(A). The needle is raised by the lever resting on top of floats and which rises when the correct level of fuel in chamber is reached. When engine is running the fuel is drawn through hole (B) in jet body, then passes through adjustable jet (C) and up the centre-piece in the form of a spray to mix with the incoming air.

A compensating device to provide correct mixture strength at all throttle openings is provided by means of the offset hole (D) in the centrepiece, which allows air to enter just above the submerged jet orifice. This hole communicates with the atmosphere through the compensating tube (E) and the size of the hole in the centrepiece determines the amount of correction provided, and assists in atomising the fuel. It is most important that this hole is not obstructed by paint or dirt. The tube (E) also prevents rotation of the centrepiece and must not be omitted.

The mixture strength is controlled by the jet in the bottom of the centrepiece which is adjustable in size of orifice by the taper needle. The needle is accessible after the cap nut has been removed, a slot in end of nut being provided for use of screwdriver or coin. After adjusting needle re-tighten the locknut. A very small part of a turn of the needle will make an appreciable difference to strength of the mixture and consequently as the carburetter is correctly set at the Works for the fuel quality available, only slight correction therefore should be necessary to cover such variations in climatic conditions and fuel quality as may occur in other countries. The above remarks do not apply to engines running on paraffin (kerosene).

(33) CARBURETTER SETTING VILLIERS TYPE " V "

The only adjustments provided are the throttle adjusting screw which only affects the idling position of the throttle plate, and the jet adjustment screw which affects the mixture strength. Adjusting this screw upwards, that is, clockwise, looking at the outer end of the needle, weakens the mixture, and unscrewing it, that is in an anti-clockwise direction, will enrichen it.

Erratic governing at no load can be caused by a slightly weak mixture which may be cured by unscrewing the needle about one sixth of a turn. If the compensating tube is restricted by dust, this will increase the mixture strength and attention should be given to this point if it is suspected that fuel consumption is excessive.

Some carburetters are fitted with a damper consisting of small wheel on the governor spindle, having a light adjustable spring to provide a small amount of damping to the throttle. Only very light pressure, if any, is needed.

Certain engines are fitted with a slightly different type of carburetter, fitted with a pilot jet. This carburetter is not fitted with an adjustable main jet, but a small adjusting screw with locknut is fitted on the side of the carburetter body for adjustment of the pilot jet. Unscrewing will weaken the mixture and vice versa. Only quite small alterations to the position as set at the Works will be necessary. These carburetters are mainly fitted to the kerosene engines.

High altitudes will affect the mixture strength as well as the power output of the engine and a weaker jet setting than at sea level will be required to compensate for the reduced atmospheric pressure.

(34) TO ADJUST CARBURETTER

If the original setting has been disturbed, proceed as follows:—

Completely close the needle valve by hand by turning clockwise, as far as possible, after the lock-nut has been slackened. Do not use force, or the needle valve may be damaged.

Then, open the needle valve between two and two-and-a-half complete turns. Final adjustment should be made with the engine on full load when the engine is warm, by turning the needle valve to the position at which the engine operates most smoothly.

(35) TO CLEAN CARBURETTER

The cap nut, covering the needle valve, should be removed by means of a coin fitted into the slot at the bottom end, and the hexagon nut unscrewed.

The float chamber can then be dropped away, exposing the float. Any sediment which accummulates is found in the bottom of the float chamber. This should be cleaned away, and the float replaced, making certain that the fibre washer is fitted between the float chamber and the hexagon nut. Then replace the cap nut and fibre washer.

A filter is fitted around the bolt which secures the " banjo " on the end of the petrol pipe to the carburetter body and the bolt should, therefore, be removed at intervals and