

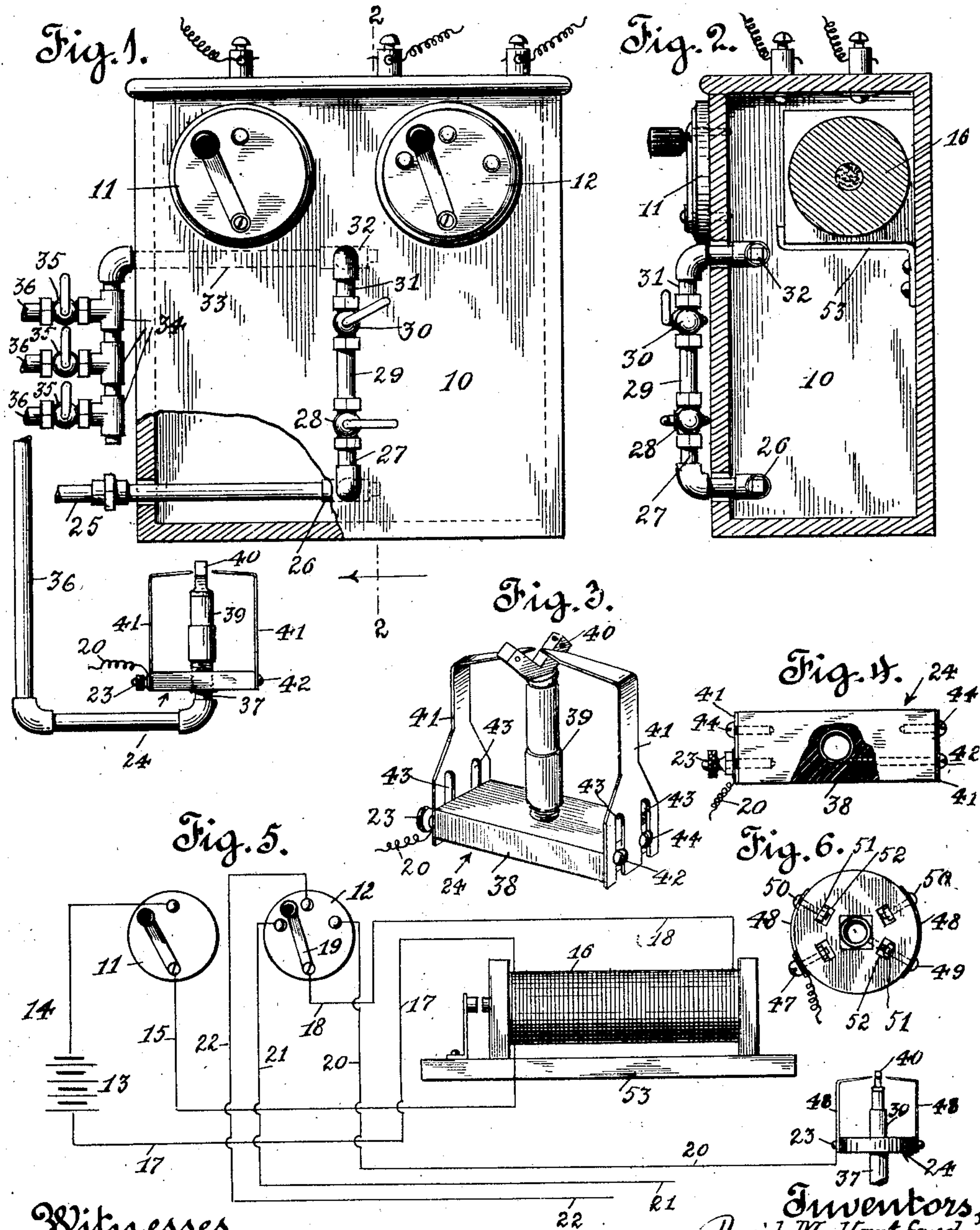
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ELECTRIC GAS LIGHTING APPARATUS.

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Patented May 31, 1910.



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# UNITED STATES PATENT OFFICE.

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## ELECTRIC GAS-LIGHTING APPARATUS.

959,525.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed April 26, 1909. Serial No. 492,188.

*To all whom it may concern:*

Be it known that we, DAVID M. HARTFORD, CARLETON M. TAYLOR, and LEWIS S. STONE, all citizens of the United States, residing in the city and county of Los Angeles and State of California, have invented new and useful Improvements in Electric Gas-Lighting Apparatus, of which the following is a specification.

Our invention relates to that class of devices which are devised especially for lighting gas by means of a jump spark, and relates more especially to the lighting of gas burners or lamps on vehicles provided with a portable gas system, such as automobiles, railway cars and the like, wherein the whole vehicle is subjected to more or less vibration.

In many electric gas lighting systems, commonly in use, the gas is turned on automatically by means of solenoids or other contrivances, which are more or less cumbersome, delicate in operation, and very prone to get out of order. In all attempts to apply these systems to automobiles, or other vehicles, which are subjected to vibration, it has been found that the apparatus soon becomes deranged and fails to operate, necessitating the getting out of the vehicle and lighting the lamps by hand, which is often very inconvenient, especially in a storm, and subjects the operator to much annoyance.

It is one of the objects of our invention to overcome this objectionable feature.

Another object of our invention is to provide a burner base of fibrous or other non-conducting material, provided with adjustable contact points, which will be capable of application to standard burner connections.

Still another object of our invention is to provide a system of piping and valve control therefor, which will be adapted to be mounted upon the cabinet containing the switch mechanism, so that the control of the gas can be readily made by the operator simultaneously with the lighting thereof,

and without his having to leave his position in the car.

Yet another object of our invention is to provide the piping mechanism and its control on the cabinet with shunts or by-passes so that should one or more lamps be placed out of commission, the gas supply thereto can be cut off while still retaining the other lamp, or lamps, in service.

We accomplish these objects by means of the device described herein and shown in the accompanying drawings, in which:—

Figure 1 represents a front elevation of our lighting cabinet with parts broken away to show the gas pipe connections. Fig. 2 is a section on the line 2—2 of Fig. 1 looking in the direction of the arrow. Fig. 3 is a detail perspective of our improved sparking device. Fig. 4 is a view of the under side of our burner, partly broken away to show how the grounding is made. Fig. 5 is a diagram showing the battery, switches, coil and burner. Fig. 6 is a bottom view of a modified form of burner-base.

Referring now to the drawings more specifically, 10 indicates our improved cabinet, upon the outer surface of which are mounted the switches 11 and 12 which are employed to control the currents flowing from battery 13 and sparking coil 16. The battery 13 is connected with switch 11 by means of wire 14.

15 represents a wire connecting switch 11 with sparking coil 16, while 17 is the return to the battery.

18 indicates a connection from the coil to switch 12, which through switch handle 19 connects with any one of a number of circuits as 20, 21 and 22. As indicated in the diagram shown in Fig. 5, circuit 20 leads to binding post 23 of our improved sparking device and burner support 24.

25 indicates a gas supply pipe, which through a T-coupling 26, connects with pipe 27 which leads to the main valve 28. From main valve 28 leads a pipe 29 connecting with regulator valve 30, which in turn con-



nects with a pipe 31 leading to T-coupling 32. From T-coupling 32 the pipe 33 leads to the tee connections 34 supplied with valves 35, which are adapted to cut out the supply of gas to any one of the pipes 36.

Our improved sparking device is equipped with a thread, enabling it to be screwed onto supply pipe 36 and burner tube 39, which bears the tip 40. Our improved sparking device is equipped with a binding screw 23 adapted to engage wire 20, and one of the sparking members 41, the other sparking member 41 connecting through contact 42 (as shown in Fig. 4) with supply pipe 36 through the coupling 37, thus grounding the circuit. Each of the sparking members 41 is provided with slots 43 which enable them to be adjustably secured to base 38 of our improved burner support 24 through the medium of binding screw 23, contact 42 and screws 44, thereby accommodating them to burners of different sizes. It may be here noted that the base of our improved sparking device is formed of fiber or other insulating material.

In the modification shown in Fig. 6, 47 represents a binding post, 48 the sparking members, 49 the grounding post, 50 represents fastening bolts, the binding screw, grounding post and fastening screws having engagement with the nuts 51 which are held in pockets 52.

It will be seen from Figs. 2 and 5, that we provide suitable supporting means 53 for the sparking coil.

In the actual practice of our invention, we have made use of the ignition batteries of an automobile, but in magneto machines and wherever desirable, it will be understood batteries may be supplied which may be mounted within the cabinet 10, thus making a compact unitary device.

The operation of our device is as follows: Switch 11 is thrown to an operative position and switch 12 is caused to engage with the contact leading to the lamp it is desired to light. The current will then flow through conductor 20 to binding post 23 up sparking arm 41, jump across to the other sparking arm 41 and down same to grounding screw 43 to the coupling 37 and thence to pipe 36 and thus be grounded. In the case of an automobile the current is grounded in the iron frame of the machine. Gas is then supplied through pipe 25, coupling 26, pipe 27, main valve 28, pipe 29, regulator valve 30, pipe 31, coupling 32, pipe 33, tee connections 34, cut-out valves 35, through burner pipe 36 to the burner, where it will be ignited by the sparks jumping between sparking arms 41.

It will be appreciated by those skilled in the art to which this invention appertains,

that when the lights are once regulated, by means of the regulator valve 30, that this valve will be left fixed and the gas turned on or off with valve 28. It will furthermore be apparent that should any of the lights be thrown out of service, the valve 35 in the gas supply pipe leading to that lamp may be closed, thus avoiding the waste of gas. Also it will be noted that through T-coupling 26 and 32, we have provided means whereby the lighting system may be assembled either right or left as desired.

The modification disclosed in Fig. 6 may be of especial advantage where it is desired to form the burner base of porcelain, and also where it is desired to utilize as little space as possible.

Having described our invention what we claim as new and desire to secure by Letters Patent is:—

1. A plurality of gas burners, feed pipes leading respectively thereto, individual valves mounted in said feed pipes for controlling the flow to said burners, a supply pipe leading the gas to said feed pipes, a main valve in said supply pipe adapted to be closed completely or opened to its extreme capacity, a regulating valve in said supply pipe between said main valve and said feed pipes and adapted to be set to a fixed degree of opening, a plurality of sparking points adjacent to the flame of said burners, a sparking circuit including said sparking points, a main switch for rendering said sparking circuit active and an auxiliary switch closing the said sparking circuit through the sparking points of each burner respectively.

2. An electrically lighted burner comprising a tube through which the gas may issue, an insulating block mounted on said tube, a sparking point having a body with a pair of slots therein and having an extension presenting a point near the position of the flame of said burner, fastening devices passing through said slots into said block and adapted to fix said sparking point thereto, a second sparking point opposite said first sparking point and also having slots in the body thereof, fastening devices passing through said last named slots and securing said second sparking point to said block, and means for passing electric current between said sparking points.

3. An electrically lighted burner comprising a tube through which the gas may issue, an insulating block mounted on said tube, a sparking point having a body with a pair of slots therein and having an extension presenting a point near the position of the flame of said burner, fastening devices passing through said slots into said block and adapted to fix said sparking point thereto, a sec-

ond sparking point opposite said first sparking point and also having slots in the body thereof, fastening devices passing through said last named slots and securing said second sparking point to said block, and means for passing electric current between said sparking points, one of said fastening devices being in engagement with said tube whereby the current through said sparking points is grounded through said tube.

In witness that we claim the foregoing we have hereunto subscribed our names this 16th day of April, 1909.

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