

No. 641,214.

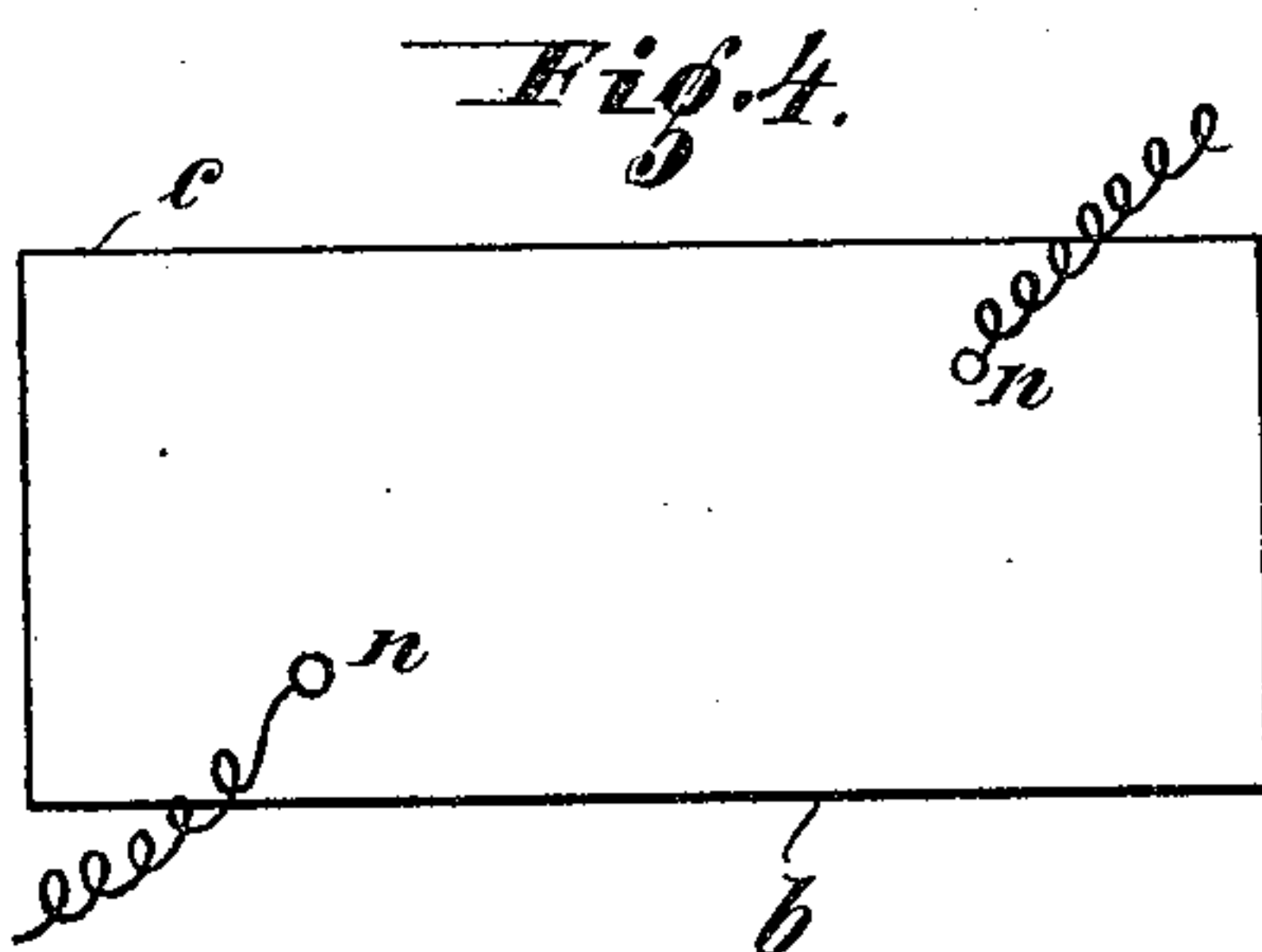
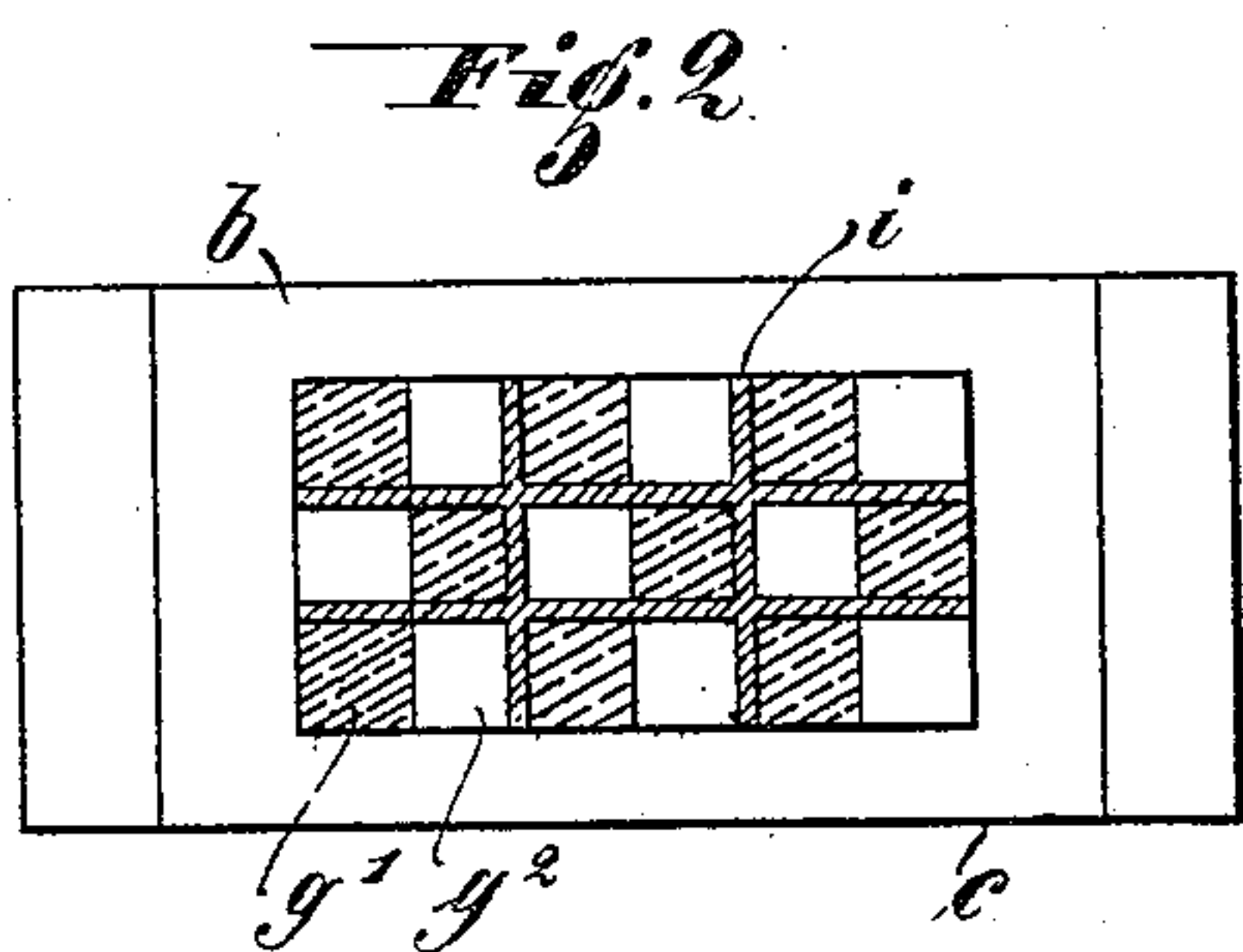
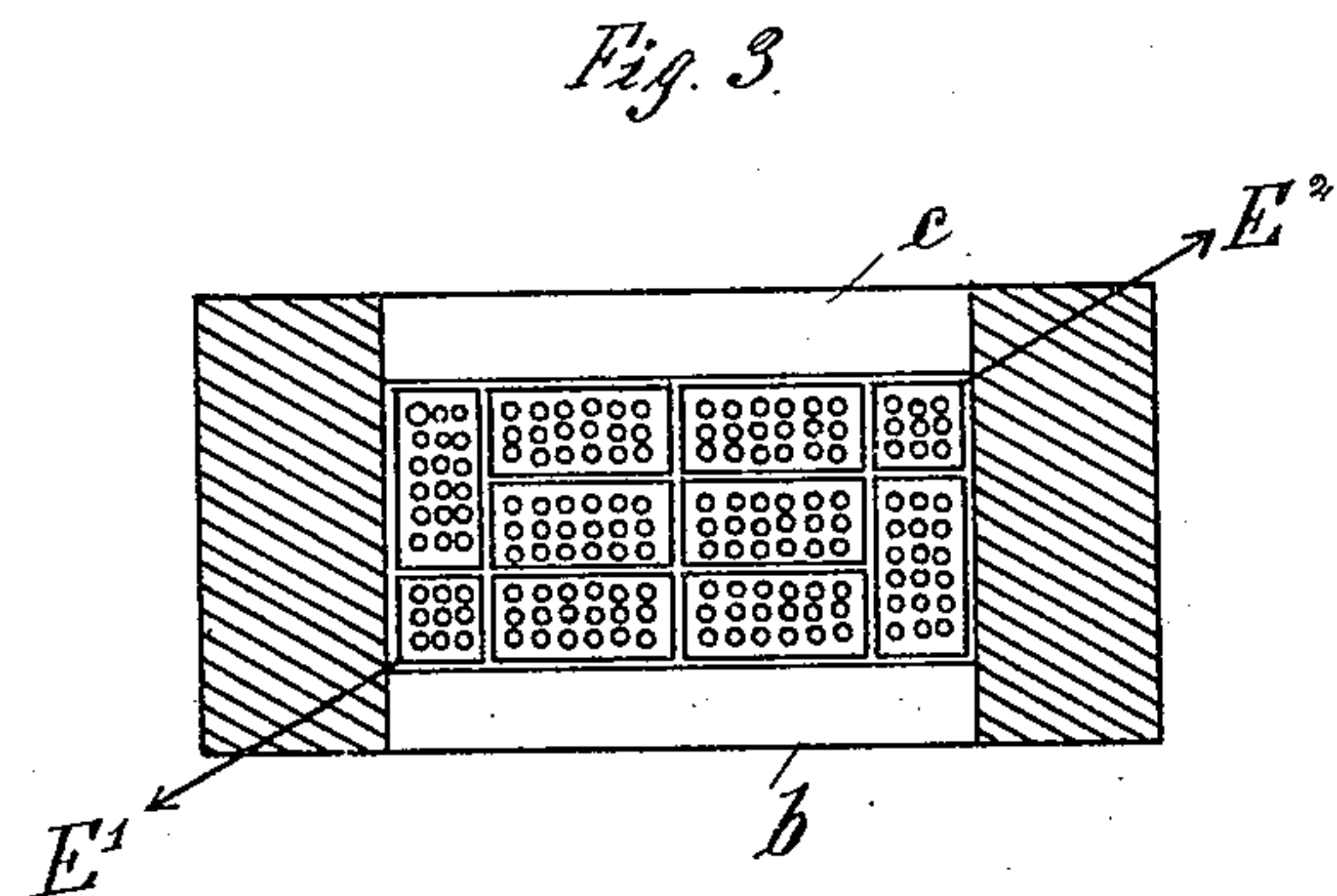
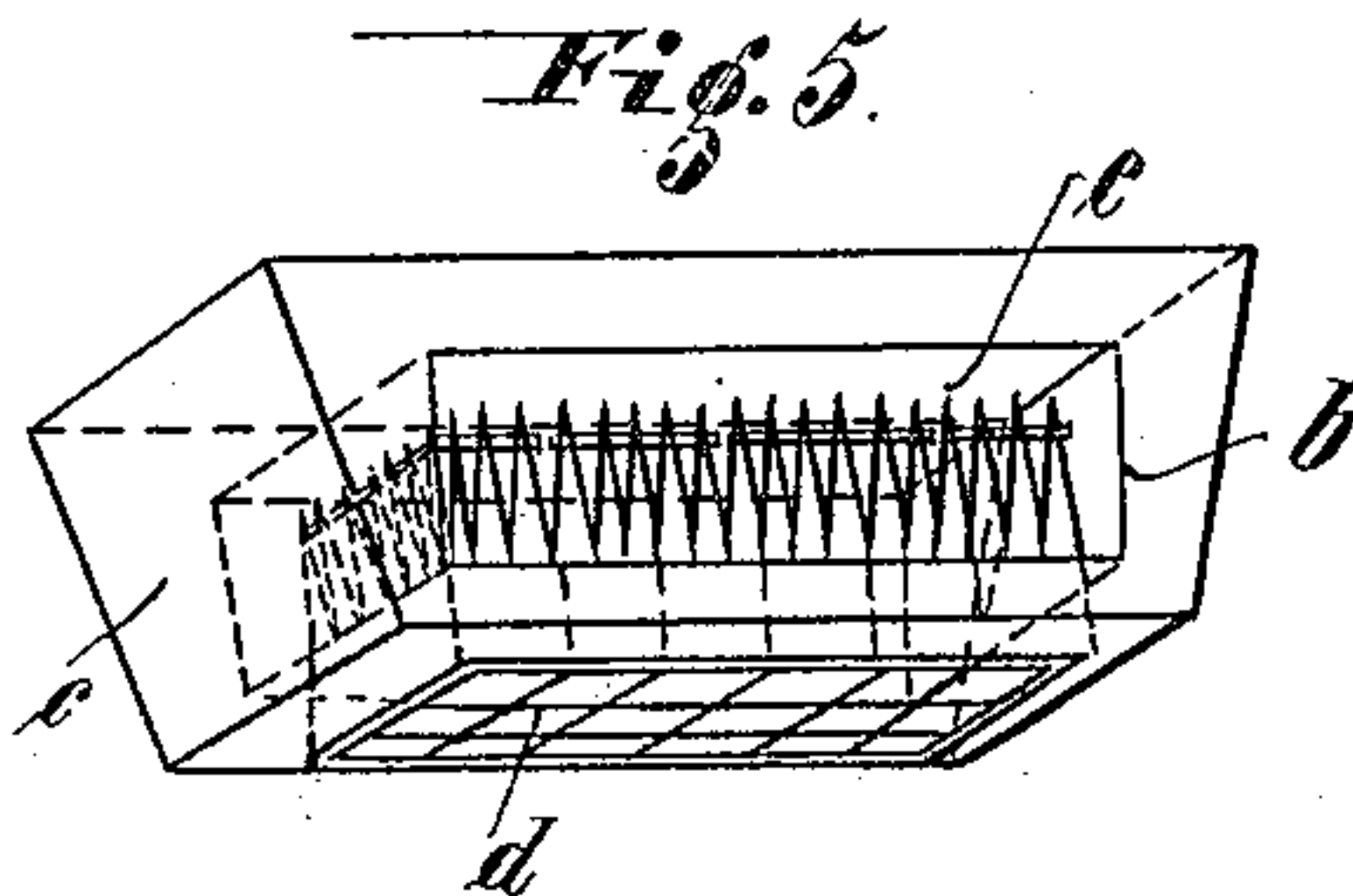
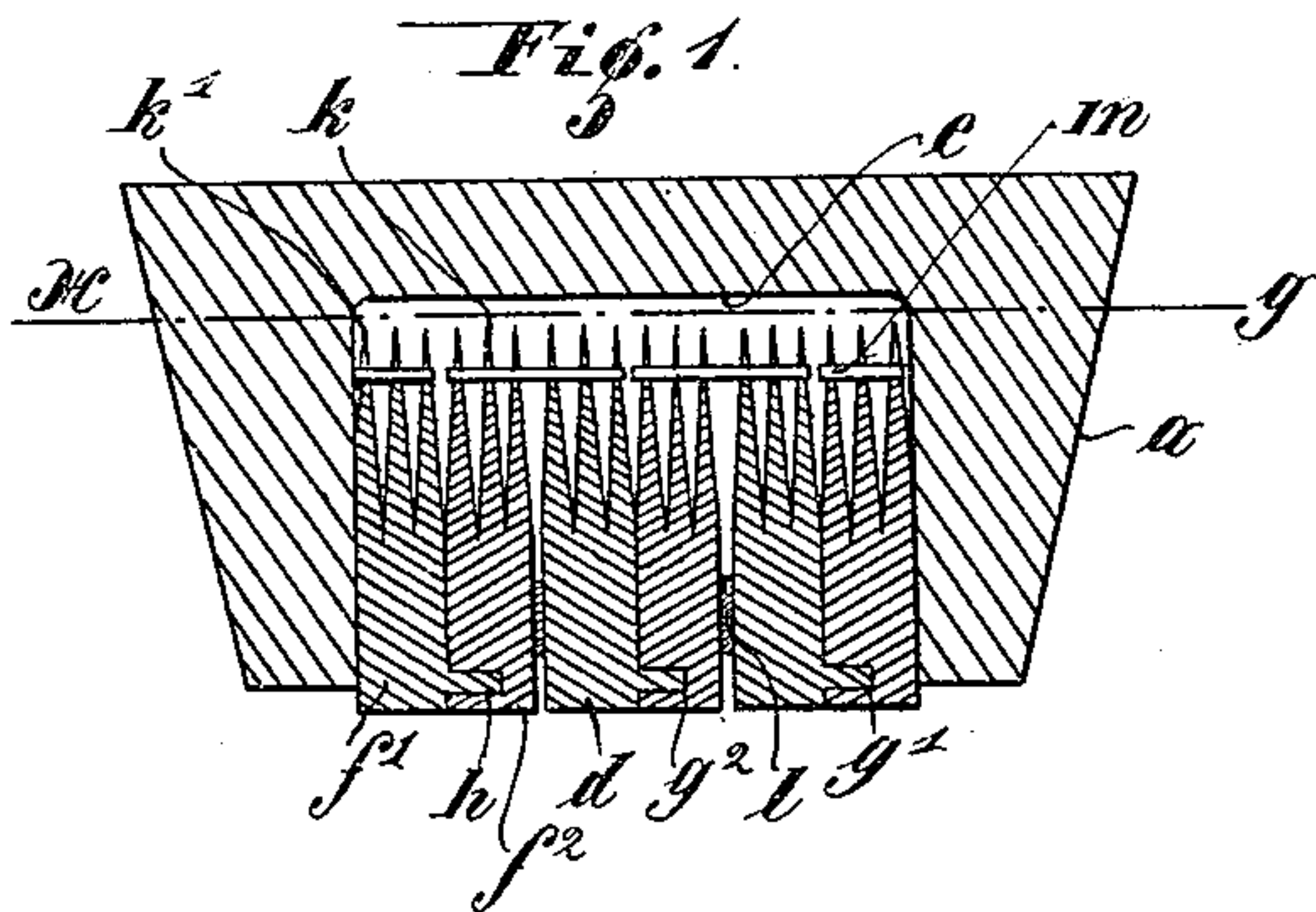
Patented Jan. 9, 1900.

J. MATTHIAS.

THERMO ELECTRICAL BUILDING BRICK OR BLOCK.

(Application filed Dec. 13, 1898.)

(No Model.)



Witnesses
Georg Griefmann
Ferdinand Kobitzsch

Inventor.
Joseph Matthias
by
Dr. J. Franz & Co.
his attorneys

UNITED STATES PATENT OFFICE.

JOSEPH MATTHIAS, OF STUTTGART, GERMANY.

THERMO-ELECTRICAL BUILDING BRICKS OR BLOCKS.

SPECIFICATION forming part of Letters Patent No. 641,214, dated January 9, 1900.

Application filed December 13, 1898. Serial No. 699,172. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MATTHIAS, telegraph secretary, of 55 Gymnasiumsstrasse, Stuttgart, in the German Empire, have in-

5 vented certain new and useful Improvements in Thermo - Electrical Building Bricks or Blocks, (for which an application for a patent has been filed in Germany, dated June 4, 1898,) of which the following is a specification.
10 This invention relates to building bricks or blocks—such as ordinary bricks, arch-stones, flagstones and the like—for the thermo-electrical utilization of waste heat. These differ from those described in the United States of
15 America Patent No. 255,885, in that they have hollow spaces which are not completely filled with the thermo elements, which spaces form when the blocks are laid in position continuous passages for the air, conducting away the
20 heat, and which passages may be closed when required.

In the accompanying drawings are shown means for carrying this invention into effect.

25 Figure 1 is a vertical section, Fig. 2 an under side view, Fig. 3 a section taken on line $x y$ of Fig. 1, Fig. 4 a plan view, and Fig. 5 a perspective view, of a building brick or block.

The brick or block a is made of a suitable fireproof material, cement, or the like, and is
30 provided with a recess e , in which a suitable number of thermo-electrical elements are so inserted that the end surfaces $g' g^2$ of the electrodes $f' f^2$ completely close the recess e on one side d . For this purpose the end sur-
35 faces of the electrode on this side are of square or rectangular section. The electrodes $f' f^2$ of an element are so cast one in the other that a projection h on one electrode f' takes into the other electrode f^2 . Each element is sepa-
40 rated from its neighbor by an insulating layer of mica or the like. These insulating layers may consist of the same material as the stone itself and may be so arranged that the side d is formed with cells in which the electrodes
45 can be placed. Of course besides these layers of the same material as the stone itself other layers of mica or the like may be employed at the same time. At their other ends the electrodes terminate in a number of points
50 $k' k^2$ in such a manner that the points of every two adjacent electrodes of opposite polarity are connected together by a metal conductor m . The conductor of the diagonally
55 opposite electrodes $E' E^2$ is led through holes $n n$ in the wall of the brick or block and

serves as a means of connection with the corresponding electrodes of the neighboring brick or block.

These building bricks or blocks can be employed in all places where their surfaces will
60 be irradiated by heat, and vertical, horizontal, or inclined structures can be built up or lined therewith in exactly the same manner as bricks, stones, arch-pieces, flags, &c., of the usual kind are ordinarily employed, but
65 are so placed that the surfaces from which the ends of the electrodes project are next the warm space. The bricks or blocks are also so arranged that the before-mentioned hollow spaces form continuous passages or chan-
70 nels through which is drawn—by means of a ventilator, for example—a current of cold air, which cools the points of the inner ends of the electrodes. Thus the wall of a house ex-
75 posed to the midday sun can be lined or covered in this manner, and by means of the aforesaid cooling electrical energy can be obtained. For the same purpose in work-rooms
in which during the evening or night a num-
80 ber of gas - flames burn or in cases where heat-radiating machines are used the whole ceiling may be lined with bricks or blocks of this kind.

Having now described my invention, what I claim, and desire to secure by Letters Pat-
85 ent, is—

1. For the thermo-electrical utilization of waste heat hollow building bricks or blocks partly closed on two opposite sides by the pointed ends of the electrodes and completely
90 closed on the side which is turned toward the source of the heat by the other ends of the electrodes and the insulating material between them.

2. For the thermo-electrical utilization of
95 waste heat hollow building bricks or blocks partly closed on two opposite sides by the pointed ends of the electrodes and completely closed on the side which is turned toward the
100 source of the heat by the other ends of the electrodes and the insulating layers or bands of the material of the brick or block or still of other insulating layers between them.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JOSEPH MATTHIAS.

Witnesses:

C. WALBER BAUER,
WM. HAHN.