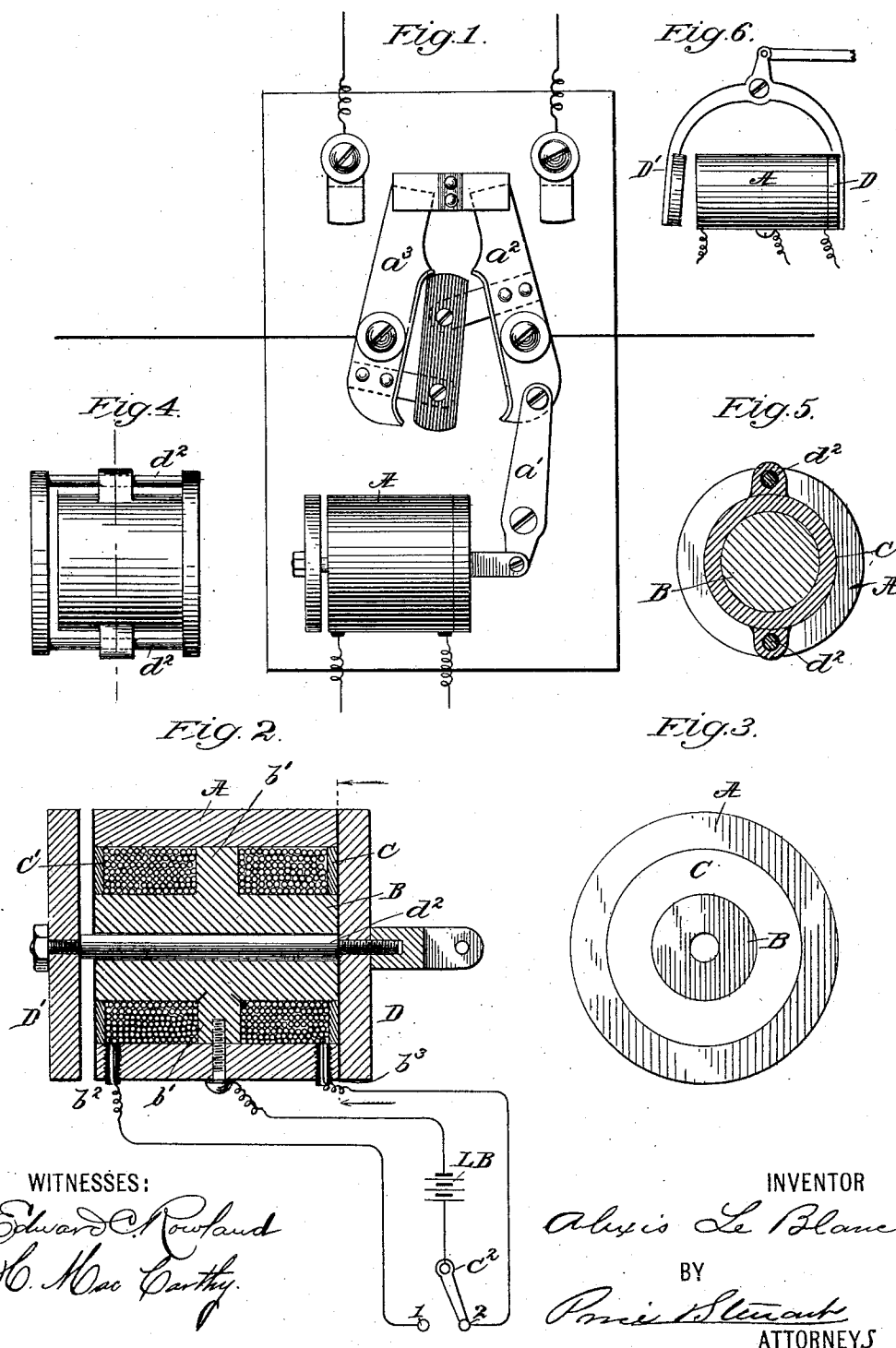


(No Model.)

A. LE BLANC.
ELECTROMAGNET.

No. 566,918.

Patented Sept. 1, 1896.



UNITED STATES PATENT OFFICE.

ALEXIS LE BLANC, OF NEW YORK, N. Y., ASSIGNOR TO THE ELECTRIC
SELECTOR AND SIGNAL COMPANY, OF WEST VIRGINIA.

ELECTROMAGNET.

SPECIFICATION forming part of Letters Patent No. 566,918, dated September 1, 1896.

Application filed October 16, 1894. Renewed March 31, 1896. Serial No. 585,664. (No model.)

To all whom it may concern:

Be it known that I, ALEXIS LE BLANC, of the city, county, and State of New York, have invented a new and useful Improvement in
5 Electromagnets, of which the following is a full description.

The accompanying drawings illustrate the invention, of which—

Figure 1 shows a plan view of the magnet
10 connected with a switch; Fig. 2, a longitudinal section of the same; Fig. 3, a top view of the magnet with the armature removed. Figs. 4 and 5 show the magnet with modifications of the guiding devices for the armature. Fig.
15 6 shows a modified form of the device.

Viewing Fig. 1, the magnet is shown at A connected by one of its armatures by a pivoted lever a^1 , whose outer end is connected with the switch-piece a^2 , which in turn is connected
20 by intermediate mechanism with its companion switch-piece a^3 , and both work together. As this switch movement is a common device it need not be further described.

The construction of the magnet is shown in
25 Fig. 2, in which A represents an outer shell or casing, and is shown in the drawings as circular in form. Within this casing is fitted a core B, having approximately the same length longitudinally as the outer shell, but of
30 smaller diameter than the shell, and is provided with the shoulders b^1 . These shoulders are constructed to fit neatly within the outer shell A.

Between the shoulders and the ends of the
35 shell and core the magnet is provided with the wire windings or coils C and C'. For convenience the terminals of each of these windings protrude through the shell, as shown at b^2 b^3 . One of said terminals proceeds to post 1
40 and the other to post 2. The other ends of the coils are grounded in the core. A battery or other generator L B connects from one side with the arm c^2 and from the other side with the core B of the magnet. The arm c^2
45 may be shifted to and from the posts 1 and 2, and when so shifted transfers the attraction of the magnet to one or the other of its ends. This magnet is provided with the armatures D and D', which are connected together
50 and suitably guided. There are a number of

ways in which the guiding may be done. As shown in Fig. 2, the core B is perforated longitudinally and provided with a rod d^2 to slide in the perforation, and to the end of this rod the armatures are attached. Fig. 3 is a top
55 view of the magnet with the armature removed. A modified form of these guiding devices is shown in Figs. 4 and 5, wherein the shell A is provided with perforated lugs through which the rods d^2 , which join the
60 armatures together, pass. This magnet may be connected up with any mechanism for performing work, as illustrated in the drawings, and constitutes a magnet of great power and prompt action. Another modified form is
65 shown in Fig. 6, wherein the armatures are hung to a forked pivoted lever.

What I claim, and desire to secure by Letters Patent, is—

1. In an electromagnet an outer casing, a
70 core inclosed within said casing both of magnetizable material, two coils wound between them, one at each end and separated from each other, thereby forming a double magnet, one at each end, in combination with a movable
75 plate-armature at each end of said core and casing and constructed to register with and cover both core and casing.

2. In an electromagnet an outer casing, a
80 core inclosed within said casing, both of magnetizable material, two coils wound between them, one at each end and separated from each other, thereby forming a double magnet, one at each end, in combination with a
85 movable plate-armature at each end of said core and casing and constructed to register with and cover both, and means for directing an electric current through either of said
90 coils and thereby magnetizing the poles of either of the magnets and attract its respective armature thereto.

3. In an electromagnet an outer shell or casing provided with an inclosed core having the shoulder b^1 , and a coil at each end beyond the shoulder, occupying the space be-
95 tween the core and casing, in combination with terminal connections from each of the coils with one side of a generator, and a terminal connection from the core to the other side of the generator.

4. In an electromagnet, an outer casing, a longitudinally-perforated core inclosed within said casing both of magnetizable material, and both flush with each other at their pole ends, two coils wound between them one at each end and separated from each other, thereby forming two magnets, in combination with a rod passing through the perforation in the core and attached at each end to a plate-armature covering the casing and registering with both casing and core.

5. In an electromagnet, an outer casing, a longitudinally-perforated core inclosed within said casing, both of magnetizable material and flush with each other at their pole ends, two coils wound between them, one at each end and separated from each other, thereby forming two magnets one at each end, in combination with a rod passing through the perforation in the core and attached at each end to a plate-armature covering the casing and registering with both casing and core, and means for controlling the current through either of the coils and thereby producing alternate movements of the armatures.

6. In an electromagnet, an outer casing, a core inclosed within said casing, both of magnetizable material, a shoulder between the two constructed to leave spaces between said core and casing at each end, separated by the shoulder, a coil occupying each of the spaces thereby forming two magnets one at each end, in combination with two movable plate-armatures one at each end, and constructed to register with and cover both core and casing.

7. In an electromagnet, an outer casing, a longitudinally-perforated core inclosed within the casing both of magnetizable material, a shoulder between the two, constructed to leave spaces between said core and casing at each end, separated by the shoulder, a coil occupying each of the spaces, thereby forming two magnets one at each end, in combination with a rod passing through the perforation in the core, attached at each end to a plate-armature constructed to register with and cover both core and casing.

8. In an electromagnet an outer casing, a core inclosed within the casing both of magnetizable material, a shoulder between the two constructed to leave spaces between said core and casing, one at each end, separated by the shoulder, a coil occupying each of the spaces thereby forming two magnets, one at each end, in combination with a plate-armature for each of the magnets, and guiding devices for the armatures whereby the same are directed to register with and cover both casing and core.

Signed at New York city, in the county of New York and State of New York, this 15th day of May, A. D. 1894.

ALEXIS LE BLANC.

Witnesses:

WILLIAM SUTPHEN,
WM. C. COX.