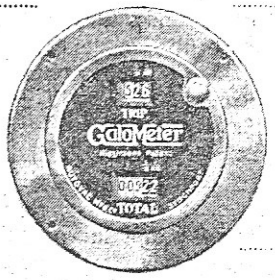
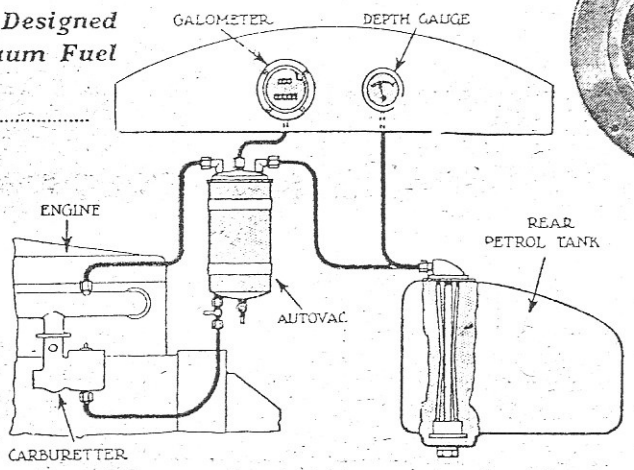
REGISTERING CONSUMPTION.

The Galometer—an Instrument Designed for Use with the Autovac Vacuum Fuel Tank.



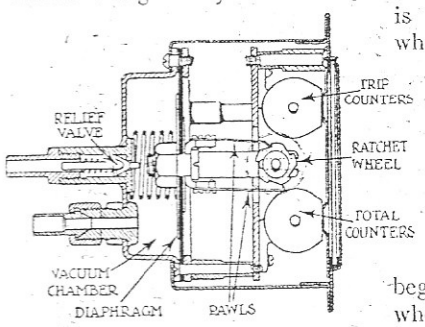


(Above) The indicating dial of the Galometer, which fits flush on the dashboard.

(Left) The complete fuel system shown diagrammatically. A gauge, showing the tank contents also, may be employed.

AN instrument which will record the fuel consumed in a manner which can quickly and easily be read off by the driver has long been wanted. Such a device, known as the Galometer, has now been introduced by the Autovac Manufacturing Co., Ltd., Heaton Norris, Stockport, for use in conjunction with a special type Autovac vacuum feed tank.

Designed to fit flush into the instrument board, the Galometer shows two rows of figures similar to the mileage recording figures of a speedometer. The total amount of fuel which has passed through the Autovac is given by the lower scale, while the upper scale is a trip reading, which can be set at the beginning of a run when the trip mileage of the speedometer is set. Thus the average consumption in miles per gallon for the journey can easily be ascertained by dividing the distance in miles and fractions by the fuel used in gallons and fractions. For example, if 5.5 gallons are used during a journey of 100 miles, then the mileage per gallon is 18.18.



In this sectional view of the Galometer, the construction and method of operation are made clear.

Apart from this, however, the Galometer is useful, as it enables the owner-driver to keep a constant check on his fuel bill, and any sudden increase in petrol consumption due to leakage, or any defect which impairs the efficiency of the engine or car, is immediately made apparent.

How It Operates.

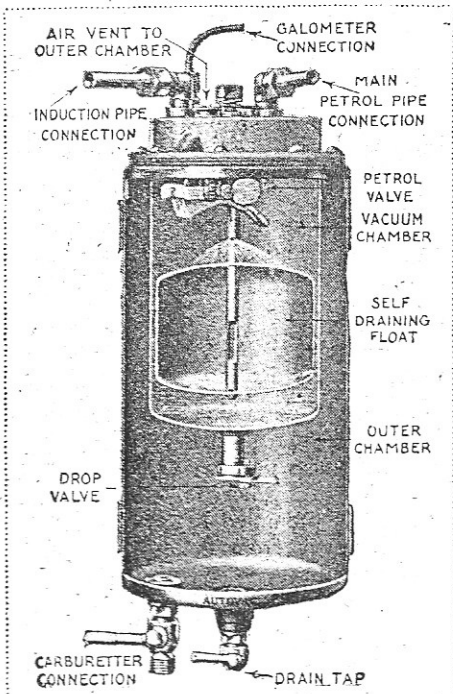
The instrument is connected by a small bore pipe to the vacuum chamber of the Autovac, and it operates on the principle of recording the quantity of fuel drawn from the main reservoir at each operation of the feed tank. In order to make this clear, it may be well to review the manner in which the Autovac tank itself works. Briefly, it is divided into two chambers, the upper of which is connected to the induction manifold and to the main fuel tank, and the lower to the carburetter. The depression in the inlet pipe causes fuel from the main tank to pass into the upper or vacuum chamber, so raising a float, which at a certain point automatically closes the connection to the induction pipe and opens a valve which puts the upper chamber in communication with the atmosphere, so allowing the fuel to flow into the lower chamber, and thence to the carburetter by gravity, since the outer chamber is under atmospheric pressure through the air vent in the top.

With the ordinary type of Autovac it is possible in certain conditions for the amount of petrol taken in by the inner chamber to vary, and therefore, for use with the Galometer, a special type has been designed, in which a measured quantity of fuel is taken in at each operation.

Simplicity the Keynote.

Actually, the mechanism of the Galometer is quite simple, for, as will be seen from the accompanying sectional illustration, the interior of this is divided into two chambers, separated by a diaphragm. The front chamber contains the recording mechanism, and the rear chamber carries the connection for the pipe to the Autovac and a small relief valve, which is opened automatically should the vacuum in this chamber become too great. As the feed tank draws in fuel the diaphragm will move towards the rear of the instrument, compressing, as it does so, the spiral spring in the vacuum chamber. When the Autovac is cut off from the inlet pipe and atmospheric pressure is admitted, the spring in the vacuum chamber returns the diaphragm to the normal position.

By this movement of the diaphragm the recording mechanism is actuated, for two steel pawls attached to it rotate a ratchet wheel,



Section of the Autovac tank, showing the various components and Galometer connection.

Registering Consumption.

which transmits this motion through two small gear wheels to the counters.

It should be observed that the right-hand space on each counter shows a figure and a red shutter alternately, and, should the red shutter show continuously while the engine is running, it indicates that the main tank is empty, or that the petrol pipe is choked. In these circumstances, of course, the engine is running on the last charge of petrol taken in by the feed tank, and it will stop when this small amount of fuel is exhausted.

Finished in dull black, with a nickel-plated bezel, the Galometer has a black-and-white dial and figures, and requires a three-inch hole in the dashboard. The complete set of the recording instrument and the M.A. type Autovac tank, with the necessary unions and connections, is priced at £6 10s., but a conversion set is available for owners of cars already equipped with an Autovac at the reduced price of £5 10s., in which case it is stipulated that the existing feed tank is to be returned to the manufacturers.