

No. 858,941.

PATENTED JULY 2, 1907.

G. BAEHR.
ELECTROMAGNET.
APPLICATION FILED APR. 4, 1907.

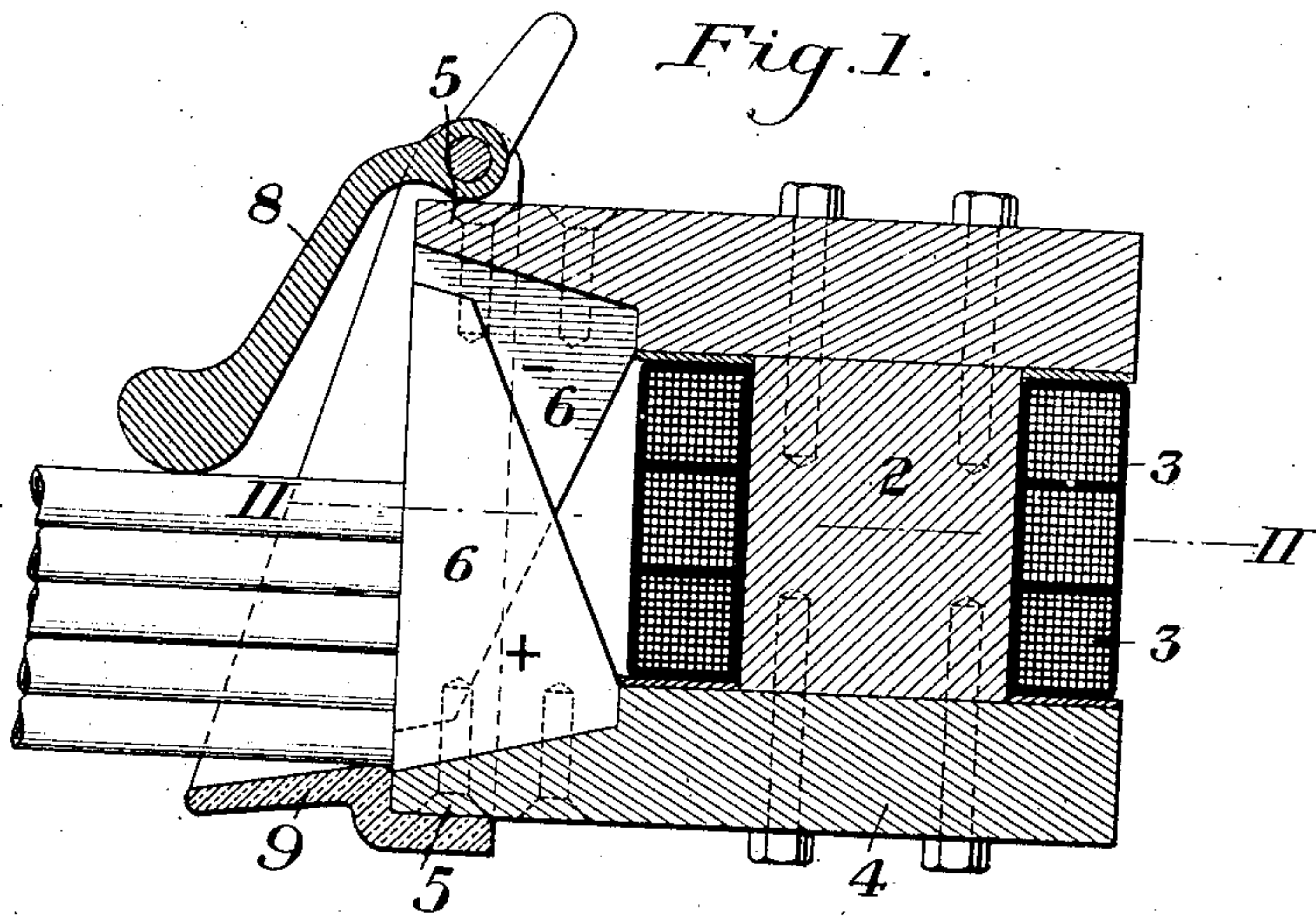


Fig. 2.

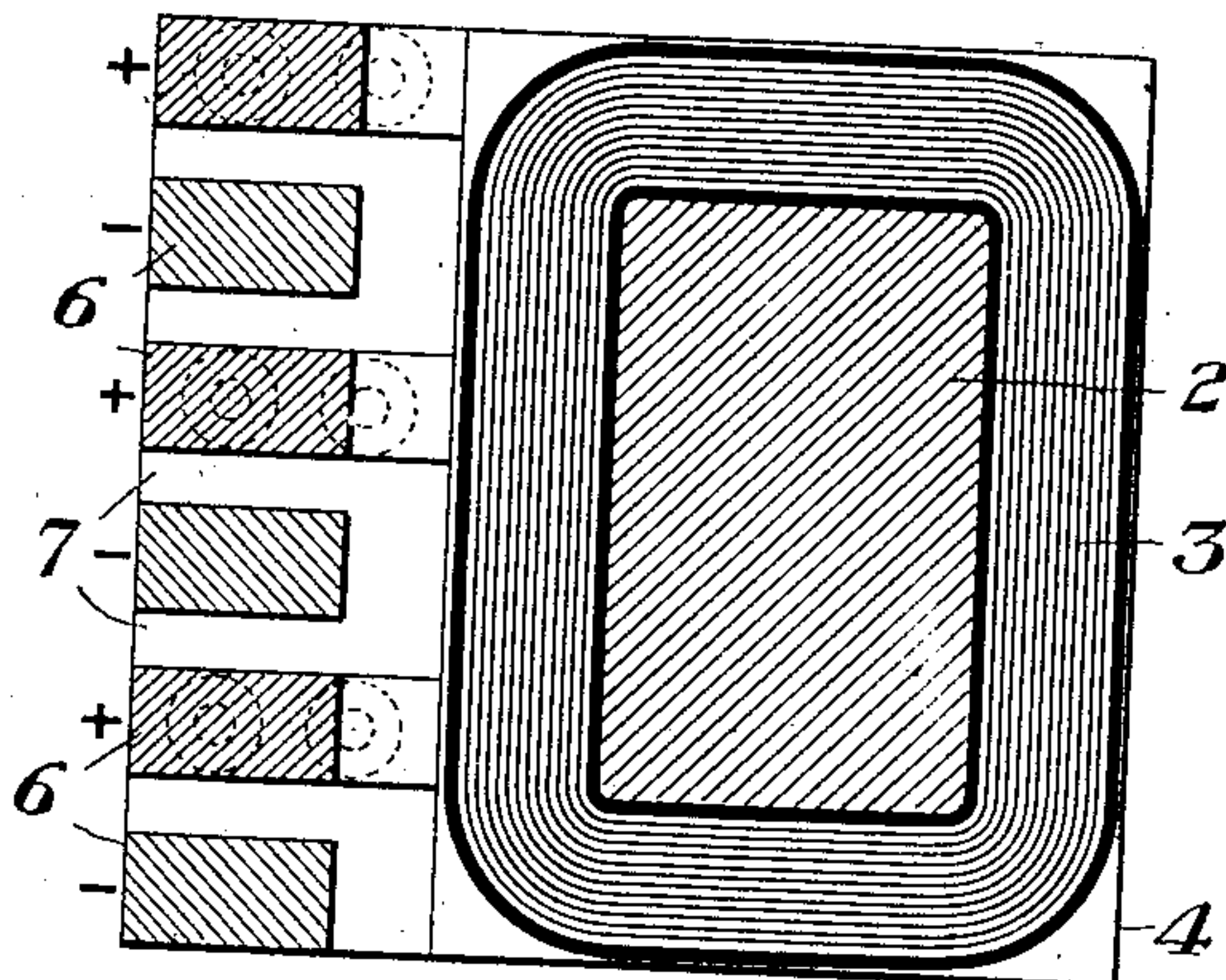
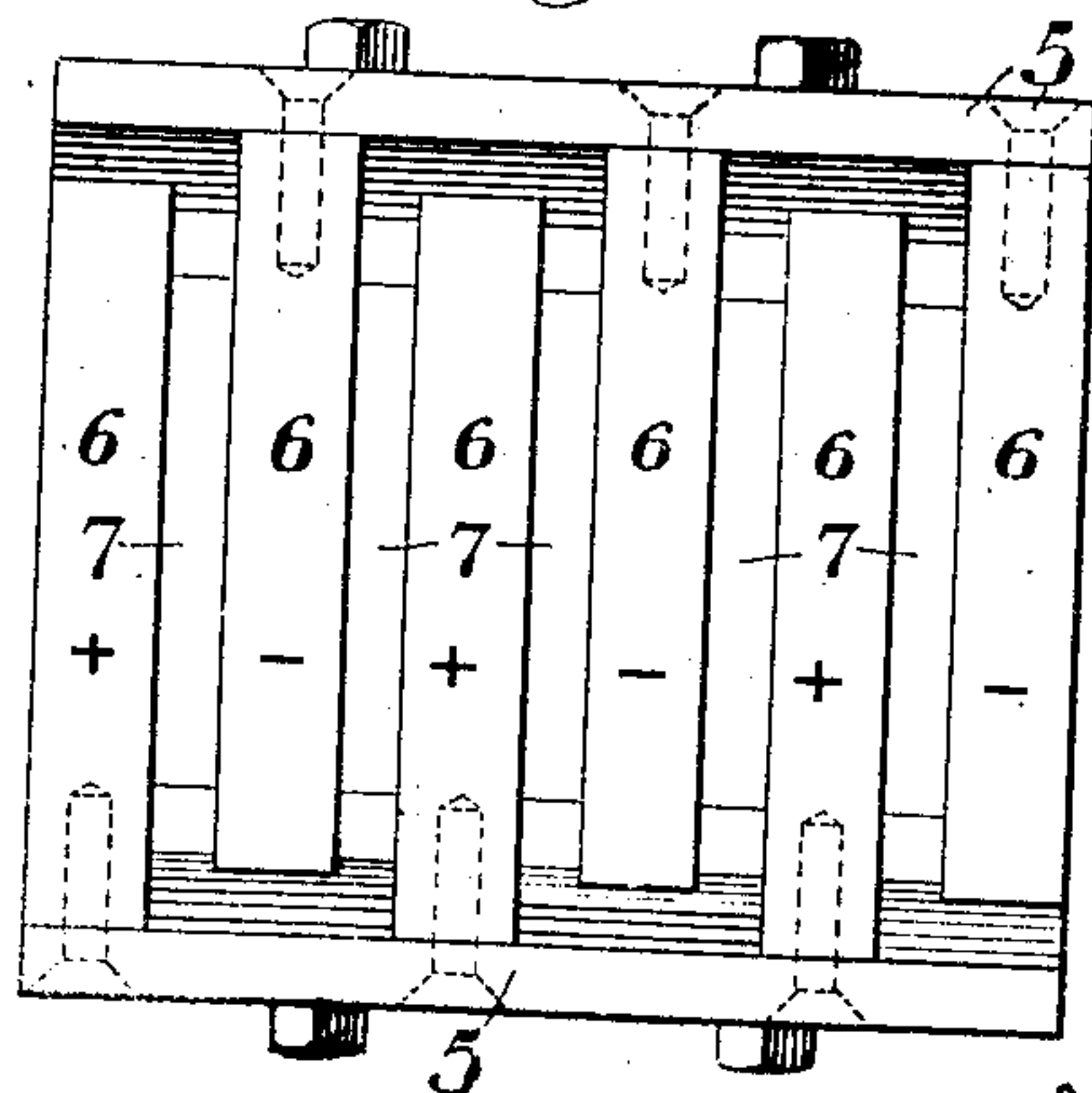


Fig. 3.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

GEORGE BAEHR, OF McKEESPORT, PENNSYLVANIA, ASSIGNOR TO NATIONAL TUBE COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

ELECTROMAGNET.

No. 858,941.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed April 4, 1907. Serial No. 366,321.

To all whom it may concern:

Be it known that I, GEORGE BAEHR, of McKeesport, Allegheny county, Pennsylvania, have invented a new and useful Electromagnet, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a section of one form of magnet embodying my invention; Fig. 2 is a section on the line II—II of Fig. 1; and Fig. 3 is an end view of the magnet.

My invention has relation to the class of electro-magnets, and is more particularly designed to provide an electro-magnet for use in lifting or pulling various metal objects of magnetic character, such as rods, pipes, etc., in which operation the magnet is applied to the ends of the articles to be drawn for the purpose of moving them in a horizontal or inclined plane. It is designed to provide a magnet of this character having a magnetic surface of extended area, and so constructed and arranged that there will be substantially uniform distribution of the lines of magnetic force throughout the entire lifting face.

With this object in view, the invention consists in a magnet having its lifting face composed of a plurality of pole pieces of alternating polarity, and separated from each other by openings or air gaps of relatively small dimensions, whereby the ends of the pipes, rods, or other objects to be drawn or lifted will not enter such openings or spaces.

The invention also consists in the novel construction, arrangement and combination of parts, all substantially as hereinafter described.

In the accompanying drawings, the numeral 2 designates the spool or core portion of the magnet upon which the energizing coils 3 are placed, any suitable number of such coils being employed according to the size and strength of the particular magnet to be constructed. This spool or core is secured between the cheek or side pieces 4 having projecting polar portions 5, each of which carries a plurality of pole pieces 6. These pole pieces are arranged in two sets, one set being carried by each of the side pieces 4 and alternating with each other, so that the lifting face of the magnet is formed by these pole pieces of alternating polarity,

each pole piece being separated from its neighbor or neighbors by an intervening opening or air gap 7 of relatively narrow size. The number of these pole pieces and their particular form will depend upon the size of the magnet and the particular purpose for which it is intended. I prefer, however, to form them of straight parallel pieces, as shown.

I preferably hinge or pivot a clamping member 8 of magnetic material to one of the cheek pieces, as shown in Fig. 1, to assist in holding the pipes or other articles. To the other cheek piece is secured a support 9 for the ends of the articles.

By this construction, I am enabled to provide a magnet having a large area of lifting surface throughout which there is a substantially uniform distribution of the lines of magnetic force. This enables the magnet to be used for simultaneously lifting or pulling a large number of pipes, rods, or other objects of comparatively small cross-section, the air gaps between the pole pieces being sufficiently restricted to prevent the ends of the objects from passing between them.

Various changes may be made in the details of construction and arrangement by those skilled in the art without departing from my invention.

What I claim is:—

1. An electro-magnet, having side portions or cheeks with an energizing coil between them, and a plurality of pole-pieces carried by each of said cheeks, the pieces carried by one cheek alternating with those carried by the other cheek; substantially as described.

2. An electro-magnet, having side portions or cheeks with an energizing coil between them, a plurality of pole-pieces carried by each of said cheeks, the pieces carried by one cheek alternating with those carried by the other cheek, said pieces being separated from each other by relatively narrow spaces; substantially as described.

3. An electro-magnet comprising a core, parallel side pieces at the ends of the core, and a plurality of pole pieces carried by each of said side-pieces, and extending substantially parallel with the core, adjacent pole pieces being separated from each other and of alternating polarity; substantially as described.

In testimony whereof, I have hereunto set my hand.

GEORGE BAEHR.

Witnesses:

GEO. E. KIRK,

FRANK W. YOUNG.