keep a running temperature of between 180 and 200° F. They are carried in clamps on each side of the outside of the machine, when not in use.

Section 5.—PETROL SYSTEM. (Plate 2.)

(1) *Tanks.* Petrol is carried in two lead-coated sheet steel tanks, one being situated on each side of the engine. The capacity of each tank is 21 gals. (42 gals. in all). Drain plugs are fitted underneath the tanks and an aperture is cut in the hull plate to allow them to be removed when necessary. Each petrol tank is in a separate compartment in the machine. Underneath these, two slots are cut in the hull floor plate on each side to allow petrol which overflows to escape. There is no connection between these compartments and the engine compartment.

(2) *Petrol level valves* (Plate 3). On the side of each tank is positioned a junction box which contains the petrol supply valve. This has three unions, the centre being connected by a pipe to the petrol tap. The two outside unions are connected to pipes which draw from the two ends of the tank, near the bottom. The front pipe goes to the rear end and the rear pipe to the front end of the tank.

When the machine is level, petrol is sucked up by both pipes and can pass to the main feed line if the tap is open. When the machine is climbing a hill, the weighted rocker swings to the rear and the cork pad on the rearmost arm closes the entry to the rear pipe, thus stopping any feed from the front end of the tank. Similarly, on descending a hill, the feed from the rear end of the tank is closed. In this way, the petrol is always drawn from the lowest end of the tank and air cannot be sucked in.

(3) *The tap* is controlled by a flexible cable operated by the driver on his off side and has three positions: OFF, NEARSIDE tank, and OFFSIDE tank.

From the tap, the fuel is drawn along the single main supply line to the filter, pump and carburettor.

(4) *The filter* is of the metal disc type and can be cleaned by rotating a handle. This turns the discs past stationary scraper fins, the dirt falling into a sediment bowl which can be removed for cleaning. Directions for cleaning the filter are given in Section 15.

(5) *The petrol pump* (Plate 4) is a mechanically operated type, of Ford manufacture. It is situated at the rear end of the engine and driven from an eccentric on the camshaft by a vertical rod. The action of the rod causes the rocker arm to rock and impart a pulsating motion to the diaphram. This sucks petrol through the non-return valve and pumps it through another valve to the carburettor. When the float chamber is full, the pressure is sufficient to prevent the diaphram working until petrol is again needed to keep the level in the float chamber correct.

(iv) Fit the anchor arm pin and turn over its end, having previously lined up the holes by inserting a punch.

(v) Connect up in the following order: operating arm rods, rear and front—brake shoe spring—spring clip.

Then connect up the brake and clutch operating, in that order.

(vi) Apply the steering lever gradually and check that each shoe comes on with equal force. If necessary, adjust the shoes.

When correct, fit each operating lever pin with its washer and a new split pin. Check that there is no risk of the ends of the pins fouling.

(vii) Replace the straps on the gear housing and the off-side steering lever stop, if removed.

Replace or close the access doors.

Test on a trial run.

Section 28.—Gear Selector Rods—Adjustment

It is important to ensure that all the gear pinions are in correct mesh. To check this after fitting an engine and gear-box assembly, remove the gear-box cover plate complete with gear lever, after first having engaged a gear. Note if full engagement of the pinions has taken place. Replace the cover and check in other gears in a similar manner.

There is no adjustment provided, so that, if any gears are not engaging fully, the arms of the " T " piece on the gear lever must be heated and " set " the necessary amount. If this cannot easily be done, the gear operating rod (which runs along the floor plate to the front of the machine) may have a right-angle bend in it and this angle may be re-set if necessary. If only a small alteration is required, this can be done cold.

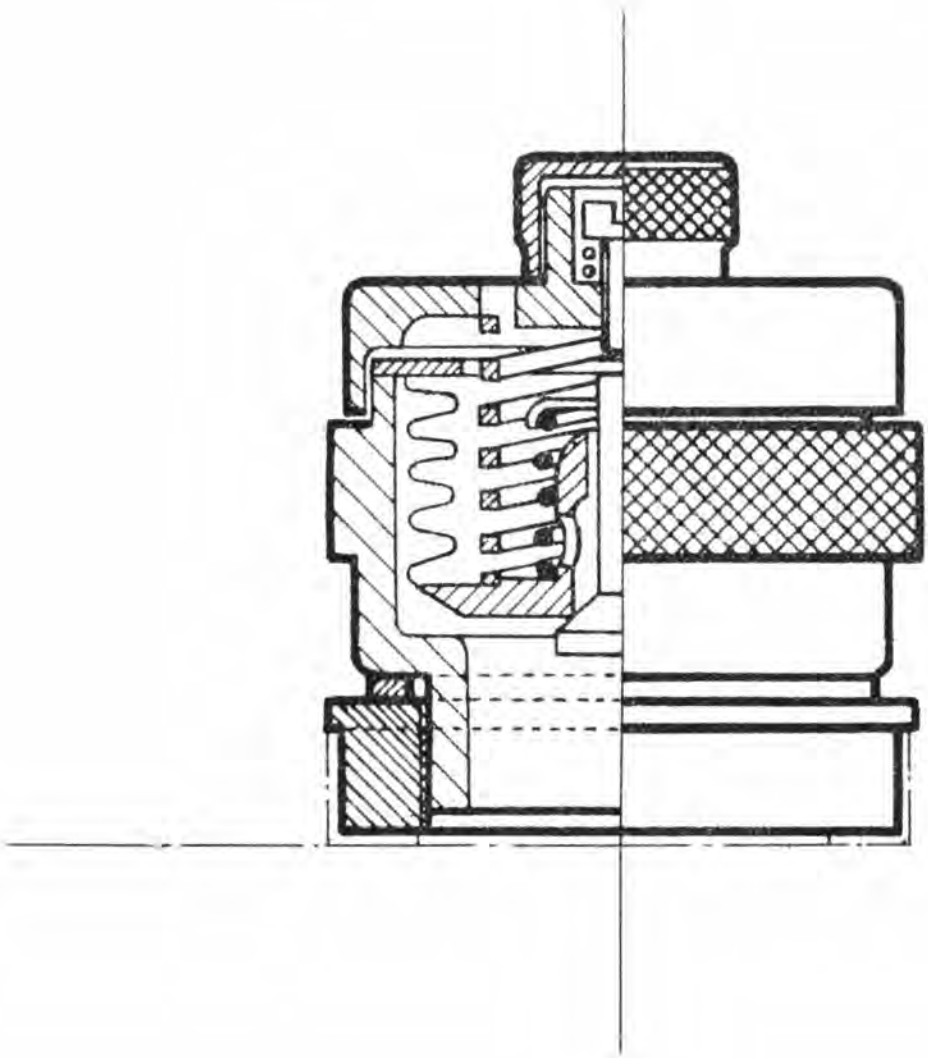
Section 29.—Track—Adjustment, Removal and Replacement

(1) *To check for correct tension.* Run tank on level ground and stop without swinging or using brakes. Leave three yards clear in front of machine. If track is in correct adjustment, there should be a sag, when clean, of about 2–3 in. in the top run of the track between the rollers, with no appreciable slack below the sprocket or idler wheel. (Note.—If the track is dirty, the adjustment should be slightly tighter than this, but it should NEVER be run board hard, i.e. without any slack between top rollers.)

(2) *To adjust.* Slack off the lock-nut and loosen the set screw ($\frac{7}{16}$-in. spanner) sufficiently to allow the pawl to disengage. Fit the track adjusting lever on to the spigot on the track adjuster bracket.

TANK, INFANTRY, MARK I.

RADIATOR PRESSURE VALVE.



TANK, INFANTRY, MARK I

Plate 12.

TOP ROLLER.