

(No Model.)

J. E. MEEK.
ELECTRIC HEATER.

No. 567,248.

Patented Sept. 8, 1896.

Fig. 1.

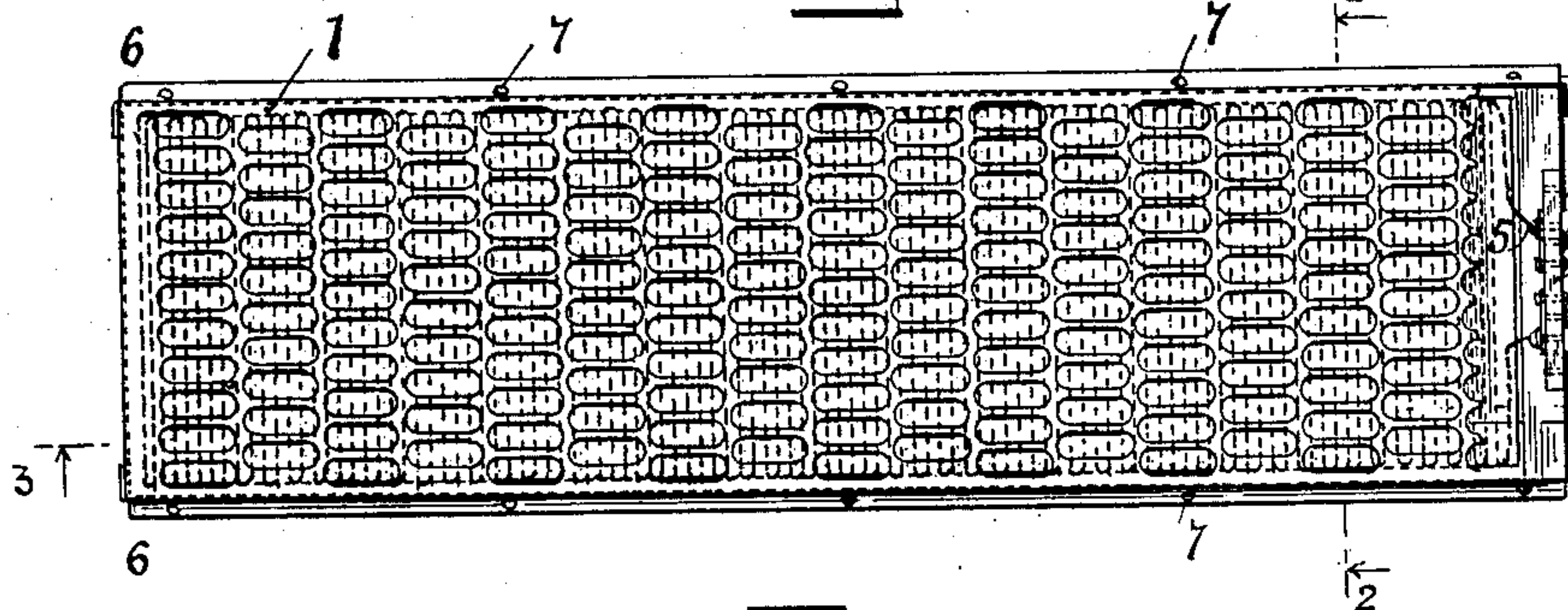


Fig. 2.

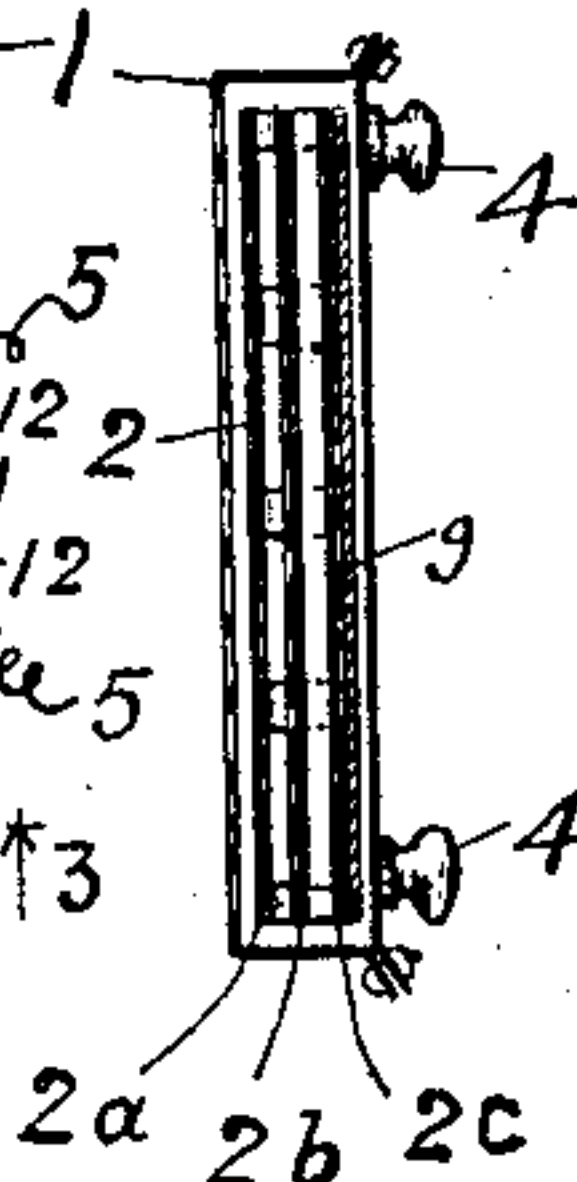


Fig. 3.

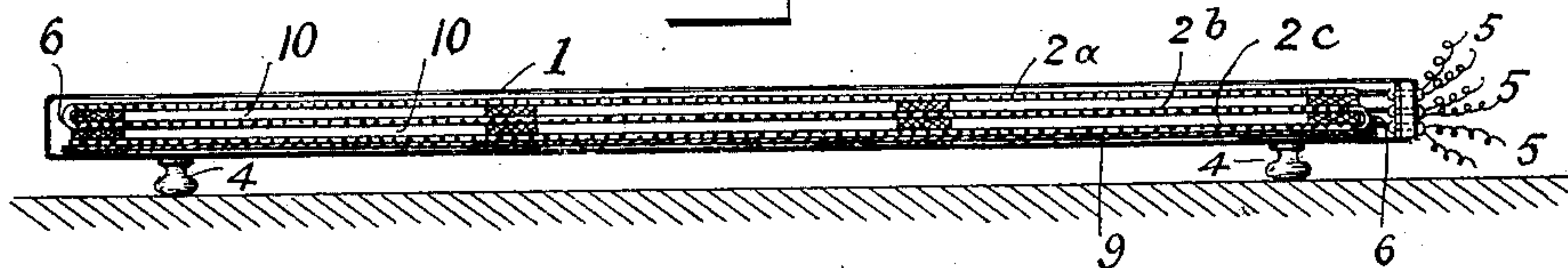


Fig. 4.

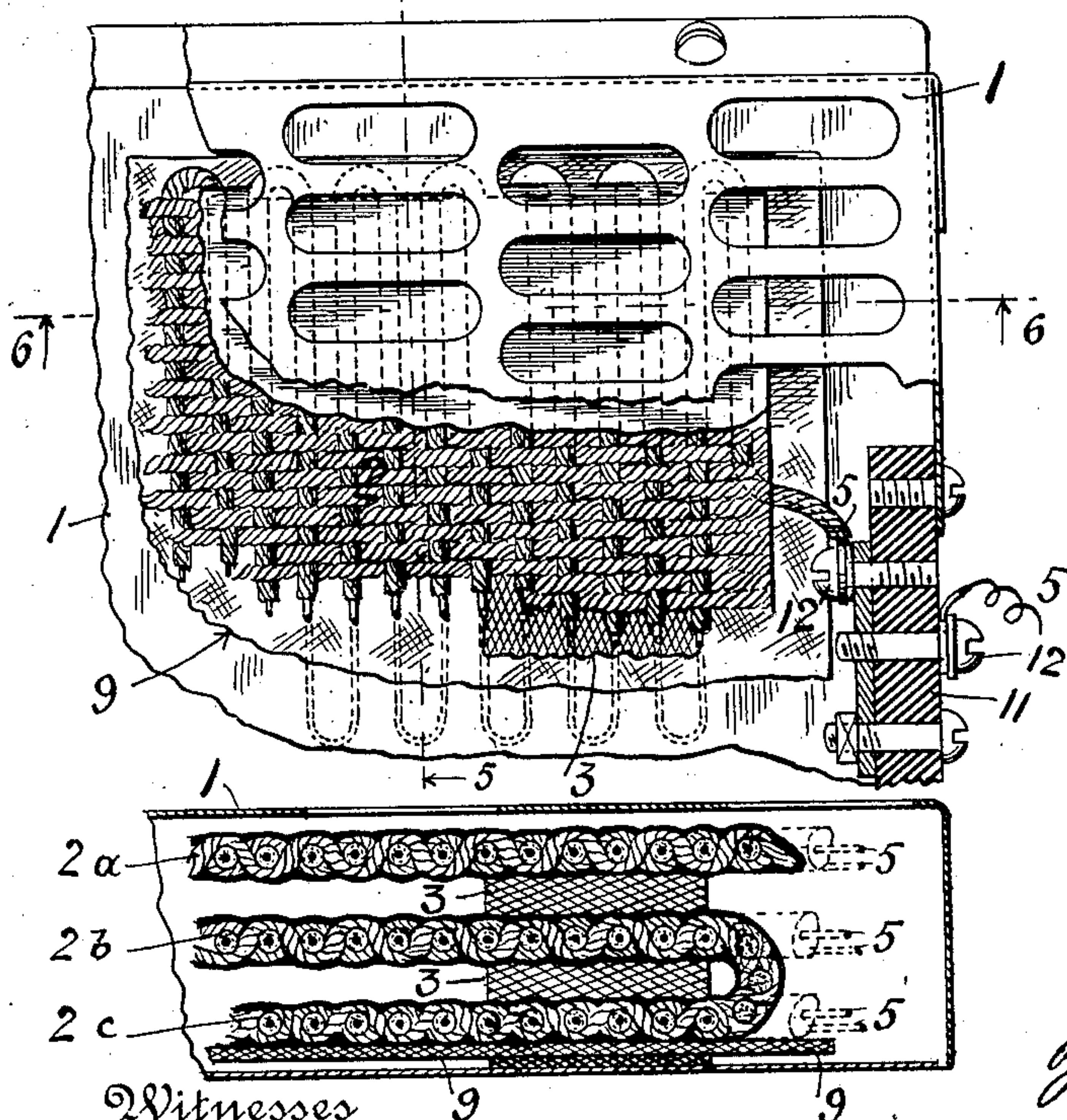


Fig. 5.

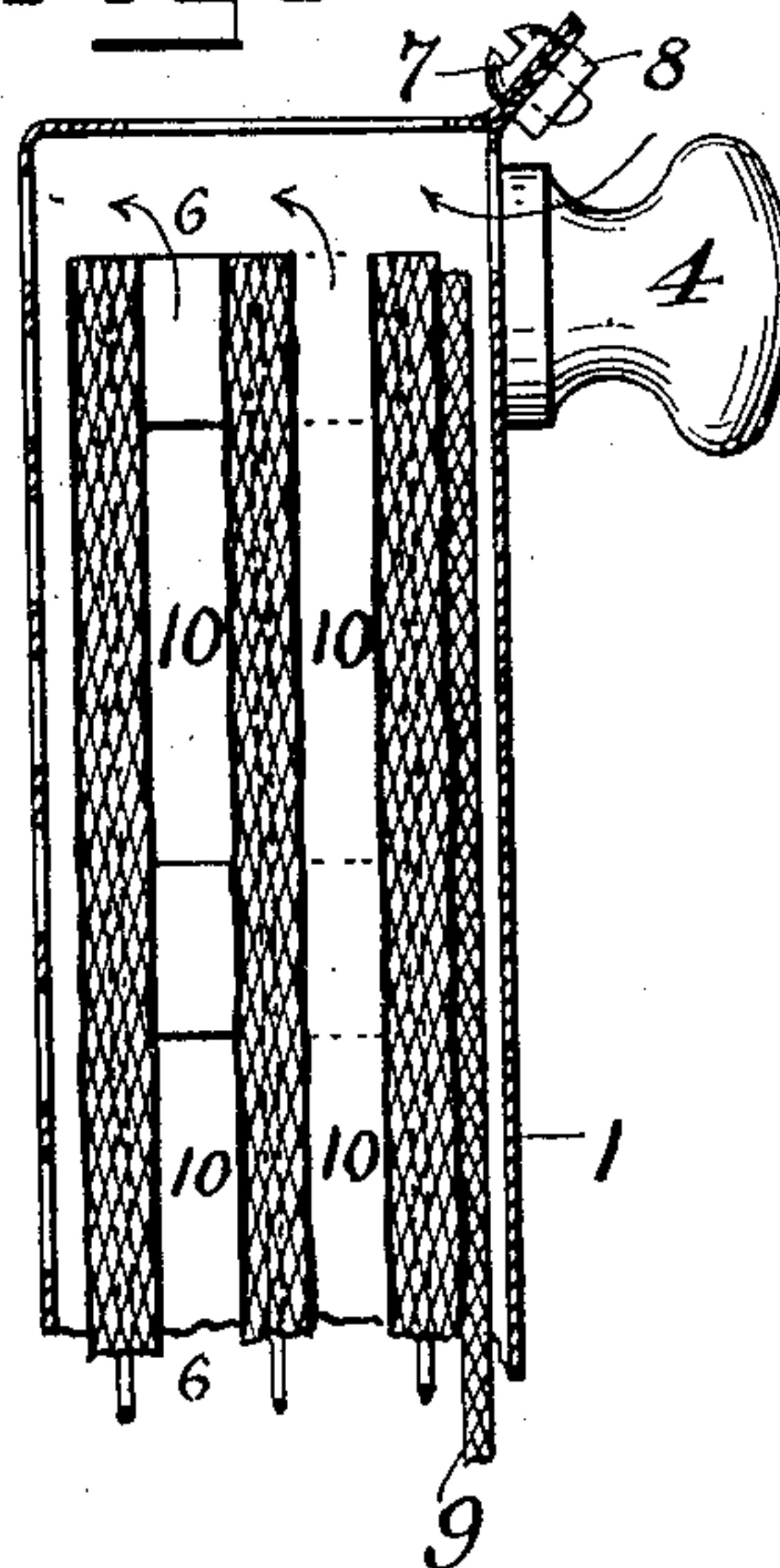


Fig. 6.

John Emory Mack
Inventor

By his Attorney *A. Parker Smith*

Witnesses 9
Chas. Hanemann
Edw. Tietz Jr.

UNITED STATES PATENT OFFICE.

JOHN EMORY MEEK, OF NEW YORK, N. Y., ASSIGNOR TO THE H. W. JOHNS MANUFACTURING COMPANY, OF SAME PLACE.

ELECTRIC HEATER.

SPECIFICATION forming part of Letters Patent No. 567,248, dated September 8, 1896.

Application filed January 7, 1896. Serial No. 574,598. (No model.)

To all whom it may concern:

Be it known that I, JOHN EMORY MEEK, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Electric Heaters, (Case B;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to heaters for converting electric energy into heat for the purpose of warming apartments in general, and more especially is designed to provide a convenient form of heater to be placed under the seats of street-cars of the type in which the said seats are placed crosswise of the car. The form of electric heaters heretofore in general use has been so complicated or bulky that the question of division so as to place one under each cross-seat in a car has been one of some practicable difficulty. To avoid this and produce a heater which shall be light, compact, and capable of such arrangement, I have designed the form illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my heater with a portion of the casing removed. Fig. 2 is a cross-section on line 2 2 of Fig. 1. Fig. 3 is a cross-section on line 3 3 of Fig. 1. Fig. 4 is an enlarged detail view of a portion of my heater with parts broken away. Fig. 5 is a cross-section on line 5 5 of Fig. 4. Fig. 6, is a cross-section on line 6 6 of Fig. 4.

The essential feature of my invention consists of a woven fabric of asbestos or similar incombustible and insulating fiber which has an electric conductor embedded in the woof-thread thereof throughout certain sections, the intermediate portion of the fabric having the conductor omitted from such woof-thread and the fabric being bent into one or more folds along these lines where the conductor has been so omitted. This forms a compact but effective heater which can be easily placed in a light sheet-iron casing.

Throughout the drawings, like reference-figures refer to like parts.

1 is the inclosing frame or case of the heater,

which may be made of light sheet-iron or wire or some other metal construction.

2 generally is the woven fabric of asbestos fiber, which is bent into several folds 2^a 2^b 2^c. These folds are kept at proper distances one from the other and given additional insulation one from the other by the interposing strips 3, which may be of asbestos millboard or hard fiber or other insulating material.

4 4 are little knobs or projections on the frame 1, and serving as means of lifting the same slightly from the floor when the heater is placed upon the same.

5 5 are the terminals of one section of the electrical conductor embedded in the woof-thread of one of the folds of the heater. This wire or other electric conductor is omitted from the woof-thread of the fabric along the lines 6 6, on which the folding of the fabric occurs, and, if desired, a portion of such fabric may be cut away along said lines of folding, as is shown in Fig. 5.

7 is a bolt, and 8 is a nut coacting therewith, to hold the various parts of the metal shell 1 together, as shown in Fig. 5.

9 is a layer of asbestos millboard or other insulating material placed inside of the heater-shell and on which the lower part of the heater rests.

10 10 are air-spaces left between the folds of the fabric.

11 is a piece of hard fiber or other insulating substance, in which the binding-screws 12 12 for the electric connections are mounted. The fabric containing the electrical conductor is treated with any proper "size" or material for stiffening the same and rendering the fiber waterproof before the said fabric is bent into the folds shown. The substance which I have used for this apparatus is what is known as "japan." The various sections, electrically supported one from the other, formed by the folds and arrangement of the conductors above described, may be connected together at their terminals 5 5 in series or in multiple arc, as is preferred. I prefer, however, to connect corresponding sections of the different heaters placed under the various seats of the car in series, so that the heating-current may be sent through the bottom

fold of each heater in the car, or through the bottom fold and the one next to it in each heater, and so on. In this way an equable distribution of the heat, whether the same is
5 great or small, is produced.

The method of operation of the invention is of course clear from the foregoing description. The heaters are placed under the seats, and may be loose or fastened. The terminals
10 of the electrical conductors are connected up, as may be desired, and thrown into circuit with the current from the source of supply to the car-motor.

Having therefore described my invention,
15 what I claim as new, and desire to protect by Letters Patent, is—

1. An electric car-heater which consists of a woven fabric of asbestos, or similar incombustible and insulating fiber, with an electric
20 conductor embedded in the woof of the fabric, the said fabric being folded upon itself one

or more times and having a proper quantity of "size" or other stiffening material applied thereto, substantially as described.

2. An electric car-heater which consists of
25 a woven fabric of asbestos or similar incombustible and insulating fiber, with an electric conductor embedded in the woof of the fabric, the said fabric being folded upon itself one or more times and having a proper quantity
30 of "size" or other stiffening material applied thereto, said fabric being divided into two or more electrically separate sections by the omission of the conductor from the thread of the woof along and adjacent to the line of
35 each fold, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN EMORY MEEK.

Witnesses:

A. PARKER SMITH,
F. S. MILLER.