L. BECK.

RHEOSTAT.

APPLICATION FILED OCT. 2, 1909.

1,045,361. Patented Nov. 26, 1912.

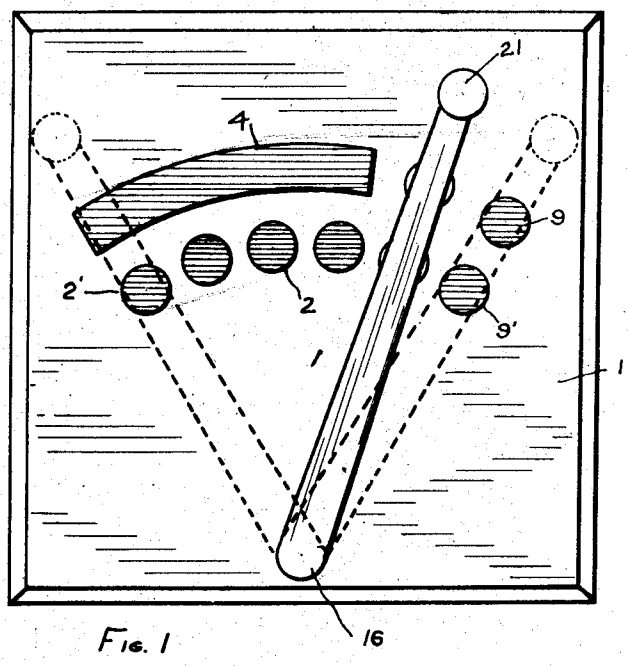


FIG. 1

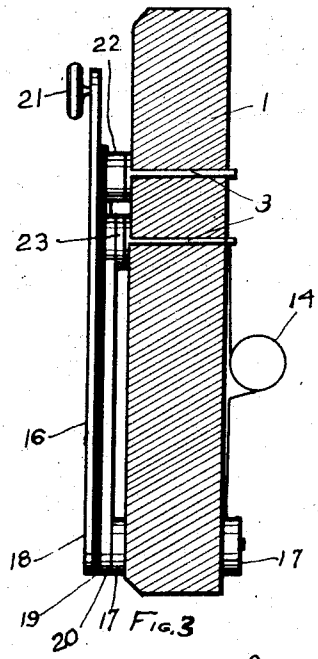


FIG. 3

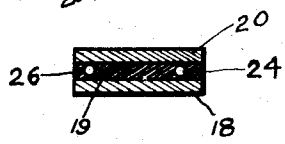


FIG. 4.

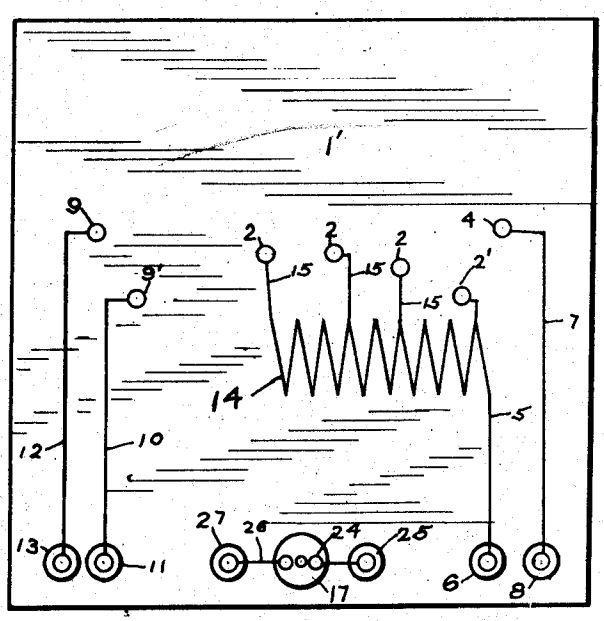


FIG. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

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RHEOSTAT.

1,045,361. Specification of Letters Patent. Patented Nov. 26, 1912.

Application filed October 2, 1909. Serial No. 520,625.

To all whom it may concern:

Be it known that I, LOUIS BECK, citizen of the United States, residing at Norwood, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Rheostats, of which the following is a specification.

This invention relates to improvements in rheostats.

The object of my invention is to provide a simple, efficient, and inexpensive rheostat in connection with a compact and convenient switch-board mechanism.

My rheostat is more particularly designed to be used in connection with an internal combustion engine, and the leading feature thereof consists in providing a resistance coil which may be readily put on the line of any electric line circuit so that by means of this coil it will be possible to obtain proper voltage and amperage to give a sure and reliable spark to ignite the gas in the engine.

With the above and other objects in view my invention consists in the combination, arrangement, and details of construction disclosed in the drawings and specification and then more particularly pointed out in the appended claims.

In the drawings wherein similar reference characters designate similar parts throughout the views, Figure 1 is a front elevation of the rheostat with the operating switch shown in different positions, Fig. 2 is a rear view showing the adjustable resistance and wire connections, Fig. 3 is a vertical sectional view of said device, and Fig. 4 is a detail sectional view of the switch arm.

Referring to the accompanying drawings which are merely illustrative of the invention, 1 denotes a solid base-board constructed of suitable material preferably slate. On the front side of the base-board 1 a series of contact buttons 2 are secured to the board 1 by means of pins 3 which extend through openings in the board and project rearwardly of the rear face of the board. Above the button contacts 2 a copper contact strip, crescent-shaped in contour, is secured to the board, said contact strip and buttons having a common center. Reference being made to the back 1′ of the switch board 1, the arrangement of the electrical connections will be seen. The outer contact button 2′ is connected by means of wire 5 with a binding post 6, and the contact strip 4 is connected by wire 7 with the binding post 8, secured to the board 1. Two contact buttons 9 and 9′ respectively extend at one side of both contact strip 4 and the contacts 2 respectively, being in the same arcuate path therewith, as shown, and one of these contact buttons 9 is connected by wire 12 to a binding post 13 while the other 9′ is connected by wire 10 to a binding post 11.

On the rear side 1′ of the board 1 a preferably German silver resistance coil 14 is located having its convolutions connected at spaced points with the different buttons 2 by means of the wire 15. A pivot 17 concentric with said contacts is secured to the front face of the base-board 1 upon which the lower end of a lever 16 is fulcrumed so that it may be turned to engage either the series of resistance contacts or the contacts 9 and 9′ at the end of the switch-board. The lever 16 comprises a flat portion 18, an insulating strip 19, and an inner portion 20. The upper end of the portion or section 18 carries a handle 21 and is provided with a spring contact button 22 adapted to engage with either the button 9 or with the copper strip 4. The contact 22 is connected by a wire 24 embedded in the insulation 19 with the binding post 25, and the contact button 23 which is also a spring button secured upon lever 16 below button 22 is connected by a wire 26 embedded in the insulation 19 to a binding post 27 secured to the switch-board, and this button 23 is arranged to engage the contact 9′ or the series of resistance contacts.

The construction being as above described it is to be noticed that 6 and 8 may, for the purpose of illustration, represent the binding posts for a light circuit, made up of the terminals 5 and 7 connected to the buttons 2 and strip 4 respectively; 27 and 25 may represent the binding posts for the igniter wires for a gas engine, and 11 and 13 the binding posts for the battery circuit. My device in its completest aspect is a resistance coil put up in a neat and convenient form in order to use current directly from a light circuit to ignite gas in an engine. I shall refer to the term "light circuit" to distinguish over a source of current other than that of a battery, and by this term I refer to the ordinary current supply used in houses for lighting purposes mainly. Any coextensive use will, however, fall within the purview of my invention.

When lever 16 is moved so that its spring contacts 22 and 23 are brought into engagement with contacts 9 and 9′ respectively, current will flow from a battery (not shown) to furnish a spark for the engine, which would be necessary for starting in case the plant was generating its own current; but if it is not desired to ignite the gases in the internal combustion engine from the battery with which the terminals 10 and 12 are connected in circuit, and which lead from said contacts 9 and 9′, lever 16 can then be thrown over to the left of the board 1 so as to bring spring contacts 22 and 23 into engagement with the strip 4 and contacts 2 respectively, or with any of the different points of contacts connected to the resistance coil 14 at the back of said switch-board. This will give the best results for obtaining a spark from a lighting circuit. By this arrangement it will be obvious that the current flowing through the resistance coil 14 to lever 16 will be more powerful the nearer spring contacts 22 and 23 are moved toward the end contact 2′, which is connected by the wire 5 to the resistance coil and also to binding post 6, and as the contacts 22 and 23 engage with the strip 4 and buttons 2 respectively the current passing through the wires 5 and 7 from the light circuit will flow through the igniter wires 24 and 26 respectively insulated in the strip 19 centrally disposed in the lever 16, and the proper voltage or amperage thereby obtained to generate a spark. The wires 24 and 26 insulated in the strip 19 are therefore, hidden from view at the front of the board 1 and pass through the pivot 17 of lever 16 through the back of said board where they are connected to the binding posts 25 and 27 respectively, from whence they lead to the igniting plug of an internal combustion engine (not shown).

Numerous modifications may be resorted to in practice without departing in principle from the details of construction herein disclosed.

Having described my invention I claim and desire to secure by Letters Patent:—

1. Switch-board mechanism comprising a solid board, a switch lever pivoted at the bottom of said board, a series of contact buttons extending in an arcuate line with respect to the lever pivot, an arcuate contact plate coöperating with said buttons, said buttons and contact plate being included in a circuit, a resistance coil connected with said contact buttons, an insulating strip centrally disposed in said lever, contact members carried by said lever for engagement with the contact plate and one of said contact buttons simultaneously, and wire connections mounted in said insulating strip connected respectively to the contact members of said lever through the pivot thereof to close a circuit.

2. In combination with a switchboard having opposite contact buttons included in a circuit, a lever pivoted concentric to said buttons, corresponding contact members for said buttons mounted on the lever intermediate its ends, an insulating strip centrally disposed in said lever against which said contact members bear, and electrical connections to said contact members disposed in said insulating strip and passing out through the pivot of said lever, said lever arranged to move the contact members over said buttons to close the circuit formed by said electrical connections.

In testimony whereof I affix my signature, in presence of two witnesses.

LOUIS BECK.

Witnesses:
JOHN BAILEY,
MARY E. BAILEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."