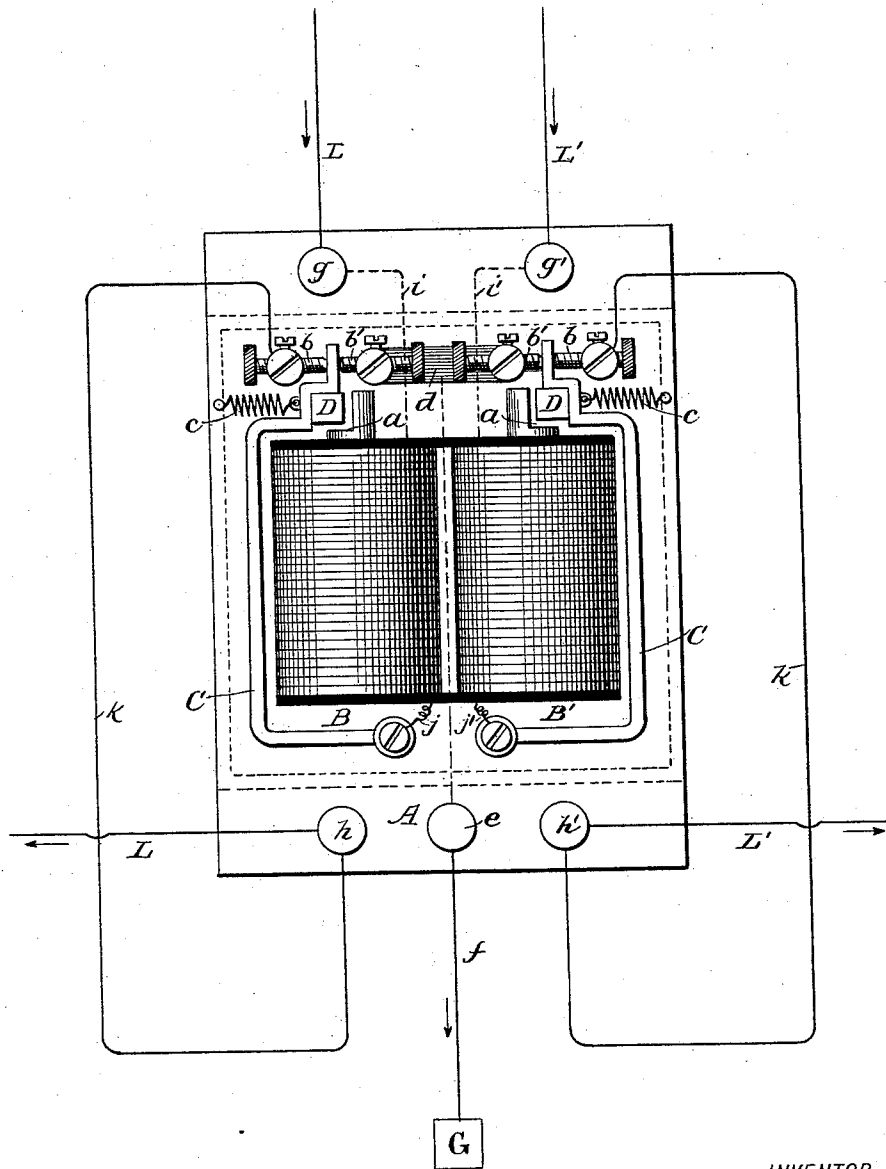


(No Model.)

J. F. GANDUXER.  
AUTOMATIC LINE DISCHARGER.

No. 523,889.

Patented July 31, 1894.



WITNESSES:

*J. H. Griswell*  
*C. Sedgwick*

INVENTOR

*J. F. Ganduxer*  
BY *Munn & Co*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JACINTO FERRER GANDUXER, OF GRACIA, SPAIN.

## AUTOMATIC LINE DISCHARGER.

SPECIFICATION forming part of Letters Patent No. 523,889, dated July 31, 1894.

Application filed November 4, 1892. Serial No. 450,960. (No model.) Patented in Spain August 12, 1890, No. 10,923, and in France December 24, 1891, No. 210,420.

*To all whom it may concern:*

Be it known that I, JACINTO FERRER GANDUXER, of Gracia, (Barcelona,) Spain, have invented a new and Improved Automatic Line Discharger, (which has been patented in Spain, No. 10,923, dated August 12, 1890, and in France, No. 210,420, dated December 24, 1891,) of which the following is a specification, reference being had to the accompanying drawing, which is a front elevation of my improved line discharger, showing its connection with the lines.

The object of my invention is to construct an automatic device for insertion in electrical lines, which will discharge the said lines when an abnormal current passes, as for example, when lightning strikes a telegraph, telephone or electric light wire, or when a conductor carrying a heavy current of electricity for lighting or power purposes crosses a telephone or telegraph line.

My invention consists in an electro-magnet, an armature lever carrying an armature and prolonged between a pair of electrical contacts, a retractile spring for holding the armature lever normally against the back contact spring, and line and ground connections, all as will be hereinafter more fully described.

My improvement can be used for either a double or single system of conductors. In the present case I have shown a double instrument connected with two electrical lines.

To the base A are secured the electro-magnets B, B', which are of the bar form. The poles of the magnets are prolonged beyond the helixes and in the extremities of each pole are formed right angled notches a. To the base A, at the end of the magnet opposite the polar extremity is pivoted an armature lever C, which is bent twice at right angles and reaches over toward the pole of the magnet. The lever C carries an armature D, which projects into the notch a of the magnet pole, and the said lever C is prolonged beyond the armature between contact screws b, b', arranged on opposite sides thereof. To the base A is secured one end of the retractile spring c, the other end of which is connected with the armature lever C.

In the duplex instrument like that shown

in the drawing, the two halves are exactly alike but oppositely arranged with respect to each other, and the inner posts supporting the inner contact screws b' are connected together by the strip d, which is connected by a wire through the binding post e with the ground wire f leading to the ground G. The base A is provided at the top with binding posts g, g' and at the bottom with binding posts h, h', arranged on opposite sides of the binding post e. The current passes from the lines L, L', to the magnets B, B', through the binding posts g, g' and connecting wires i, i', and the current flows from the magnets B, B' through wires j, j' to the levers C, thence through the back contact screws b, wires k and binding posts h, h'. The retractile springs c are adjusted so as to cause the armature levers to resist any attraction due to the normal current; as a consequence, the current passes through the instruments and the lines, and the armature levers are held away from the contact screws b', but when an abnormal current passes through the magnets the armatures D are attracted, the levers C are brought into contact with the screws b' and the current passes to the ground direct, thus preventing injury to any instruments that may be placed in the line beyond the line discharger.

The discharge screws are arranged at right angles to the axis of the magnet and in line with the poles of the magnet, so that when an arc is formed between the lever C and the contact screws b, the lines of force emanating from the magnet will extinguish the arc.

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

In a line discharger, the combination of the magnet B provided with a notched pole, the bent armature lever C carrying the armature D, the retractile spring c, the contact screws b, b', arranged at right angles to the axis of the magnet and the line connections, substantially as specified.

JACINTO FERRER GANDUXER.

Witnesses:

CARLOS ESPRIN,  
FRANCISCO BOATELLA.