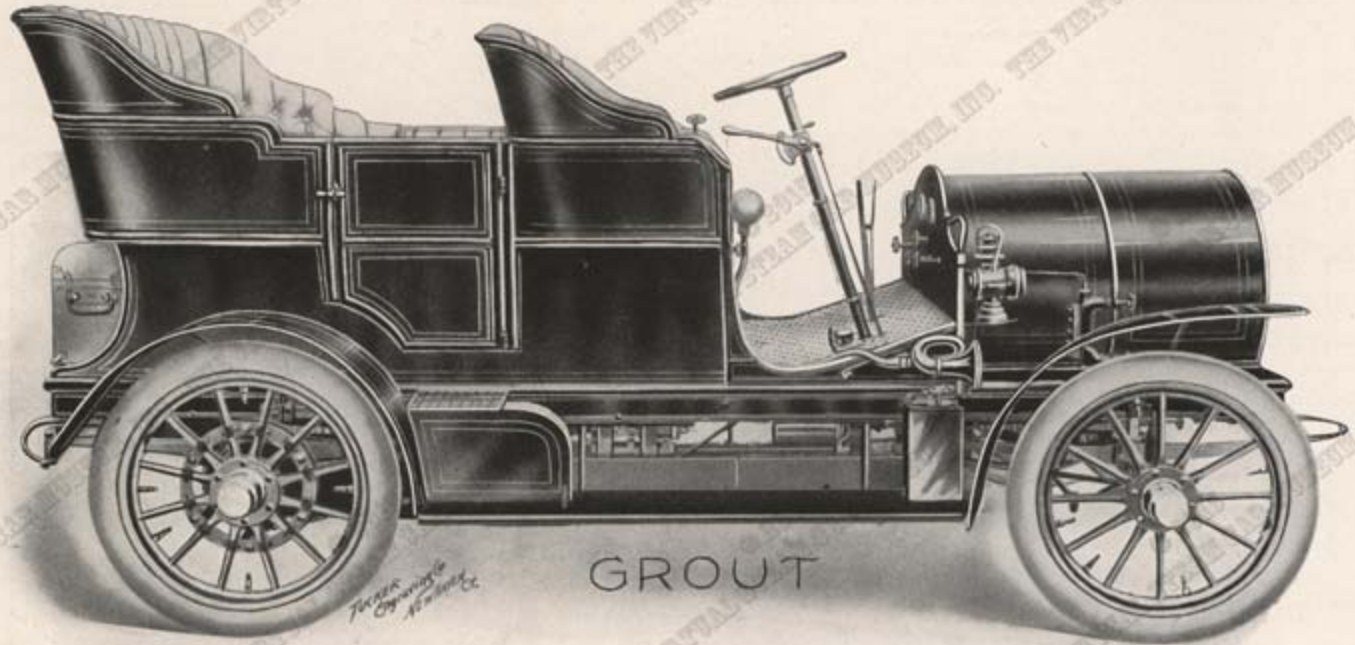
The Grout Automobile Co.

Manufacturers of **STEAM CARS**

Factory at Orange, Mass., U. S. A.

GROUT FACTORY

IN 1896 the Grout Brothers built the first automobile factory in the United States, and very soon afterwards the first Grout car was put on the market. Since that time every year has marked greater improvement in the construction of these cars, until in presenting the 1905 Model, which is a combination of the knowledge derived from the practical experience of all these years, the Grout Company feel confident that they have at last gained the point of perfection for which so many have been striving for so long. A car that is reliable under all conditions, which has a minimum repair bill, that always reaches its destination, that is easy to operate and simple to understand, and consequently a source of continual pleasure to its owner: That is a Grout.


GROUT

Steam vs Gasoline

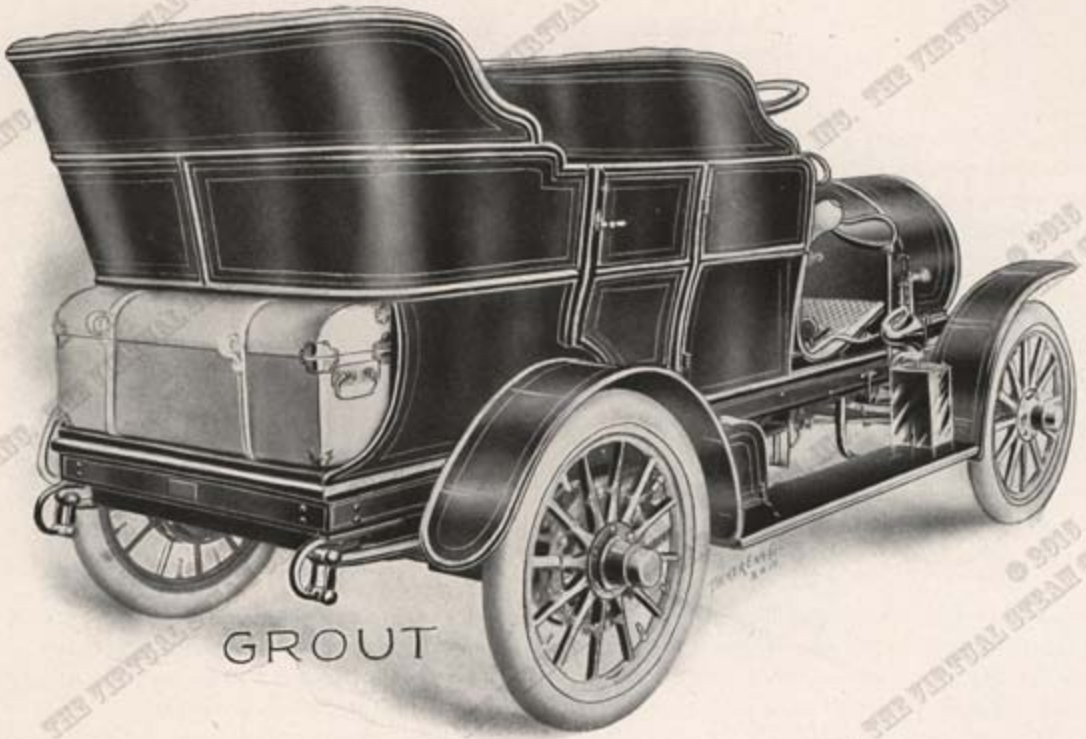
In considering which power is best to employ in propelling an automobile there are certain essential points which must be considered. A car must be ***reliable*** under all conditions, ***simple*** to control, have a ***wide range of action*** over all sorts of roads, a ***speed*** suited to its uses and a ***minimum*** cost of maintenance. It is also necessary that the machine be practically ***noiseless*** and have no vibration.

Reliability

On land and water alike, in factories, shops, mills and power plants; on railroads, ocean liners, warships, torpedo boats and launches, steam and steam only is used successfully. Everywhere a positive power is needed steam units are introduced. The United States government will not allow a gasoline engine on any of its war vessels; even the small launches carried on davits are steam and absolutely reliable. What would the head of a large factory or power plant say to the installation of a gas or gasoline engine to replace his steam plant. He would not consider the proposition a moment. And why is this the case? Simply because for one thing. An explosive motor is unreliable and consequently not fitted to do legitimate work. There is not a "Gasoline Expert" living that can be ***certain*** when he turns the crank of a gasoline motor that it ***will even start*** to say nothing of what power it will develop, or how long it will run, even after it is started. That is far beyond him. And yet if we turn to steam, a yacht builder or a firm building government war vessels will figure to a nicety the horse power and the exact speed of his vessel within a very small fraction before the mechanism is ***even built*** and as far as starting a steam plant of any kind, that is an absolute proven certainty under every and all conditions. Steam is reliable always and everywhere. To fit it to an automobile is simply a question of adaptation.

Simplicity

A gasoline engine at its best is a most complicated affair. The essentials include batteries, coils, spark plugs, carburetors, water cooling devices besides a complication of valve motions, commutators, etc., etc. That is only the engine. Then comes the shifting gears, clutch, mixture, advance and retard of spark, and constant attention necessary to lubrication. All these objectionable features are overcome in the modern steamer. The engine is built after long experience and careful study, is simplicity to an extreme and that in connection with a perfect boiler and burner gives a power unit


GROUT

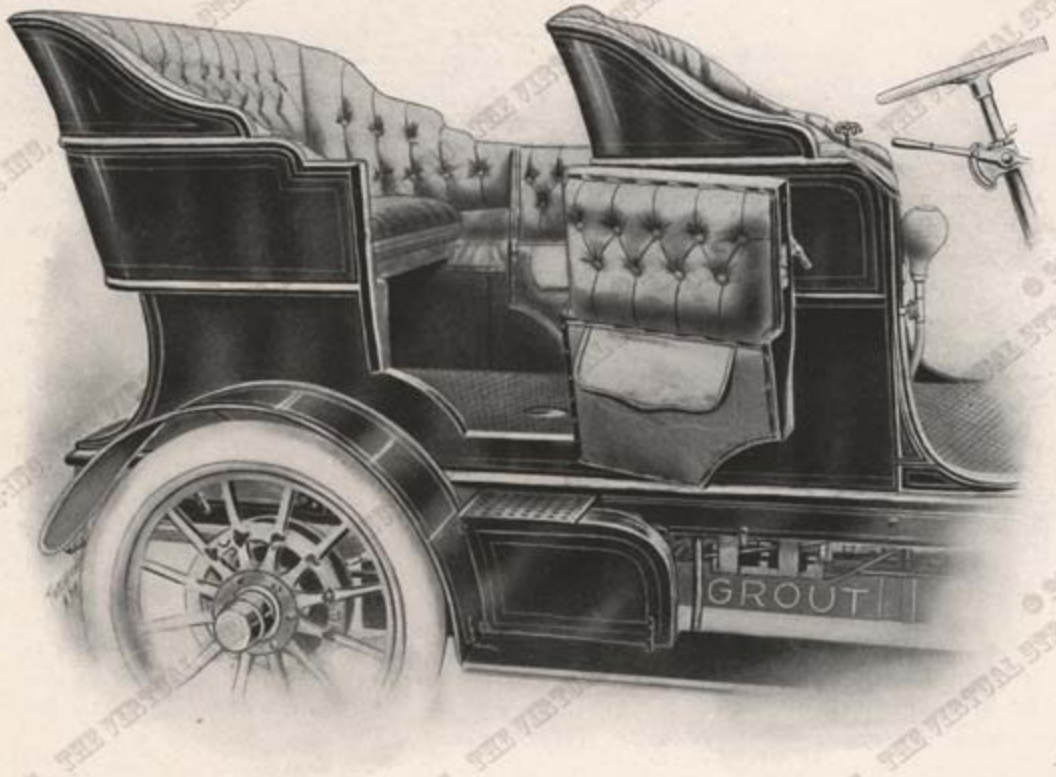
Steam vs Gasoline

compared to which the gasoline combination is an enigma. The flexible perfect control of steam, where there are no gears to change, no mixture to regulate, no spark to work, no lubrication to watch, but simply one lever to open and shut to run from a slow walk to any speed up to maximum, is so far ahead of the control of the gasoline car that arguments on that score for the latter are useless.

Range Since the first steam car was put on the market the hill-climbing ability of this class of machines has been unrivaled. No hill is too steep, no road too sandy or muddy for steam. It is possible to go anywhere with one of these cars that a horse and wagon can go. No stalled motors on hills or on bad roads. The steady even pull of the steam engine takes one everywhere with ease and comfort.

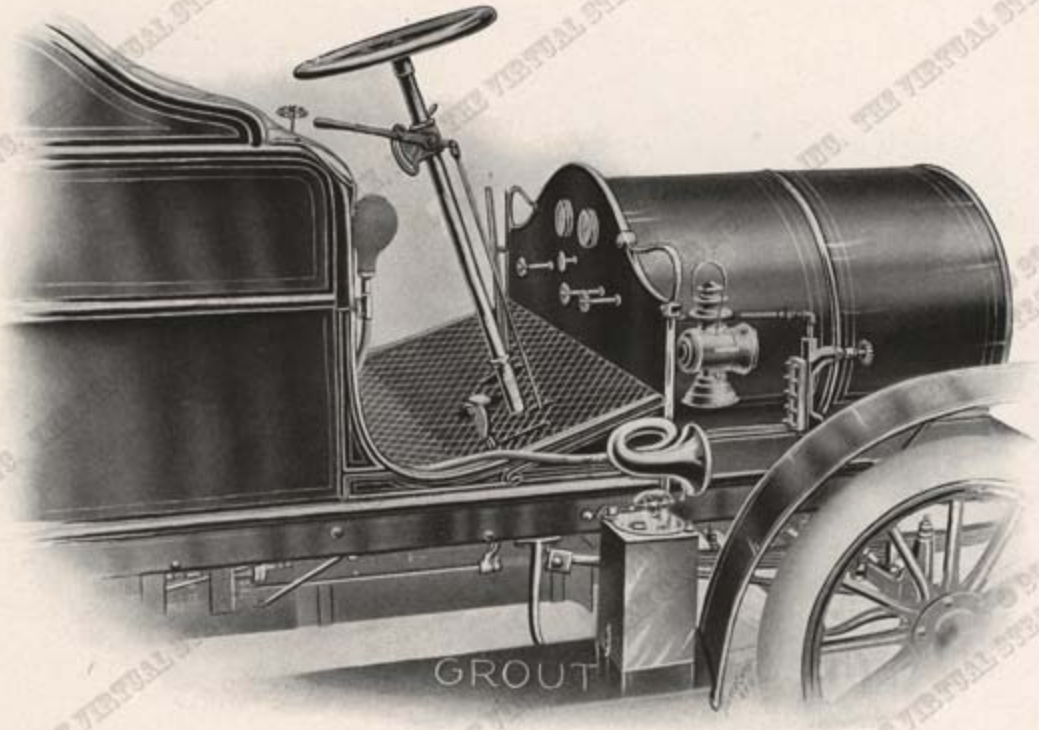
Speed The speed of a car should always be in proportion to the use it is put to. In a touring car a constant speed of 30 miles an hour should be sufficient. That speed can ***easily*** be ***maintained*** by a Grout while a maximum speed of 45 miles is possible on fine roads. A gasoline car to make these runs would be of vastly superior power, or ***gasoline rated power,*** than the modest 12 H. P. of the Grout, but experience shows that this ***rated H. P.*** is far above the developed H. P.—one feature of a gasoline motor that is characteristic. It is very safe to say that ***per rated H. P.*** a steam car is by far faster than a gasoline machine.

Noise Compared to the smooth silent running of a steamer the constant rattling, vibrating gasoline motor if fearfully outclassed. Transportation by automobile should be like gliding on wings rather than riding on a thrashing machine. From the mere principle of steam where a constant, evenly distributed power is applied it can readily be seen that an engine that depends upon ***explosions*** to produce power can never be as still or free from vibration.


GROUT

Steam vs Gasoline

Cost Of Maintenance. The cost of running a machine may be divided into three parts: Cost of gasoline consumed, cost of lubricating oil used, and cost of repairs. While a steam car may burn a trifle more fuel, in some cases, a gasoline machine will invariably use more lubricating oil and by far over run on cost of repairs. The vibration of a gasoline motor is continually shaking the mechanism to pieces, and when one part lets go a pretty general smashup ensues. With steam the absence of vibration allows the parts to remain securely in their respective places and only legitimate wear results.


GROUT

THE 1905 CAR

The 1905 Model of the Grout Car is a side entrance tonneau, capable of seating five people comfortably, with a possibility of an extra passenger on the front seat when necessary. A side chain drive with dead back axle has been adopted as the most practical for touring purposes.

12 H. P. Engine This is a two-cylinder engine of the Stevenson link slide valve type, completely encased in an aluminum case with a new system of oiling. This consists in pumping oil by a small rotary gear pump of standard design, from a well in the bottom of case through a bent copper tube with several holes in it so placed as to throw the proper amount of oil on every moving part of the engine. By this system a positive, constant lubrication is assured and also the engine thoroughly protected from all dust and grit.

Cylinder Oiler A positive, thorough cylinder oil feed is insured by our newly designed oiler working from countershaft.

Cut Off The reverse quadrant has several cut off notches properly placed to give highest economy of steam with consistent running qualities.

Boiler The boiler is of the upright fire tube type, wire wound, thoroughly guaranteed and has a safety plug attachment which eliminates all danger of burning. This boiler has been adopted in combination with a proper super-heater and steam dryer after careful consideration of the water tube and flash boilers.

Klinger Water Glass Of new design is supplied, that cannot clog up. Shows water level positively at all times and is fitted with two valves to shut off from boiler.

Automatic Fire control of latest design.

Burner The burner is of cast iron, slotted, one piece, with a new air-mixing adjustment to allow the burner to use the proper amount of air for complete combustion, but no more or no less. The pilot is contained in the burner and is noiseless. This burner is indestructible.

Lighting Up It requires only five minutes for full head steam.

Steam vs Gasoline

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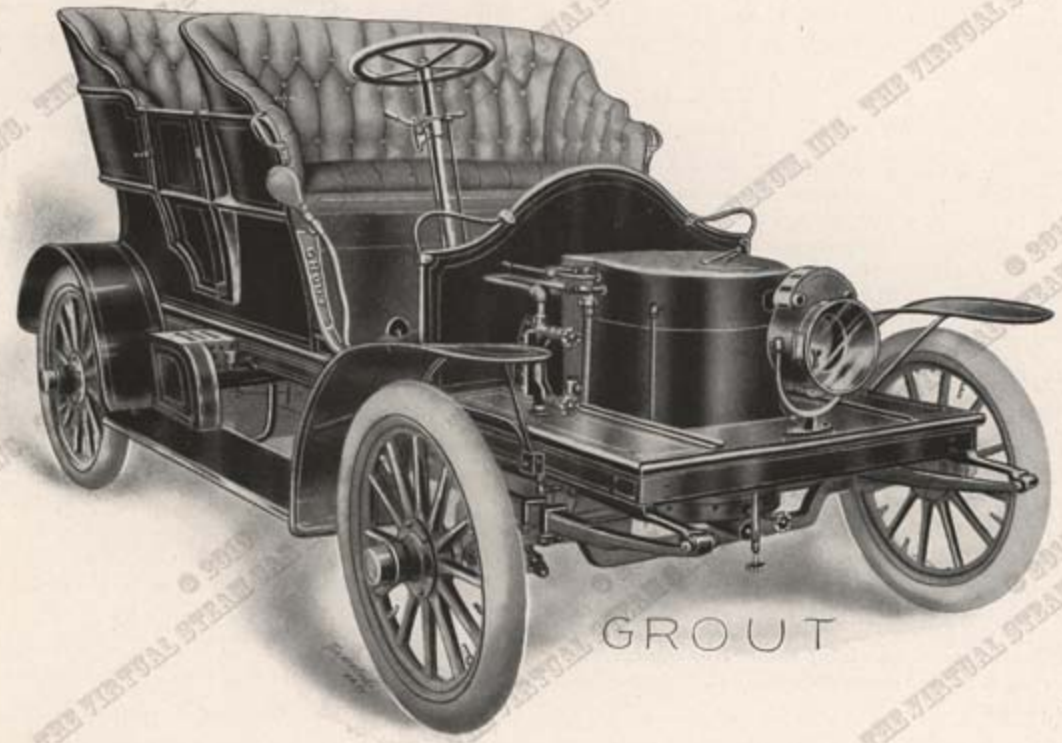
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Throttle An absolutely new throttle is used, which has been designed for the high pressure carried and is positively balanced at all times. This throttle shuts automatically upon slight pressure on brake pad, thus simplifying greatly the operation of the car.

Auxiliary Throttle for high pressure steam.

Fuel System Air pressure on the gasoline to force into burner has been adopted in connection with new air pump as the most reliable of all systems. No leaks are possible in this system, owing to the method of piping.

Air and Water Pumps These pumps are made to ***pump*** and are very carefully constructed to run during a long period without wear. They run off the countershaft at a slow speed, and consequently take all unnecessary and unequal strains from the engine. The air pump is thrown in and out of action by a positive clutch prolonging its life, while the water pump has the customary by-pass.

Water Lift Water may be raised from a pond or well to fill tank by our lift without alighting from car.

Brakes Two internal expanding hub brakes are supplied of improved design.

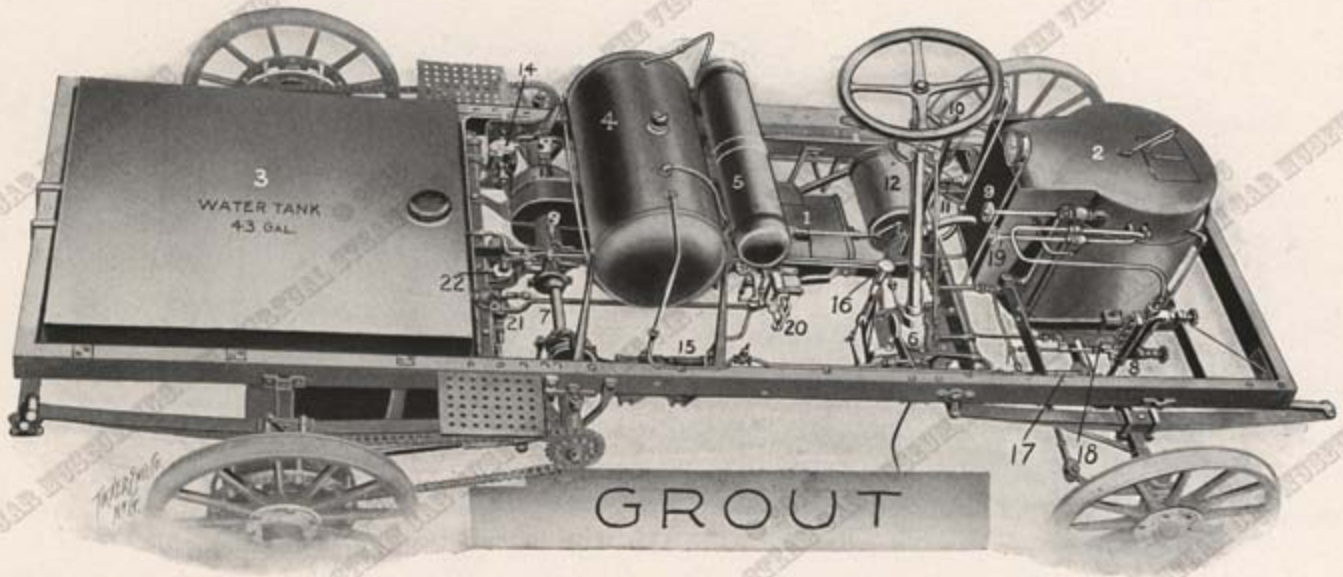
Wheels Special attention has been paid to equip wheels with the very best ball bearings that can be made anywhere. The hubs are strong and of neat design. 30 x 3½ artillery type.

Forced Draft An automatic forced draft of simple but positive construction is employed. By the use of this method of conducting burnt gases from boiler, all fumes that might arise from burner are carried clear of the car at the rear.

Freezing By a special anti-freezing arrangement it is impossible to freeze up anything in the car even during zero weather, whether standing or running.

Mud Guards Wide mud guards in connection with running board protect car completely from front to rear.

All checks, unions, fittings and piping are designed by us and constructed specially for high pressure steam.



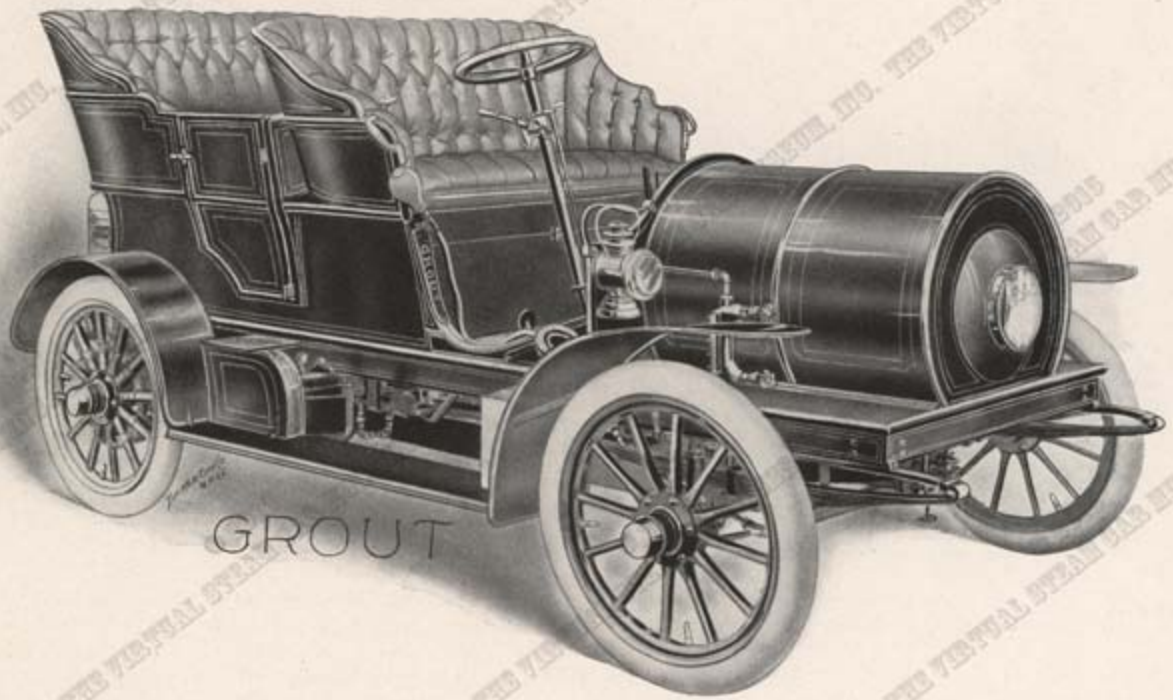
1 Engine in aluminum case
2 Boiler
3 Water tank, 43 gallons
4 Gasoline tank, 15 gallons
5 Air tank
6 Steering check
7 Countershaft
8 Klinger gauge with shut-off
9 Auxiliary throttle
10 Reverse lever
11 Balanced throttle
12 Muffler
13 Compensating gear
14 Force feed oiler
15 Power air pump
16 Air pump control
17 Automatic fire regulator
18 Cast burner, one piece
19 Forced draft
20 Hand water pump
21 Ejector
22 Power water pump

Specifications

Capacity	5 passengers.
Wheel-Base	88 inches.
Tread	56 inches.
Frame	Armored type.
Springs	Semi-elliptical—42″ 5-leaf.
Wheels	30″ wood artillery.
Tires	3½″ double tube.
Engine	12 H. P. in aluminum crank case.
Boiler	18″ copper, wire wound.
Brakes	Internal expanding hub.
Pumps	Power water and air, and hand water pump.
Steering Gear	Wheel irreversible.
Differential	Spur gear on countershaft.
Transmission	Side chains.
Gasoline Capacity	15 gallons.
Water Capacity	45 gallons.

Equipment Full set tools in separate tool box on running board. Acetyline Head and water glass lamps and generator. Two oil side lamps, all brass. Horn and flexible tube, extra parts. Tire repairing outfit.

Price $1500.00, F. O. B., Orange, Mass.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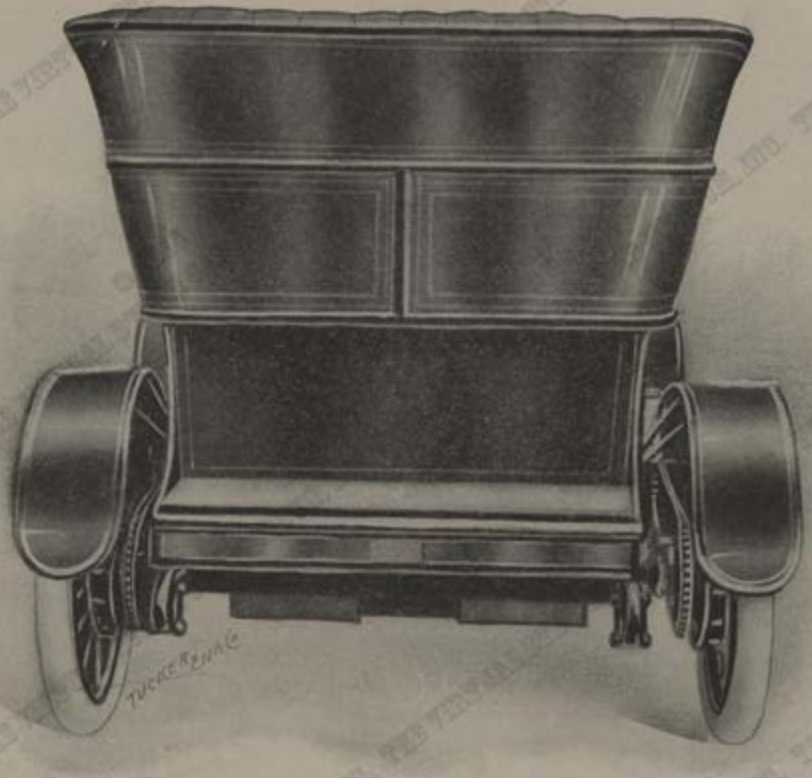

WHEN ONE DOES NOT PASS A GROUT