

Plan view of the Stanley steamer

## The Future of the Steam Car

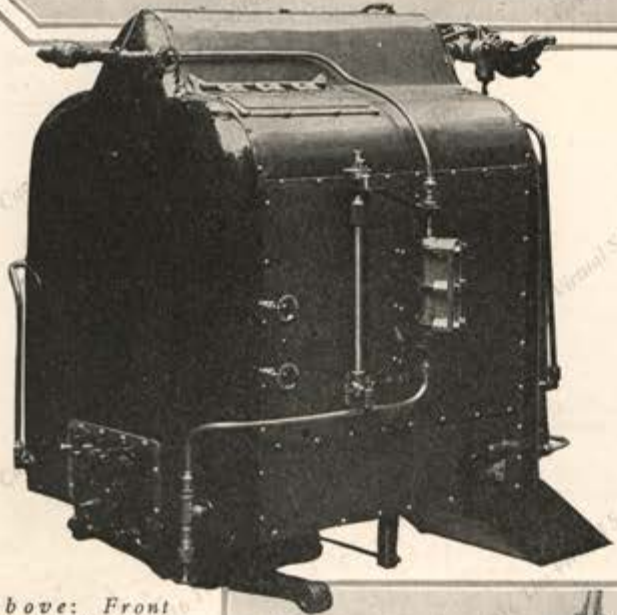
*Boiler Development Stands in the Way of General Acceptance of the Steamer*

ANYONE who has attended the automobile shows for the last two years has noticed the crowds which have always surrounded the booths of the steam cars. Lecturers have been employed by some of the steam car companies to expound to the interested throngs the theory of the steam engine. Those who have followed automobiles for years will recall in the early days of hill climbing contests how the steam cars used to walk away year after year with the hill climbing events until it was finally necessary to bar the steam car from competition in hill climbing as the races were too one-sided. Even today it is a fact that Barney Oldfield or Ralph DePalma in the best of our internal explosion gasoline type of vehicle would

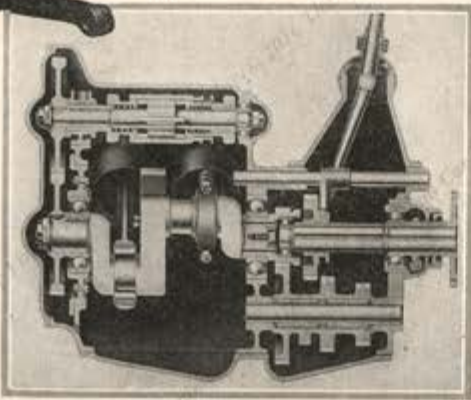
have little chance against an amateur driver and a steam car up a steep hill. The ability to generate terrific torque for instantaneous applications puts the steam car in a class by itself for acceleration and hill climbing. These qualities are much in demand by the American motorist. Will the steam car some day in the near future come into its own and at a cost within the reach of the average pocketbook, put into the hands of the driver this tremendous acceleration and hill climbing ability without the disadvantages which have blocked the progress of the steam car to such an extent that the internal combustion engine driven vehicle has far outstripped it in the race of supremacy? There was a time back in the early days when the two were neck and neck. It was a question as to which would be the eventual car, the steam car or the internal combustion type... Is this question going to come to the front again? Are we on the eve of some important developments in steam car construction which will make it possible to market the steam car in competition with the present types of gasoline cars with some hope of success?

One of the great objections to the early types of steam cars, was the necessity of frequent replenishment of their water supply. In the present day steam cars this trouble has been eliminated by effective condensing systems, which keep the water supply intact for periods ranging from 200 miles to 1,000. Furthermore improvements in this respect are being made all the time so that operational care of the steamer is no more difficult than that of the gasoline driven vehicle.

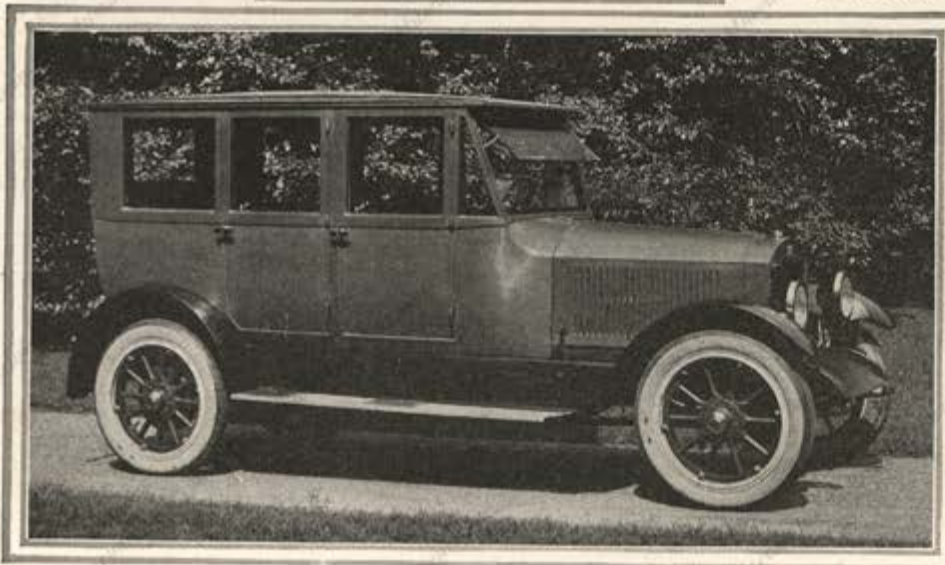
The next popular objection to the steam car has centered around the real or supposed great danger inherent in that type of vehicle. This condition has been entirely obviated by automatic protective equipment, which has removed the sources of danger. The most certain proof of this is found in the fact that insurance rates on modern steamers are exactly the same as for similar protection extended to the gas car. It must be remembered that in most modern steamers, kerosene or even fuel



Above: Front view of the boiler and burner unit of the Gearless steam car



Right: Sectional view steam engine and gear transmission as used in the Coats



A modern steam car of the sedan type showing car resemblance



Left: Controls of the Gearless Steamer.

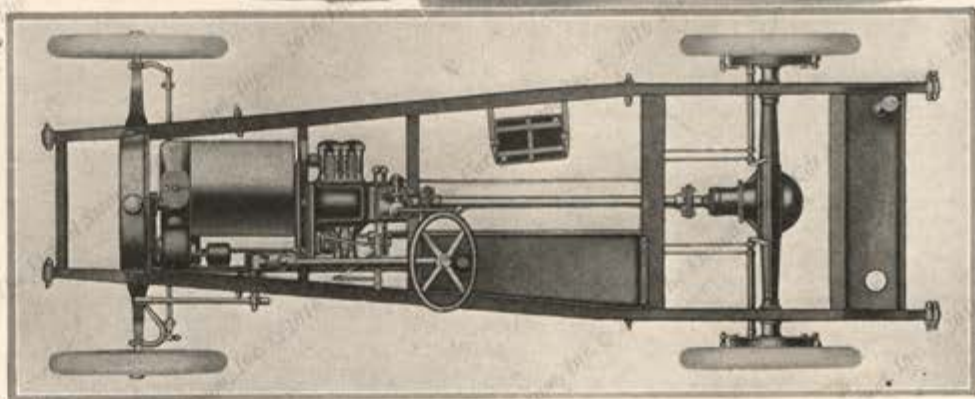
oil, a still heavier product of petroleum is employed. These fuels are less inflammable than gasoline, so that the objection on the score of danger, like that with regard to the low mileage on water, may be considered to be a thing of the past in properly designed steam cars, and the sweeping away of these big objections is what has brought us to the point of where we can again open the question of whether or not the steam car will some day come into its own and be as common on the streets of our cities as the gasoline car of the present day.

Whether this will ever be true or not seems to be wrapped up in the question of boiler design. To design a boiler which will produce steam quickly enough and at pressures sufficiently high to give the desired performance is one of the most difficult problems, that engineers have ever had to consider. In order to develop the steam rapidly, the water in the boiler has to be spread out thinly over a great area. Tremendous heat has to be employed and this condition is one which lends itself very readily to the burning out of boiler tubes if proper precautions are not taken to keep the tubes clean or to keep them full of water. Scores of inventors are now at work on boiler designs which will fill all of the requirements, and yet, will not have the objection of burned out tubes. Inventions are also under way to render the boiler more accessible, so that if a unit of any kind needs replacement that the work will be simple. Once the problems which are involved in the boiler design are solved, the steam car will make tremendous strides.

During the war, the English employed a great many steam trucks for transportation of men and material. These steamers gave a good account of themselves and were very satisfactory from a transportation standpoint. Throughout the mountains of our own country, you will find scores of steam motor buses in daily use, giving fine satisfaction because of their great hill climbing ability and smoothness and quietness of operation. The fact that the average steam two-cylinder steam car has only fifteen moving parts as compared to the great numbers of moving parts on a multi-cylinder gasoline engine is one of the arguments which steam car manufacturers use to great advantage in talks to prospective buyers.

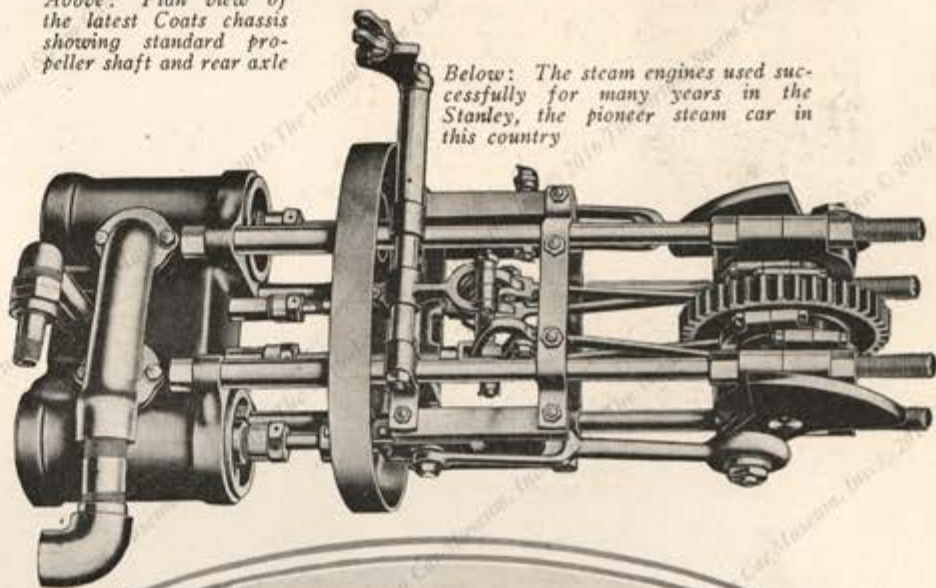
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Right: Announced last year the Coats steam car is being produced for the \$1000 class. It has a number of extremely interesting features.



Above: Plan view of the latest Coats chassis showing standard propeller shaft and rear axle

Below: The steam engines used successfully for many years in the Stanley, the pioneer steam car in this country



The American is a new steam car designed to sell for \$1650

# Road Shocks Can't Get By



Eveready automatic windshield cleaner which uses the vacuum in the intake to operate a wiper arm.

THIS automatic windshield cleaner utilizes the vacuum in the intake manifold, or vacuum tank, the control for the device being in the form of a set screw. Turning the screw sets the wiper arm in motion. The accompanying illustrations show the fundamental units of the device which consists of a vacuum motor of light weight, a wiper arm operated by the motor, and flexible connection from the motor to the other vacuum tank or the intake manifold. Attachment of the vacuum motor to the top of the windshield is easy. As shown in the illustrations the wiper arm operates at a radius sweeping over a wide area. Naturally the cost of operation is nothing since the vacuum in the



manifold is utilized. Price is \$7.50 complete with all necessary fittings.



## ABSORBERS for FORDS

Grey Goose Absorbers appeal to the common sense of all Ford owners. They don't interfere in the least with the normal function of the Ford Springs. Instead they make them much more efficient. They simply take the road shock as it travels toward the car and ripple it away into nothingness. The spring shackles float in and out gently, while the overhanging goose neck shape of the 3 leaves of spring steel make rebound impossible. The springs are saved from severe strain. Breakage is lessened and the passengers find practically the same riding sensation and spring action whether the road is rough or smooth.

### They Look Like A Part of the Car

Grey Goose Absorbers have that "built in" look that you will like. No bulky contraptions that reflect on the car's riding qualities. You can see for yourself how they add inches to the spring suspension—how they give the riding effect of a car with a much longer wheel base. They have no parts to wear out, loosen or rattle. They save both car and tires. They are surprisingly low in price. Dealers—who have a market for Any Absorber for Fords should get the Grey Goose Proposition at once. Write or wire.



Indiana Parts Co.  
DEPT. 2813  
Richmond, Ind.

# GREY GOOSE

ABSORBERS for FORDS

## The Modern Steamer

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When it is considered that in the steam car the clutch and transmission are done away with, some of the advantages which the boiler undoubtedly has are neutralized. On the other hand, however, we have the problems of automatically taking care of all of the complications involved in the handling of steam at a working pressure of 600 pounds per sq. in. This objection, of course, is met by the steam car man with the reply that the pressures at explosions run many times this amount with the internal combustion engine.

On a steam car, it is necessary to have automatic controls which will shut off the fuel when sufficient steam has been generated. This device is called the steam automatic. There must also be another automatic device which regulates the feed water as it enters the boiler, so that the water level in the boiler does not drop as steam is used for driving the car. There must also be automatic air pressure which supplies the fuel to the main burner.

The old objection of requiring a long time to steam up in the morning does not seem to be brought up so much now as it used to be. In cold weather, if the pilot has been turned off for a week, it is possible to start a steam car easily within 10 minutes, and provided the pilot has not been turned off over night, steam will be up sufficiently to get started the next morning regardless of how cold the weather has been during the night. A number of the other minor objections such as cleaning of the burners and the complication of control units are not really as essential as they would seem to be, as actual experience has shown that it does not take very long to learn how to drive a steam car.

Taking all of this into consideration, to answer the question, what is the future of the steam car, is not so simple a task as would appear on the surface. In the first place, it must be remembered that one of the big factors in the sales of automobiles is the ability to secure service from properly equipped service stations. The automobile industry as represented by the internal combustion type of car has millions of dollars

invested in service stations all over the country with thousands of men who have become expert in handling the problems which arise in connection with the servicing of these cars. To these men the steam car is a mystery which they would hesitate to encounter. While it may be true that in the average case the repairs could be taken care of by the ordinary plumber, if he only knew where to look for the trouble, it must be remembered that for the average garage mechanic to attempt to diagnose trouble in a steam car would be a very difficult affair. He would not know where to start, while the average boy of 14 is more or less familiar with the troubles and the diagnosis of troubles on an internal combustion engine.

Even if the steam car were markedly superior to the gasoline internal combustion car in all particulars, it would take 10 years to overcome this problem of servicing.

Another difficulty is that in order to properly maintain steam pressures and heat, it is necessary to carefully build and insulate the boiler. This costs money. The \$1500 successful steam car has not as yet been produced, and while it may be here three years from now, it has not as yet made its appearance. When it does, a big stride toward the establishment of the future of the steam car will have been made.

Tremendous steps in boiler construction have been made and the steam car has been cleaned up insofar as its plumbing or piping is concerned to a marked degree. For a long time, the other chassis details of the steam car lagged behind the chassis improvements in the gasoline vehicles. Even the bodies were not up to the gasoline car in appearance. All of this has been changed so that a steam car is now just as easy to drive and just as good to look upon as the internal combustion type, but we must have boilers which are infallible and which stand up for several years without repairs and replacements, and we must have accessibility of the units. When properly equipped service stations, all of this comes, there are going to be many more people driving steam cars than one would ordinarily suppose at the present time.