

1,046,465.

Fig. 1.

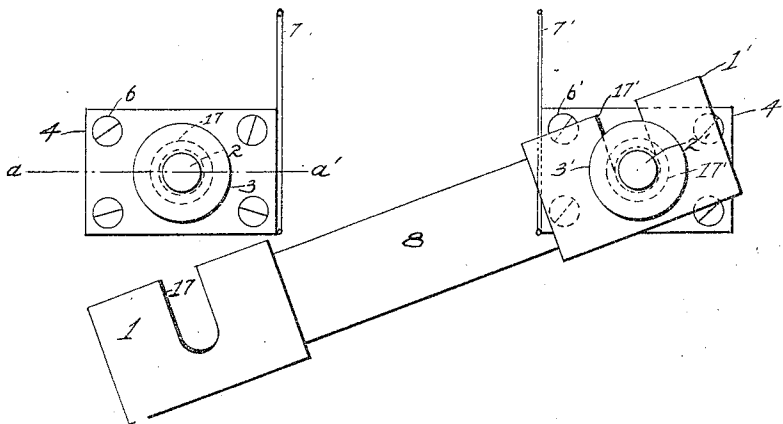
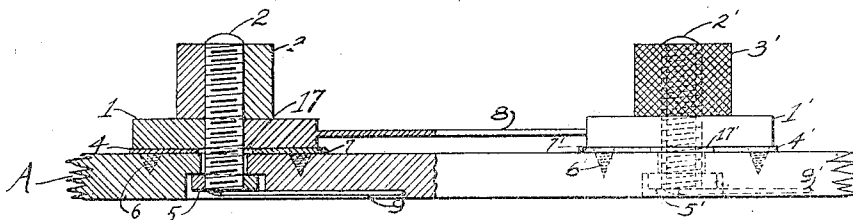


Fig. 2.



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ELECTRIC SHUNT CONNECTION.

1,046,465.

Specification of Letters Patent.

Patented Dec. 10, 1913.

Application filed May 24, 1911. Serial No. 399,290.

To all whom it may concern:

Be it known that I, ADRIAN H. HOYT, a citizen of the United States, and resident of Penacook, county of Merrimack, and State of New Hampshire, have invented an Improved Electric Shunt Connection, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of a novel electric shunt connection adaptable for use in connection with a galvanometer, ammeter, or any other instrument placed in parallel circuit therewith, by means of which current or voltage is to be measured.

One of the particular objects of this invention is the production of a form of connection between the shunt, the measuring instrument placed in parallel circuit therewith, and the source of current, arranged so that proper proportionate part of the current must necessarily pass through the shunt whenever the galvanometer or ammeter is placed in parallel circuit therewith.

Another of the special objects of this invention is the production of a method of securing contact between the shunt and the source of current, whereby a perfect connection must be established between the same, before the measuring instrument placed in parallel circuit therewith can receive any current.

Another particular object in view is to provide such a connection between the shunt, the measuring instrument placed in parallel therewith, and the source of current, so that if the shunt becomes disconnected accidentally or otherwise from the circuit, the measuring instrument will also become disconnected, and will not be injured by the passage of a greater amount of current through the same than is proper.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings, Figure 1 is a plan view of the shunt and connection as used on a switchboard, one end of the shunt being

swung out of contact for the purpose of showing manner of disconnecting same more clearly. Fig. 2 is an elevation of the same, both ends of shunt being in position of contact, and one half shown as a section taken 80 through the line *a a'*.

Two thin rectangular plates numbered 4—4' are attached to the board by means of wood screws 6—6'. Permanently attached to these plates are the wires 7—7' leading 85 to the ammeter. Each of these plates contain a circular opening 17 through which passes the threaded bolt 2. This opening is made somewhat larger than bolt 2, so that it passes through the plate 17 without touching at any point. Upon the lower end of bolt 2 is screwed permanently the nut 3, to which is soldered the end of wire 9 leading from the source of current. The shunt 3, made in the usual form, consists of ends 75 1—1' made of brass with a soft iron bar between the same.

The slot 17 is made of the right width to receive bolt 2, which enables the shunt to be swung out of contact as shown in Fig. 2. 80 Upon the upper ends of bolt 2—2' are placed the milled nuts 3—3', which may be turned with the fingers. When shunt 3 is placed in position, the ends 1—1' of same rest upon the plates 4—4' and bolts 2—2' pass through 85 the slot 17—17'. The contact is completed by screwing milled nuts 3—3' down until the lower surfaces of nuts 3—3', the ends of shunt 1—1', and the upper surface of plates 4—4' are in firm contact with one another. 90 The path of the current is then as follows: Entering through wire 9, it is led to the bolt 2, passes up through the bolt to nut 3, thence to the end of shunt 1. Part of the current then passes through the shunt 3 to nut 3', 95 bolt 2', and out by wire 9', while part passes from end of shunt, 1, to plate 4, thence by wire 7, through the ammeter, returning to plate 4', through end of shunt 1', nut 3', bolt 2', and out by wire 9'. 100

Should the shunt 3 accidentally or otherwise become disengaged, the ammeter can receive no over-current, because only when shunt end 1 is in position and nut 3 is screwed down tightly is the ammeter placed 105 in circuit.

By this arrangement the current can also be measured very accurately, because the danger of there being any poor contact introduced between the source of current, the 110

shunt end 1, and the measuring instrument is eliminated, since the current must necessarily pass from post 2 upon end 1 of shunt before it reaches plate 4 and thence goes through wire 7 to the instrument.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. The combination of an electric shunt with a particular form of connection consisting of a flat plate, a threaded bolt projecting upward through a hole in said plate, said hole being larger than the bolt, means for attaching said plate to a switch board, means for bringing said plate, bolt, and shunt in electrical contact, and means for

attaching a terminal wire to the lower end of said bolt, as described and set forth.

2. The combination of an electric shunt with a flat rectangular plate, a threaded bolt, said plate being pierced with a hole larger than the diameter of said bolt, a milled and threaded nut on said bolt, and a nut for attaching a terminal wire to the lower end of said bolt, as described.

In testimony whereof, I have signed my name to this specification, in the presence of two witnesses.

ADRIAN H. HOYT.

Witnesses:

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