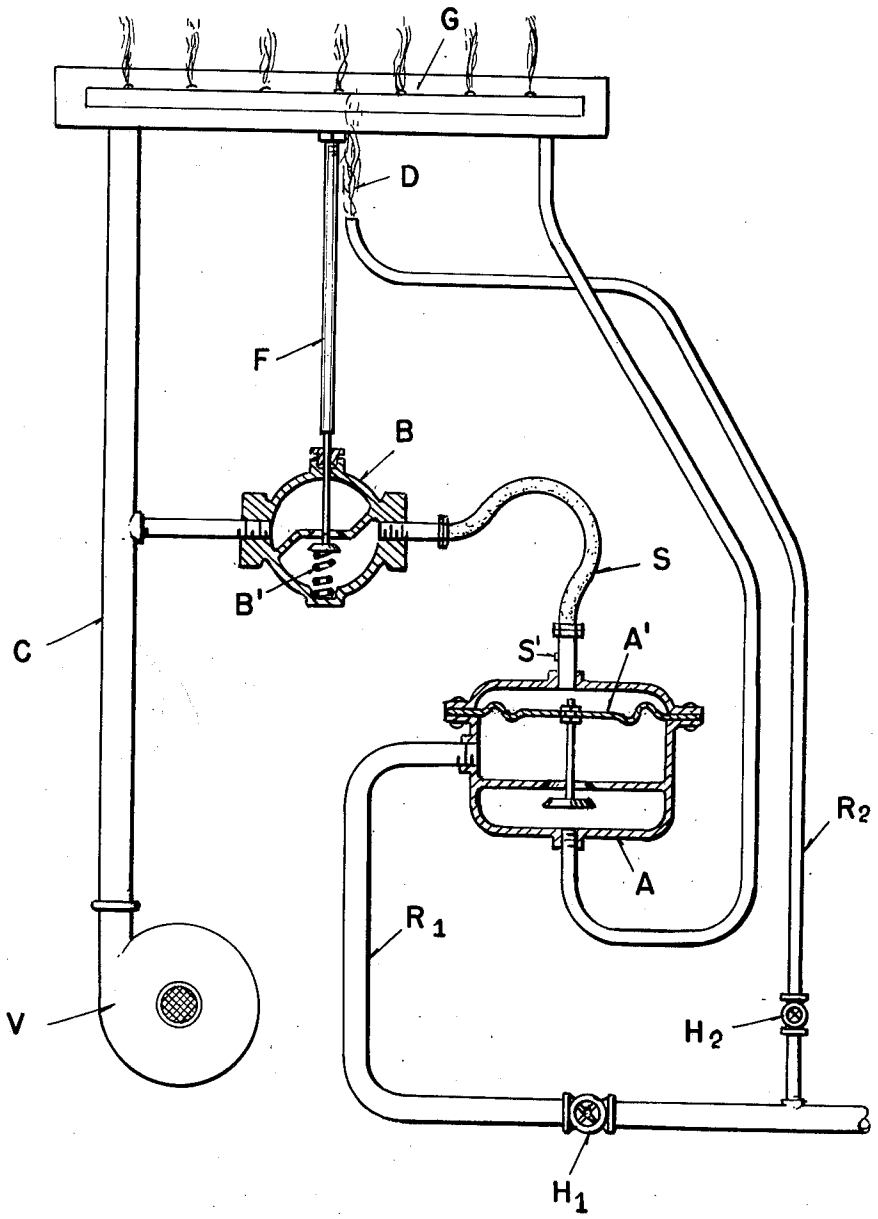
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SAFETY CUTOFF SYSTEM FOR GAS BURNERS RESPONSIVE TO AIR PRESSURE AND THERMOSTATIC CONTROL

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SAFETY CUTOFF SYSTEM FOR GAS BURNERS RESPONSIVE TO AIR PRESSURE AND THERMOSTATIC CONTROL

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1 Claim. (Cl. 158—141)

1

The present invention concerns a burner for a mixture of gas and compressed air by which the flow of the gas is automatically controlled by the flow of the air.

The drawing shows the parts in operating positions.

The compressed air for a gas burner G is supplied to a gas valve A which is closed by the pressure of the gas. A compressed air pipe C from a fan V to the gas burner G has a branch pipe S, with a bleed opening S', to the valve A which has a membrane A' which is depressed by the air pressure so that the valve A is opened and the gas in a pipe line R_1 can flow to burner G since the pressure of the air is made to exceed the pressure of the gas.

From this it will be seen that in case the compressed air fails no gas will be admitted to the burner G.

When compressed air and gas are admitted to the burner G the mixture should be ignited at once by the burning pilot flame D which is supplied with gas independent of the valve A through a pipe line R_2.

To effect this result there is inserted in pipe S a valve B which, when its thermostatic element F is expanded by heat of flame D, keeps the valve B open. When the element F contracts because the pilot flame D for some reason has been extinguished the valve B is closed by its spring B–I thus shutting off the compressed air from the valve A.

In this way no gas will be admitted to the gas burner G if the pilot flame D is not burning.

Manually operated cut-off valves H_1 and H_2 are fitted to the pipe lines R_1 and R_2 to control operation.

I claim:

In a device for controlling the supply of combustible gas to a burner by thermostatically-controlled air pressure, the combination of a conduit adapted to lead to a burner for supplying gas under super-atmospheric pressure; a valve in said conduit; means including a flexible membrane subjected on one side to said gas pressure in said conduit and on which said valve is mounted; means forming a chamber sealed from said conduit by said membrane; a second conduit leading to said chamber; means for supplying air under pressure superior to said gas pressure to the burner for combustion, means for diverting a portion of said air to said second conduit to flex said membrane to open said valve; a second valve in said second conduit biased to close said second conduit; means to supply a pilot flame for the burner; and a thermostatic element coacting with said second biased valve and disposed adjacent said flame-supplying means, expansible by heat from said flame to open said second biased valve.

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2

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