

H. N. MOTSINGER.
SWITCH.
APPLICATION FILED MAR. 28, 1908.

937,709.

Patented Oct. 19, 1909.

Fig. 7.

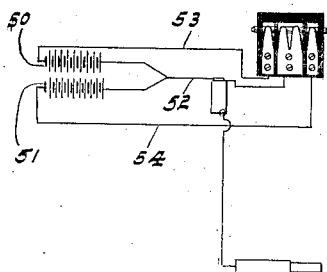


Fig. 1.

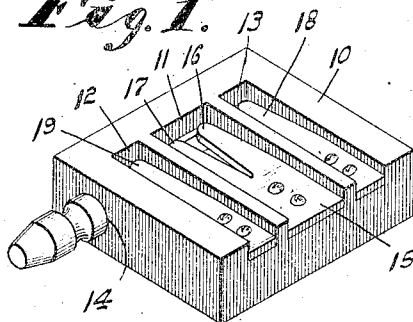


Fig. 2.

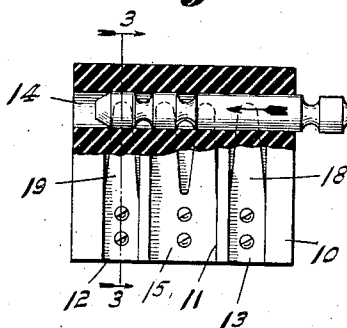


Fig. 3.

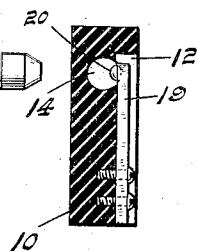


Fig. 4.

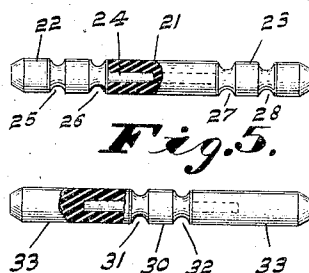


Fig. 5.

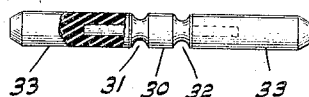
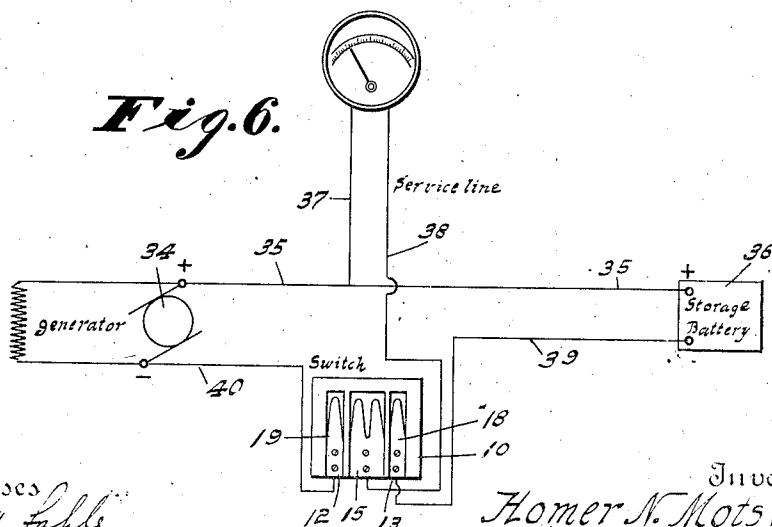


Fig. 6.



Witnesses
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SWITCH.

937,709.

Specification of Letters Patent.

Patented Oct. 19, 1909.

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To all whom it may concern:

Be it known that I, HOMER N. MOTSINGER, a citizen of the United States, residing at Pendleton, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Switches, of which the following is a specification.

The object of my invention is to provide a neat and efficient switch mechanism by means of which proper connections may be readily established between a generator, a storage battery, and a service line so that the service line may be served either from the generator or from the battery or the battery may be recharged by the generator.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective view of my improved switch block with one desirable form of switch pin therein; Fig. 2 a plan in partial horizontal section showing the form of pin in an intermediate position; Fig. 3 a section on line 3—3 of Fig. 2 with the switch-pin removed; Fig. 4 a detail in partial axial section of the form of pin shown in Figs. 1 and 2; Fig. 5 a similar view of another form of pin; Fig. 6 a wiring diagram, and Fig. 7 another wiring diagram.

In the drawings 10 indicates the main body of my improved switch block. This main body may be formed of any desirable material, preferably a good insulating material such for instance as hard rubber. Formed in one face of the block 10 is a wide central pocket 11 and two narrower pockets 12 and 13 which flank the pocket 11. Formed through body 10 at right angles with the pockets 11, 12 and 13, and intersecting the inner ends thereof, is a passage 14. Mounted in pocket 11 is a flexible contact member 15 which I prefer to make with two points or fingers 16 and 17. Mounted in pocket 13 is a flexible contact member 18 and mounted in pocket 12 is a flexible contact member 19, the points of the several members 15, 18 and 19 being equally spaced from each other and each having preferably upon its under side a small boss 20 for a purpose which will appear. Adapted to fit passage 14 is a connector or switch-pin which in Figs. 1, 2 and 4, I show as comprising a central insulating stem 21 having at opposite ends metallic members 22 and 23 which are electrically connected by a pin 24 which runs through the insulating body 21. Head 22 is pro-

vided with a pair of grooves 25 and 26 and head 23 is provided with a pair of grooves 27 and 28 which are spaced apart in pairs a distance equal to the distance between any two of the flexible terminals of the block. The two heads are so spaced that grooves 26 and 27 lie apart a distance equal to the distance between members 18 and 19.

In Fig. 5 I show a connector comprising a central metal member 30 having grooves 31 and 32, and this central member is flanked at its ends by insulator extensions 33 33 which are of such length that when the pin is pushed clear in from either side of block 10 the grooves 31 and 32 will receive terminals 16 and 18 or terminals 17 and 19.

The switch is used in the following manner:—A generator 34 has its positive pole connected by a wire 35 with the positive pole of a storage battery 36; wire 35 is also connected with the wire 37 of a service line; the opposite wire 38 of the service line is connected to the plate 15 which comprises the switch points 16 and 17; the negative side of the storage battery is connected by a wire 39 with switch point 18 and the negative side of the generator is connected by a wire 40 with switch point 19.

The operation is as follows: Suppose that the switch pin shown in Fig. 4 is used and end 22 be inserted into passage 14 until the knobs 20 of the switch points 19 and 17 lie in grooves 25 and 26. We have then a circuit established from the positive side of the generator through wire 35, service wires 37 and 38, switch points 17, switch point 19 and wire 40 to the negative side of the generator, and the service circuit is served from the generator. In this position the switch points 16 and 18 will lie upon the central insulating portion 21 of the pin and there will therefore be no completed circuit for the storage battery in either direction. If the pin be pushed in farther so as to bring notch 26 into position opposite switch point 19, the notch 27 will be brought opposite switch point 18 and there will then be established a charging circuit for the storage battery beginning at the positive pole of the generator, thence through wire 35 of the positive side of the storage battery 36 thence through wire 39, switch points 18 and 19 and wire 40 to the negative side of the generator, and the storage battery will be charged by the generator. If now the

switch pin be pushed clear in, in the direction indicated by the arrow in Fig. 2, notches 27 and 28 will be brought opposite switch points 16 and 18 respectively and a circuit will be established from the positive side of the storage battery through wire 35, thence through the service wires 37 and 38 to switch point 16, thence through head 23 to switch point 18 and through wire 39 to the negative side of the storage battery.

It will be readily understood that the pin shown in Fig. 5 may be used with the same facility for establishing a connection between either the storage battery or the generator on one side and the service line on the other but this pin is incapable of establishing a charging connection between the storage battery and generator. The bosses 20 snap into the respective grooves of the switch-pin and thus serve to properly position the parts as soon as the switch-pin has been carried approximately to the desired position.

The pin shown in Fig. 5 is more especially designed for use in a circuit like that illustrated in Fig. 7 where there are two sources of current, 50 and 51, said two currents being connected by a wire 52 with the terminal 15 and the source 50 being connected by a wire 53 with terminal 19 while source 51 is connected by wire 54 with terminal 18, the arrangement being such that by shifting the pin to bring notches 31 and 32 into engagement with fingers 16 and 18 respectively, source 51 will be placed in the serv-

ice circuit while by shifting the notches 31 and 32 so as to bring them into alinement with fingers 19 and 17 respectively the source 50 will be in the service circuit:—

I claim as my invention:—

1. A switch block having a plane face with three switch pockets formed therein, three terminals mounted one in each of said pockets, a switch pin guide extending transversely through said block and through said pockets, and a switch pin fitted in said guide and formed to connect said three terminals in pairs.

2. A switch block comprising a main body, three spring terminals the middle one of which has two operative ends equally spaced from each other and the respective flanking terminals, and a switch pin formed to connect said three terminals in pairs.

3. A switch block comprising a main body, three spring terminals the middle one of which has two ends equally spaced from each other and the flanking terminals, a switch-pin guide, and a switch-pin fitting said guide and formed to connect said three terminals in pairs.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this twentythird day of March, A. D. one thousand nine hundred and eight.

HOMER N. MOTSINGER. [L. S.]

Witnesses:

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