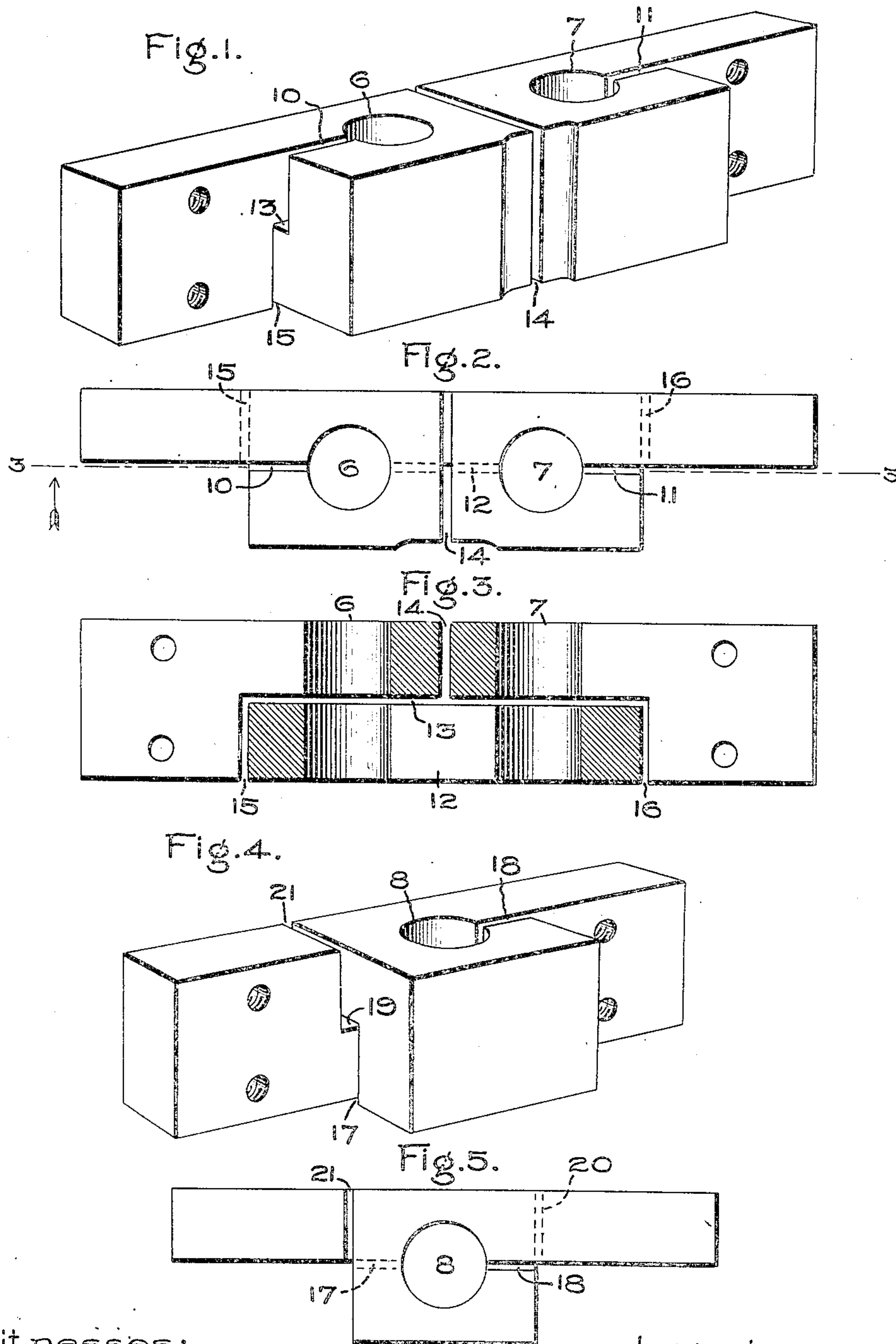


C. B. LARZELERE.
ELECTROMAGNET COIL.
APPLICATION FILED MAR. 29, 1909.

963,907.

Patented July 12, 1910.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES B. LARZELERE, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ELECTROMAGNET-COIL.

963,907.

Specification of Letters Patent.

Patented July 12, 1910.

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To all whom it may concern:

Be it known that I, CHARLES B. LARZELERE, a citizen of the United States, residing at Schenectady, in the county of Schenectady, State of New York, have invented certain new and useful Improvements in Electromagnet-Coils, of which the following is a specification.

My invention relates to current carrying coils for electro-magnetically controlled devices, and particularly to coils of this kind having but few turns and intended for carrying heavy currents. Such coils are used in circuit breakers, relays and other forms of electro-magnetically controlled switches used in connection with the control of dynamo-electric machinery. With such forms of apparatus when high currents are to be handled, the desired strength of the magnetic field is often obtained by a single turn in the coil carrying the heavy current.

My invention is particularly adapted for use as a single turn coil of the last mentioned type, but, as will be hereinafter explained, it is not limited to use in this connection, since my invention is in no way limited to coils having but a single turn.

The object of my invention is to provide a coil for electro-magnetically controlled devices capable of carrying large currents, which coil can be easily and cheaply manufactured.

In the manufacture of my improved coil no bending of the stock takes place, but instead the coil is formed out of a simple bar of conducting material by drilling a hole through the same and making certain slots therein as hereinafter described.

Referring to the drawing, Figure 1 is a view in perspective of a double coil, for a pair of so-called "notching relays," made in accordance with my invention; Fig. 2 is a plan view of the same; Fig. 3 is a sectional elevation on the line 3—3 of Fig. 2 looking in the direction of the arrow; Fig. 4 is a perspective view of a coil for a single relay, made in accordance with my invention; and Fig. 5 is a plan view of the coil shown in Fig. 4.

The construction of the two coils shown will be understood from the drawings. The single and the double coil are each formed from a single bar of conducting material, usually copper. In the case of the coil for the double relay, shown in Figs. 1, 2 and 3,

two holes 6 and 7 are drilled in the upper bar. In the single coil of Figs. 4 and 5 a similar hole 8 is made. The arrangement of slots or saw cuts will be clear from the drawing, it being noted that in both the double and single coils the slots are transverse and longitudinal of the bar and intersect one another at substantially right angles. It is obvious, however, that the slots might be made at other angles without departing from the spirit of my invention. In the coil of Figs. 1, 2 and 3, the longitudinal slots are shown at 10, 11, 12 and 13 and the transverse slots at 14, 15 and 16. In the coil of Figs. 4 and 5, the longitudinal slots are shown at 17, 18 and 19 and the transverse slots at 20 and 21. The ends of the bars in both the double coil of Figs. 1, 2 and 3 and the single coil of Figs. 4 and 5 are shown provided with threaded holes which allow bus bars to be attached to said coils.

It will be seen from the drawing that in the case both of the double coil of Fig. 1 and the single coil of Fig. 4, the path of the current is around the hole or holes in the bar. In other words, the slots in the bars form the latter into loops around the holes, thereby producing a coil having but a single turn or perhaps one and one half turns. It will, of course, be understood that, if desired, a coil may be made by means of slots in a bar, in the general manner described, such that more than one turn is provided. It is obvious also that a bar may be drilled with more than two holes and slotted to provide coils for any number of electro-magnetically controlled devices. It is my intention to cover all such arrangements in the following claims.

What I claim as new and desire to secure by Letters Patent of the United States, is—

1. A current carrying coil for an electro-magnetically controlled device comprising a rectangular bar of conducting material having a transverse hole therethrough and intersecting slots forming the material of the bar into a loop around said hole.

2. A current carrying coil for an electro-magnetically controlled device comprising a rectangular bar of conducting material having a transverse hole therethrough and transverse and longitudinal slots intersecting one another forming the material of the bar into a loop around said hole.

3. A current carrying coil for an electro-magnetically controlled device comprising a rectangular bar of conducting material having a transverse hole therethrough and transverse and longitudinal slots intersecting one another at substantially right angles whereby the material of the bar is formed into a loop around said hole.

4. A current carrying coil for an electro-magnetically controlled device comprising a bar of conducting material having a hole therethrough, longitudinal slots intersecting one another and substantially at right angles and extending into said hole, and slots intersecting said first mentioned slots but not the hole at substantially right angles, said slots serving to form the material of the bar into a loop around said hole.

5. A current carrying coil for an electro-magnetically controlled device comprising a bar of conducting material substantially

rectangular in cross section and having a hole therethrough transversely, and intersecting slots some substantially parallel to and others at right angles to the longitudinal faces of said bar whereby the material of the bar is formed into a loop around said hole.

6. A current carrying coil for a plurality of electro-magnetically controlled devices comprising a bar of conducting material having a plurality of holes therethrough, and longitudinal and transverse slots intersecting substantially at right angles forming the material of the bar into a plurality of loops each surrounding one of said holes.

In witness whereof, I have hereunto set my hand this 26th day of March, 1909.

CHARLES B. LARZELERE.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.