

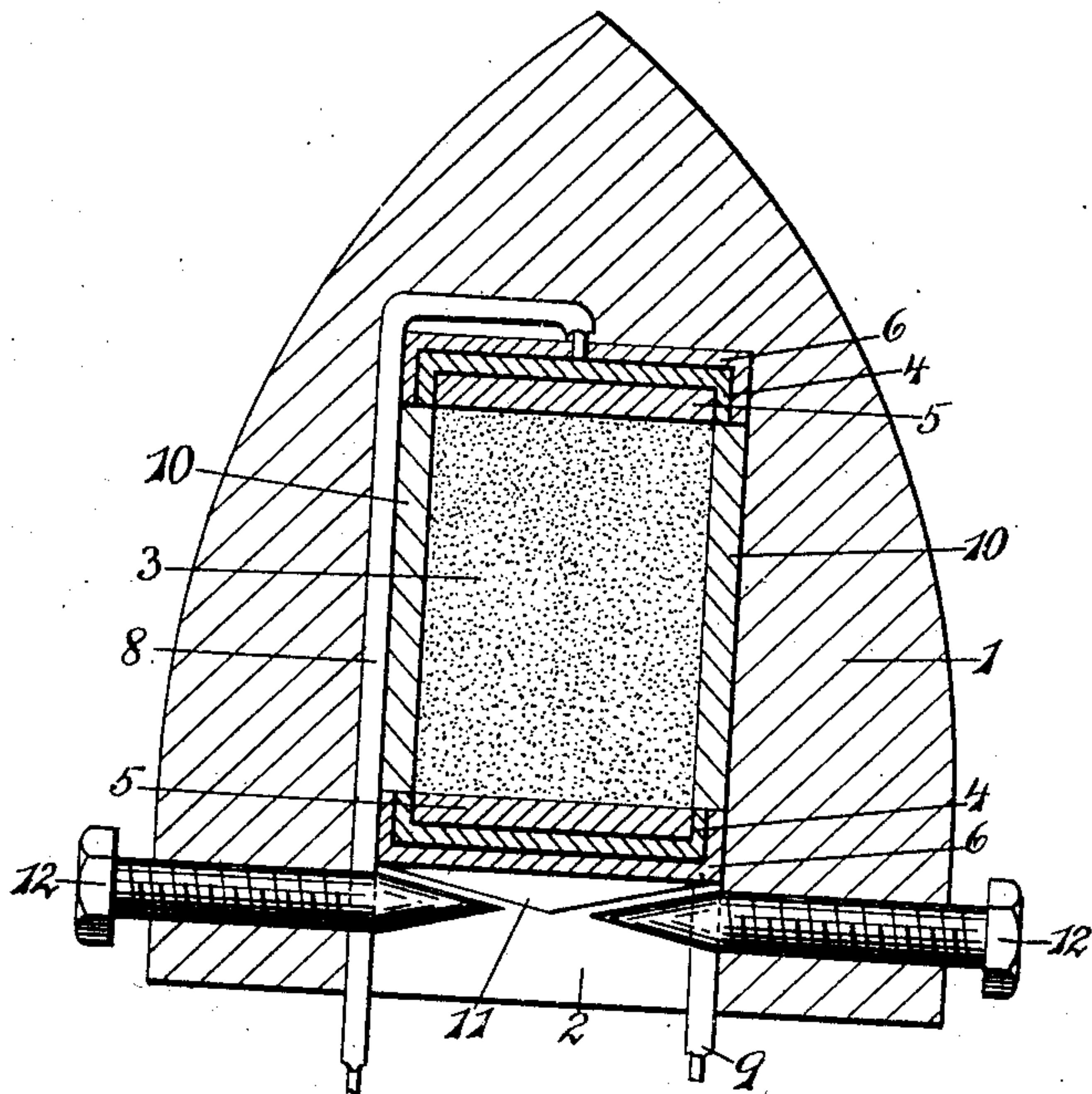
No. 670,667.

W. S. HADAWAY, JR.  
ELECTRIC HEATER.

Patented Mar. 26, 1901.

(No Model.)

(Application filed Sept. 24, 1898.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## ELECTRIC HEATER.

SPECIFICATION forming part of Letters Patent No. 670,667, dated March 26, 1901.

Application filed September 24, 1898. Serial No. 691,770. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM S. HADAWAY, Jr., a citizen of the United States, residing in the city, county, and State of New York, have  
5 invented a certain new and useful Improvement in Electric Heaters, of which the following is a specification.

Electric heaters have been heretofore made where an electrothermal - resistance compound composed of compressed carbon powder mixed with an inert and resisting material is inserted within an appropriate metallic heater. In order to secure the best results in heaters of this class, it is important that  
15 the electrothermal resistance be held in place while in use under a high pressure well protected from the oxidizing action of the air and in the best possible contact with the conductors whereby current is fed to it. In the  
20 furtherance of these ends I have devised a form of metallic receptacle for the resistance composition, one form of which is illustrated in the accompanying drawing, which is a horizontal median section of a pressing-iron provided with my invention.  
25

In the drawing the iron to be heated is shown at 1, the same being provided with an appropriate recess 2 for the reception of an electrothermal resistance. The resistance 3,  
30 whether made as above described or otherwise, is slipped into the recess 2, being held in place at its ends by the metal caps 4, preferably containing appropriate abutting pieces of graphite 5. The metal caps are provided  
35 with an insulation of enamel, mica, or other appropriate material, as shown at 6. The groove 7 in the side of the recess 2 accommodates one of the insulated feeding-conductors 8, which makes contact, as shown, with the  
40 metal cap 4 at the bottom of said recess. The other conducting - wire makes appropriate contact with the outer metal cap 4 and is shown at 9. In permanently adjusting these various elements I prefer to use the following  
45 means: The conductor 8 and its cooperating cap 5 are first placed in the relation shown to the insulation 6 at the bottom of the recess 2, the abutting piece 5 being firmly fitted into said cap. The whole iron 1 and its contents  
50 are then raised to a red heat and the resist-

ance 3 is put in place, as illustrated. While the iron is still hot, finely-powdered soapstone is poured into the spaces around the resistance, as shown at 10. This powder being well packed and pressed, the outer abutting  
55 graphite and its metal cap are adjusted and the outer insulation 6 carefully placed over them. Upon the outer surface of this insulation is placed the wedge 11, preferably made of cast-iron, and while the iron is still hot  
60 the screws 12 are turned down upon the two surfaces of the wedge as tightly as possible. The screw ends will of course cooperate with the wedge 11 to place the contents of the recess 2 under great compression, and as the  
65 iron itself shrinks on cooling this pressure will be greatly increased. Consequently the resistance and cooperating parts will be squeezed into intimate contact, and harmful release of pressure and subsequent heating  
70 in use will be prevented.

My invention in its broader aspects is not limited to a method of construction involving heating of the iron, since many forms of resistance material would greatly suffer upon  
75 being thus heated.

What I claim is—

1. In an electric heater, an electrothermal resistance, conducting - abutments therefor, one of which includes a double-faced wedge,  
80 and two opposing screws adapted to approach and recede from one another across the faces of said wedge.

2. In an electric heater, an electrothermal resistance, conducting - abutments therefor,  
85 one of which includes a wedge, and a screw adapted to travel transversely over the outer surface of said wedge.

3. The method of constructing electric heaters having a metallic body which consists in  
90 heating said body, adjusting the electrothermal resistance and its abutments within the same while hot, clamping the resistance in place under compression, and allowing the metal body to shrink through cooling, upon  
95 the clamping means.

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Witnesses:

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