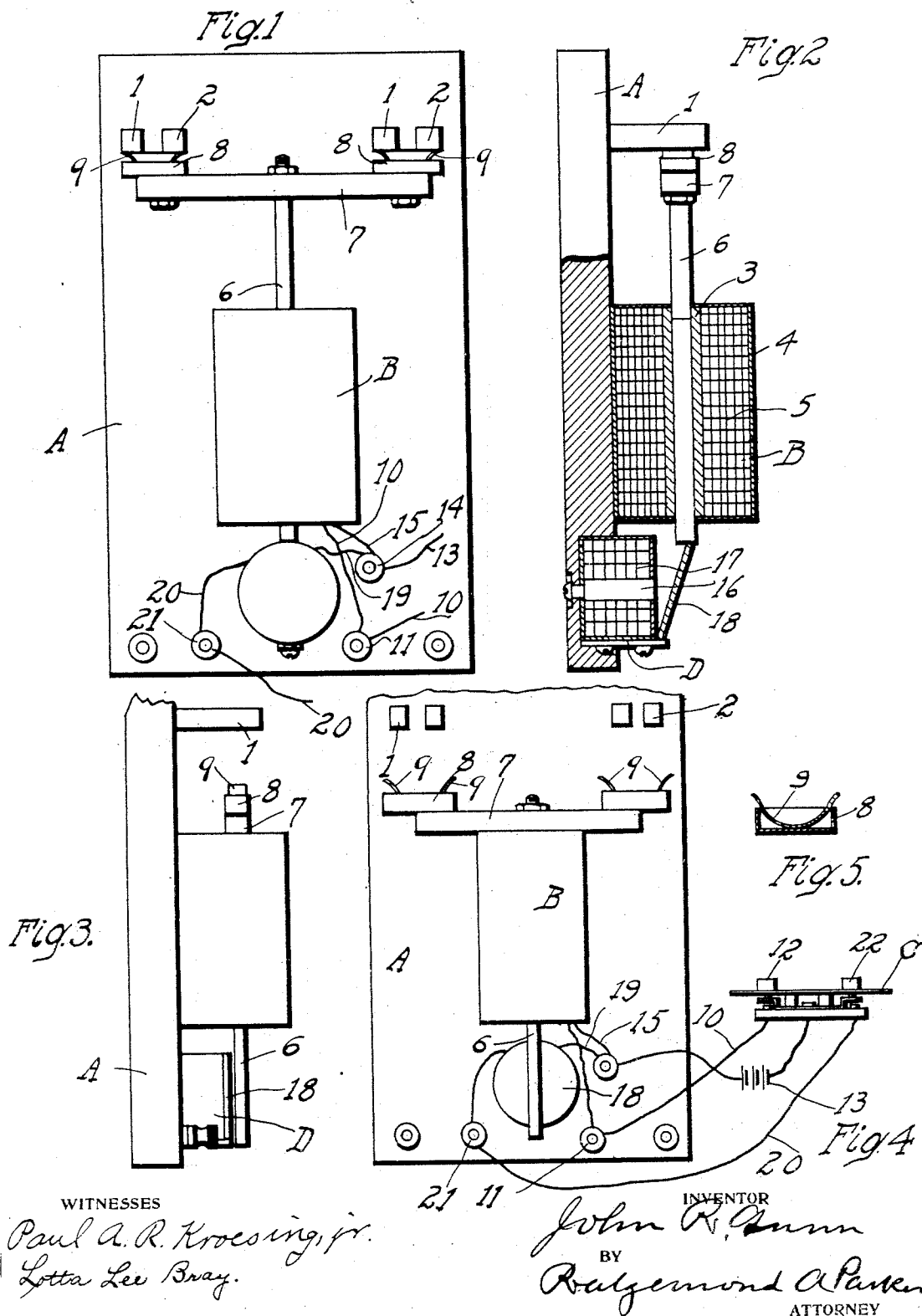


J. R. GUNN.
 REMOTE CONTROL ELECTRIC SWITCH.
 APPLICATION FILED MAR. 28, 1912.

1,054,917.

Patented Mar. 4, 1913.



UNITED STATES PATENT OFFICE.

JOHN R. GUNN, OF DETROIT, MICHIGAN.

REMOTE-CONTROL ELECTRIC SWITCH.

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Specification of Letters Patent.

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Application filed March 28, 1912. Serial No. 686,727.

To all whom it may concern:

Be it known that I, JOHN R. GUNN, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Remote-Control Electric Switches, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to remote control electric switches and has for its object such a switch of different construction and mode of operation from the devices of the prior art and which is capable of being constructed at less cost. Its operation is by magnetic attraction and gravity alone.

In the drawings:—Figure 1, is the front elevation of the switch. Fig. 2, is a vertical section of the switch partly in elevation. Fig. 3, is a side elevation of the switch on a similar scale, showing the connectors dropped out of contact with the terminals. Fig. 4, is a front elevation of the switch in the same position, as in Fig. 3. Fig. 5, is a detail of the connector.

Each of the wires coming into a house or building is broken forming terminals 1 and 2 that are mounted on an insulating bed such as a slate slab A. The solenoid B is fastened to the insulating bed A and is provided with a hollow core 3 and a Swiss iron armor 4. In between the core 3 and the armor 4 are the necessary insulating windings 5. The core and the Swiss iron armor are an important part of my invention as these permeable substances serve to collect the magnetic flux and concentrate it so as to make the solenoid or sucking magnet very much more efficient with a given current than would otherwise be the case. By the use of this form of construction I am enabled to operate this magnet with a pair of dry cells, having a total voltage of 3 and an amperage of about 20. High tension operated remote control switches are liable to generate heat if something goes wrong with the circuit, and hence are interdicted by underwriters. The plunger rod 6 is reciprocable in the hollow core 3 and carries a cross head of insulating material 7 upon which are mounted the two connectors 8. These connectors are provided with contact

springs 9 for a purpose hereinafter to be described. The conductor 10 leads from one end of the winding 5 about the core to the binding post 11 and from thence to a push button switch C where a push button 12 may close the circuit through the battery 13 to the binding post 14, from thence through the conductor 15 to the lower end of the coil.

Arranged just below the solenoid B is a magnet D provided with a soft iron core 16, windings 17 and armor 18. This magnet D is provided with a circular catch 18 that is hinged thereto. The coil is energized through the conductor 19 which leads from the common binding post 14 and the conductor 20 that leads from the other end of the coil to the binding post 21 and thence to the push button switch C where it is controlled by the push button 22.

The operation of the device is as follows:—The push button 12 is pressed, thereby establishing a circuit through the battery 13, the conductor leading therefrom, the binding post 14, the conductor 15 through the coil about the plunger 6, out the other end of the coil, by the conductor 10 to the binding post 11 back to the push button switch. This serves to energize the solenoid B which sucks the plunger rod 6 up so that the spring contacts bridge the terminals 1 and 2. The magnetic flux in the solenoid, while it is energized also serves to open out the circular catch 18 of the magnet D so that it lies directly in the path of the plunger rod 6. When the push button 12 is released, the plunger rod 6 starts to drop, (the switch being vertically disposed) but is caught by the catch 18 so that it does not drop far enough to allow the spring contacts 9 to leave contact with the terminals. These spring contacts 9 by reason of their resiliency contact the terminals, although the connections drop slightly before the catch engages with the plunger. The circuit is now effectually closed until it is again desired to be opened. The opening is accomplished by pressing the push button 22 of the push button switch C. This establishes a circuit through the battery 13, the conductor leading therefrom, the binding post 14, the conductor 19 leading to the winding 17 of the magnet D out the other end of the winding through the conductor 20 to the binding post 21 and thence back to the push button switch C. This serves to energize the magnet D which attracts the catch 18.

The plunger rod then drops by gravity, breaking the contact with the terminals and opening the main circuit.

From the above description, it will be seen that my device is readily and cheaply constructed and it does not require a constant flow of current in order to keep it in closed or open relation and that it is so designed that a few dry batteries will effectually operate it. Another important feature is the fact that it operates entirely by magnetic attraction and gravity, doing away with all springs or other mechanical devices.

What I claim is:—

15 A remote control electric switch, having in combination, a vertically disposed solenoid, a pair of terminals located thereabove, a vertically reciprocating plunger rod adapted to be drawn upward by energizing said
20 solenoid, a connector carried by said plunger rod and adapted, when the plunger rod is

drawn upward, to contact the terminals and close the circuit therethrough, a magnet located just below said solenoid and provided with a hinging catch, said catch, when the solenoid is energized, being adapted to be drawn outward under the plunger rod by the magnetic flux of the solenoid and thereby hold the plunger rod so as to keep the connector in contact with the terminals and the said magnet being adapted, when it is energized, to attract the catch and withdraw it from under the plunger rod, whereby the plunger rod drops by gravity and breaks the connection between the connector and the terminals.

In testimony whereof, I sign this specification in the presence of two witnesses.

JOHN R. GUNN.

Witnesses:

STUART C. BARNES,
VIRGINIA C. SPRATT.