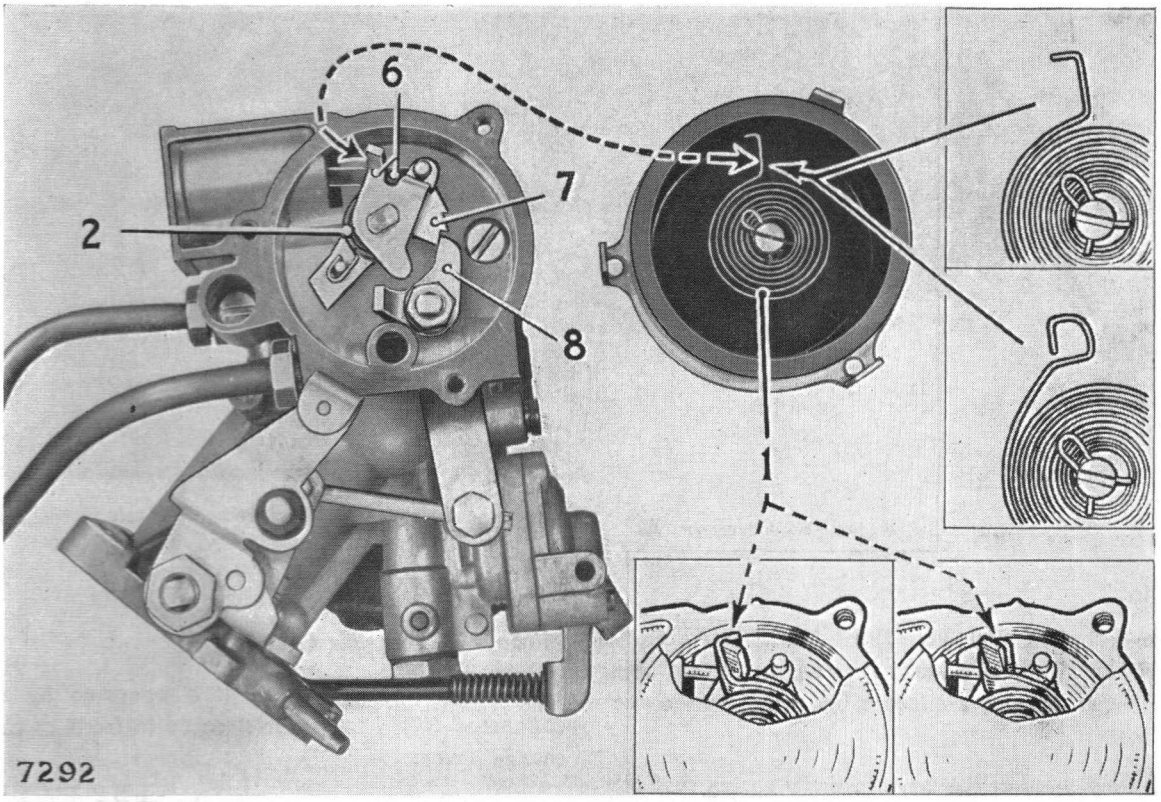

Fig. 6. *Automatic choke—various parts with reference numbers as Fig. 5—insets show bi-metal spring differences*

Automatic choke (See Figs. 5 and 6)

When the engine is cold a bi-metal "clock spring" (1), also shown in Fig. 6, closes the choke (strangler) valve (12). Another smaller bi-metal "clock spring" (2) rotates a stepped cam (7) to give the throttle (36) a suitable fast idle setting for cold starting.

The stepped cam (7), mentioned in the previous paragraph, can only give the correct throttle opening for cold starting AFTER THE ACCELERATOR PEDAL HAS BEEN FULLY DEPRESSED ONCE.

Directly the engine starts a small "vacuum kick" piston (4) opens the choke valve, against the closing torque imposed by the cold bi-metal spring (1), far enough to prevent over rich running. The vacuum feed to the vacuum kick piston (4) is through the passage way (3).

After the engine starts, inlet manifold depression draws air through the copper pipe (15) and the "U" tube (10) situated in the exhaust manifold (11). This air is heated by the hot exhaust gas passing over the "U" tube. It passes through the copper tube (9) into the compartment in which the two bi-metal springs are situated and then through a small hole in the vacuum kick piston crown (4) into the inlet manifold through the passage (3).

The heated air warms up the bi-metal springs (1) and (2) causing them to rotate and allow:—

(*a*) The vacuum kick piston (4) to open the choke valve (12) gradually to its full open position.

(*b*) The stepped cam (7) to move into a position that allows the throttle to return to the normal idling position from the fast idling position, after the throttle has been opened.

Fig. 7 shows the "U" tube (10) removed from the exhaust manifold and connected to the carburettor by the two copper pipes (15) and (9).

If the accelerator pedal is pressed half way down or beyond while the choke valve is closed, or only partly open, an internal lever (8) moves the lever (6) to open