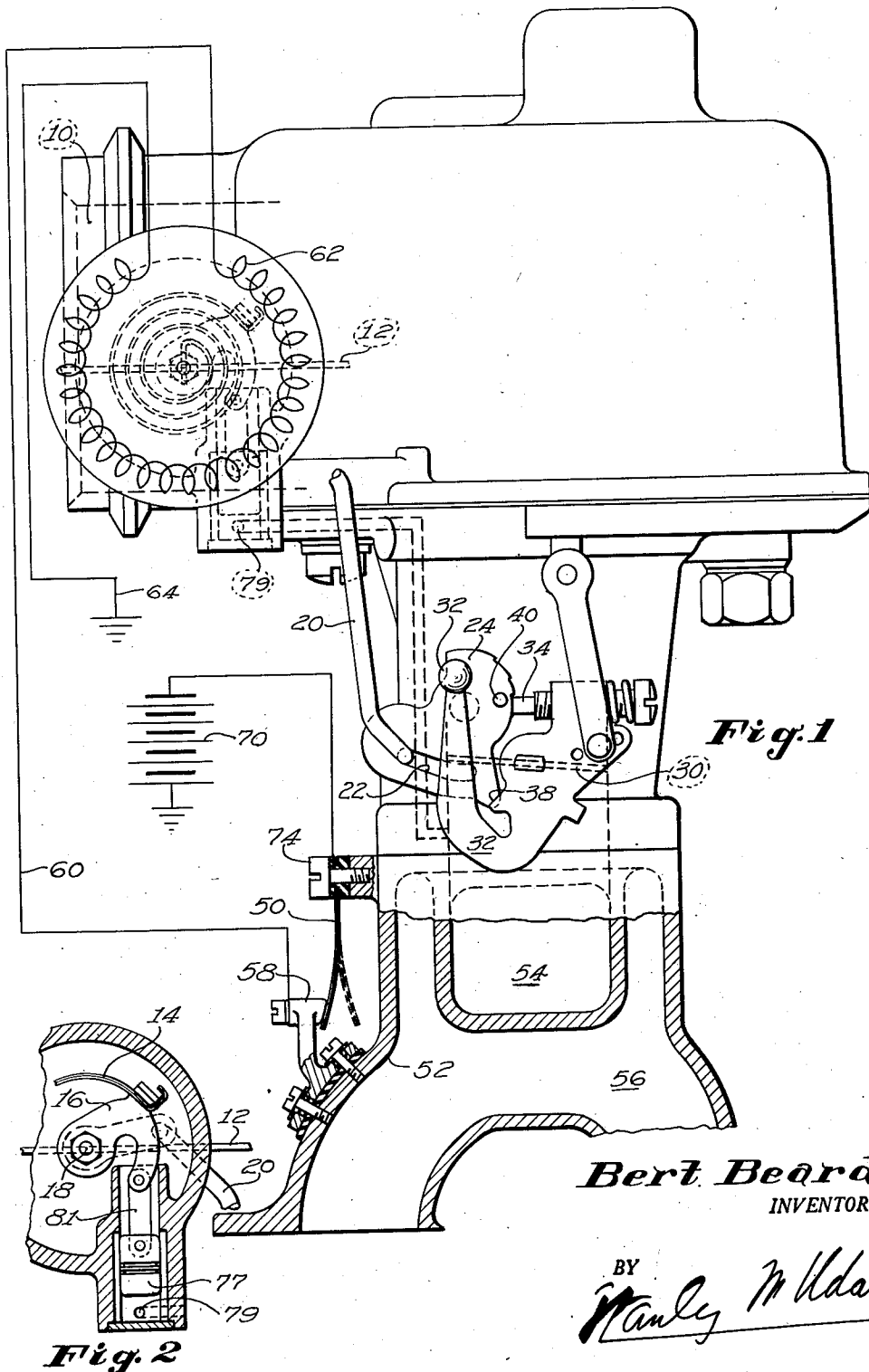


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B. BEARD
AUTOMATIC CHOKE
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AUTOMATIC CHOKE

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2 Claims. (Cl. 123—119)

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The object of this invention is to improve the operation of the ordinary automatic choke now in general use so that when used with an automatic transmission, now also in general use, the tendency to "creep" at idle will be reduced.

After an engine has started and the car has been driven a few hundred feet there is a marked tendency for the engine to remain in fast idle although the inlet manifold is warm enough to justify normal idle speed. This extra high idle speed causes the car to move forward or creep.

My solution for this problem is to apply heat to the heat responsive element which controls the choke. The heat is supplied from the storage battery of the car. A heating coil is arranged adjacent to the heat responsive element which controls the choke and a second heat responsive element is mounted on the inlet manifold and is arranged to control the heating circuit so that whenever the inlet manifold is hot the choke valve is open even if the air entering the carburetor is comparatively cold.

Fig. 1 shows the general arrangement of the preferred form of my invention.

Fig. 2 shows a detail of the ordinary automatic choke now in general use.

In the figures 10 is the air entrance, 12 is the eccentric choke valve mounted therein so that it is blown open clockwise by the stream of air entering at air entrance 10. 14 is a coil type thermostat which yieldably holds the choke valve 12 in its closed position when cold. 16 is the bell crank lever mounted on the shaft 18 on which the choke valve 12 is also mounted. A link 20 is connected to the shaft 18 and is also connected to a slot 22 in the fast idle cam 24.

In the position shown, that is, the warm position (slow idle), the link 20 permits the fast idle cam to rotate counter-clockwise into the slow idle position in which it is shown. When thermostat 14 closes the choke valve 12 counter-clockwise link 20 is drawn up and to the left and rotates the fast idle cam clockwise so that when the throttle lever 32 is moved counter-clockwise to close the throttle 30 the adjustable stop 34 engages with the fast idle portion of the fast idle cam 24 in a well known manner.

When the throttle is opened wide a projection 38 of the lever 32 engages with a pin 40 in the fast idle cam. The left hand end of the slot 22 then engages with the lower hand end of the link 20 so that the choke valve 12 is moved towards its open

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position in the event that it is held in its closed position by the thermostat 14. All of the above is very well known. The new feature of this invention includes the following elements:

50 is the heat responsive element mounted on a manifold 52. 54 is the inlet passage for the mixture. 56 is the exhaust jacket surrounding the inlet passage 54. An insulated stop 58 is connected through a wire 60 to a heating coil 62, to a ground 64. A battery 70 is connected through a cap screw 74 to the heat responsive element 50. 77 is a piston connected through the passage 79 with the inlet below the throttle 30. The link 81 connects the piston 77 to the bell crank lever 16.

Operation.

When the engine is cold the heat responsive element 50 is in the position shown in broken lines. When the exhaust in the passage 56 heats up the manifold 52, heat responsive element 50 deflects clockwise and engages insulated contact 58. Current then flows through the heating coil 62. The thermostat 14 then uncoils and the choke 12 is free to respond to the air flow and to the suction in passage 79 so as to move towards the open position. Hence, once the engine is warm the choke is off even if the entering air is cool. Whenever the choke 12 is open the idle is normal as the low speed cam 24 is permitted to drop by gravity into the position shown.

What I claim is:

1. Control means for an automatic choke valve having a first heat responsive element located adjacent the air inlet to a carburetor mounted on an exhaust heated inlet manifold of an internal combustion engine, comprising a second heat responsive element located adjacent said exhaust heated inlet manifold, an electric circuit, a heat unit therein located adjacent said first heat responsive element, an electric switch controlled by said second heat responsive element and adapted to apply heat through said heating unit to said first heat responsive element whenever the exhaust heated inlet manifold exceeds a predetermined temperature.

2. A device as set forth in claim 1 in which the carburetor has a throttle and a variable idle stop controlled by said first heat responsive element.

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No references cited.