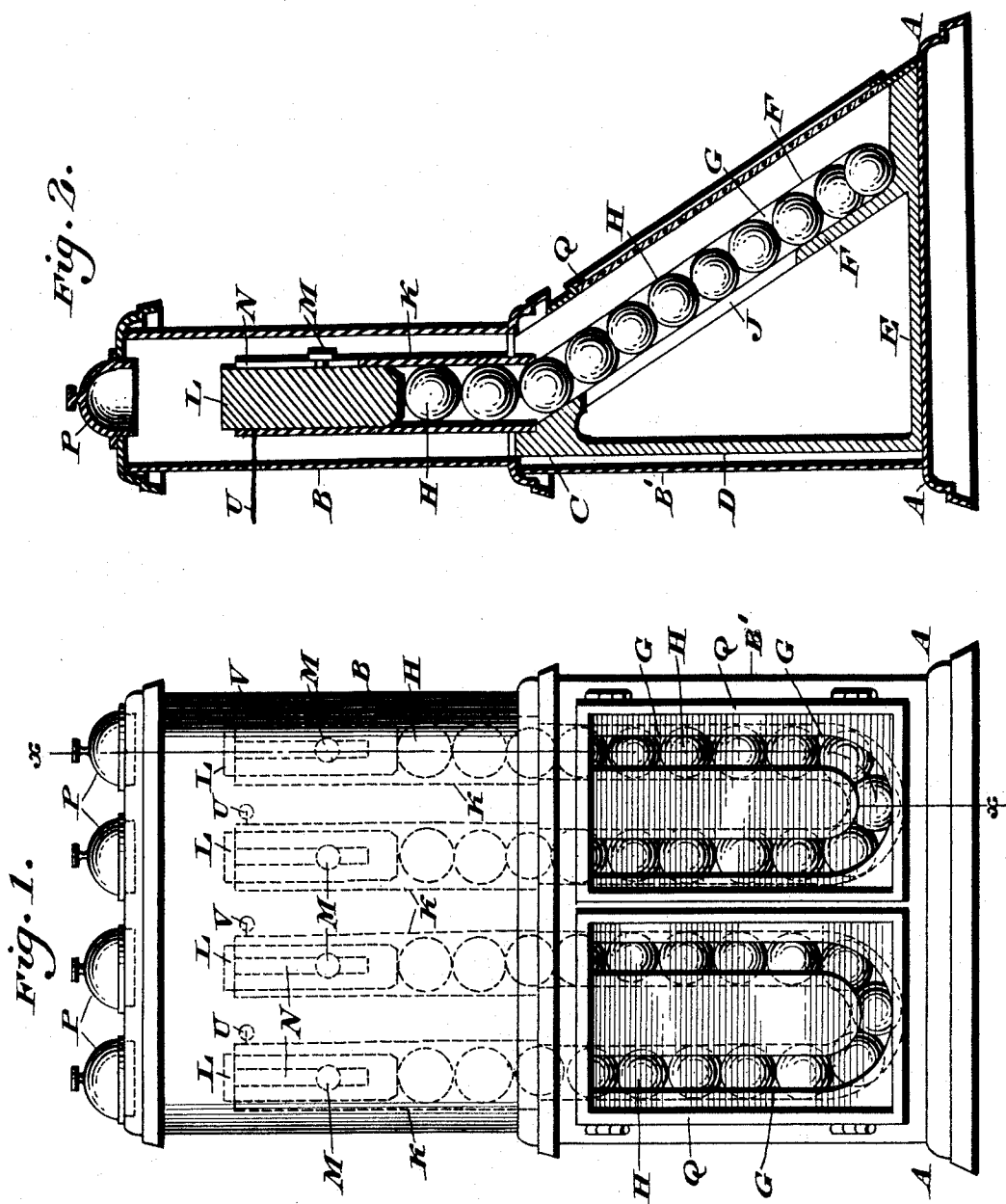


(No Model.)

G. B. FRALEY.
ELECTRIC HEATER.

No. 585,309.

Patented June 29, 1897.



WITNESSES:

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ELECTRIC HEATER.

SPECIFICATION forming part of Letters Patent No. 585,309, dated June 29, 1897.

Application filed October 28, 1896. Serial No. 610,276. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. FRALEY, a citizen of the United States, residing in the city of Denver, in the county of Arapahoe, State of Colorado, have invented a new and useful Improvement in Electric Heaters, which improvement is more fully set forth in the following specification and accompanying drawings.

My invention consists of an improved construction of electric heater which is simple in construction and effective and economical in its operation, provision being made for enabling the blocks, spheres, or other shaped elements, which may be carbon or other conductive material, to be automatically fed and readily visible when the current is passing through the same, thereby adding a pleasing effect to the apparatus while in operation, and thus affording a source of light as well as heat.

It also consists of novel means for causing the conductive elements to automatically contact with each other until they are entirely used up or disintegrated, provision being made for removing the particles or refuse of disintegration without interrupting the operation of the heater.

It further consists of novel details of construction, all as will be hereinafter fully set forth, and specifically pointed out in the claims.

Figure 1 represents a front elevation of an electric heater embodying my invention. Fig. 2 represents a section on line *xx*, Fig. 1. Fig. 3 represents a modified form of conductive elements which may be employed.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates the base of the heater, and B' the lower casing, which is supported thereupon, the upper casing B being supported upon said lower casing B'.

C designates a triangular or other shaped hollow block, which may be of fire-brick or other suitable material, the same consisting of the base portion E, the upright wall D, and the inclined wall F, which is provided with a U-shaped channel G therein, whose contour will be apparent from Fig. 1, the block C in the present instance having substantially the

form of a right-angled triangle, of which the long side or wall F is the hypotenuse, although it will of course be evident that said block may have other shapes and that the channel G need not necessarily be of U shape in every instance.

J designates a slot in the rear of the wall F through which particles fall from the elements H, which are supported in the U-shaped channel G during the operation of the apparatus, all the refuse and products of disintegration, &c., being received upon the base E and readily removed therefrom by suitable doors or openings (not shown) in the back of the apparatus or by other convenient means.

The front of the wall F is partially open, so that the conductive elements or spheres H can be seen therethrough, as indicated in Fig. 1, thereby enabling the same to be visible when heated or incandescent and to radiate the heat from the apparatus with great effectiveness, thereby adding to the cheerfulness of the apartment in which the heater may be located.

K designates shells or tubes of metal or other suitable material, which are supported upon the upper portion of the block C and are adapted to also receive a portion of the elements H, all of the latter being held in juxtaposition by means of the blocks or weights L, which are constructed of suitable conductive material and are placed in the upper portion of said tubes K, which latter, it will be seen, form a continuation of the U-shaped channel G and serve as a receptacle for the carbon elements H, as will be evident from Fig. 1.

M designates a pin or stud which is attached to each of the blocks L and is adapted to slide in the upright slot N, the walls of which latter serve as a guide therefor, the descent of said blocks being limited by the contact of said pin with the lower wall of said slot.

P designates a series of covers or caps which are suitably supported and permit access to the interior for the purposes of inspection, repairs, &c.

Q designates doors which are mounted upon the wall F of the casing A, so as to cover the channels G, said doors being provided with isinglass, mica, or similar transparent material through which the effect of the incandes-

cent or highly-heated elements can be readily observed.

R designates a modified form of blocks of suitable conductive material which may be used instead of the spheres H, if desired, said blocks consisting of the body portion S and the pointed, tapered, or truncated ends T, which are adapted to contact with each other when the apparatus is in operation.

U and V designate, respectively, conductors for ingress and egress of electricity.

The operation is as follows: The current is conducted into one of the blocks L through one of the conductors, as U, and after passing through the elements H is then conveyed from the adjacent block L of the circuit through the other conductor, as V, whereupon the conductive elements contained in the channels will be heated to incandescence and will effectively and economically afford heat as well as light, especial attention being called to the fact that as the elements in said channels or channel disintegrate they still, by reason of the force of gravity, continue their contact with each other. Thereby it will be seen that the apparatus is automatic and self-feeding by reason of the contour of the channels G, within which the conductive elements are contained, it being necessary when it is desired to replenish said recess or channel G to merely remove the caps P and the weights or blocks L and insert additional elements in place. The descent of the blocks or weights L is limited by the contact of the pins M with the lower wall of the recesses N of the tubes K, as stated, thus indicating when it is time to replenish the chamber G with the conductive elements.

It will of course be understood that any desired number of the channels or recesses G may be assembled in proximity to each other, according to the size of the heater required, and that although I have shown two in the present instance, as in Fig. 1, the number of the same may be increased or diminished according to requirements, and that when the heater is in operation the parts are all practically inclosed air-tight within the casing and a partial combustion takes place behind the elements H, as is evident.

It will be understood that although I have shown the channel within the block as U-shaped, I do not desire to be limited thereto in every instance.

It will further be apparent that changes may be made by those skilled in the art in the manner of mounting and assembling the above parts which will come within the spirit of my invention, and I do not therefore desire to be restricted in every instance to the exact construction I have herein shown and described.

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

1. In an electric heater, a block having a substantially upright channel therein, inde-

pendent elements of conductive material located in said channel, means for causing said elements to contact with each other throughout the operation of the heater, and means for supplying electricity to said elements.

2. In an electric heater, a block of fire-brick or other suitable material, having a channel located in the same, in combination with conductive elements located within said channel, the front of the latter being cut away, so that said elements are visible therethrough, while the rear of said channel is slotted so as to permit the refuse, products of disintegration, &c., to fall therefrom.

3. In an electric heater, a block of fire-brick or similar material, a U-shaped channel therein, tubes suitably supported above said channel and forming continuations of the latter, conductive elements located in said channel, a weight or block held in each of said tubes, and adapted to bear upon said elements and a casing for said heater.

4. In an electric heater, a block of fire-brick or similar material, having an inclined side, a channel therein, elements of conductive material contained in said channel, the latter being open at the top, and slotted at its rear, doors of transparent material attached to said side, and means for causing said elements to always contact with each other.

5. In an electric heater, a block having a channel therein, elements of conductive material located in said block, a chamber in the rear of said channel, and in communication with the latter, and means for causing said elements to always contact with each other.

6. In an electric heater, a block having a channel therein open in front and rear, and suitably inclosed, a plurality of conductive elements located in said channel, means for keeping said elements in contact with each other, and means for conducting electricity through said elements.

7. In an electric heater, a block having an upright U-shaped channel, a plurality of elements contained therein, means for causing said elements to automatically contact with each other, and means for indicating when said channel should be replenished.

8. In an electric heater, a block having a channel, and a plurality of conductive elements contained therein, in combination with means for indicating when said channel should be replenished, and means for causing said elements to contact with each other.

9. In an electric heater, a block having a plurality of channels therein, upright tubes forming continuations thereof, a plurality of elements of conductive material contained in said channel, weights resting on said material and contained in said tubes, slots in the latter and projections on said weights adapted to pass through said slots.

10. In an electric heater, a block having an upright channel therein, conductive elements located in said channel, weights resting on said elements, means for supplying electricity

to the latter, and means for limiting the downward movement of said weights.

11. In an electric heater, a block having a channel therein, and elements of conductive material located in said channel, in combination with means for causing said elements to contact with each other, and means for supplying an electric current to said elements.

12. In an electric heater, a series of independent elements of conductive material,

means for holding said elements in juxtaposition, and means for causing said elements to contact with each other in combination with means for supplying electricity to said elements.

GEORGE B. FRALEY.

Witnesses:

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E. HAYWARD FAIRBANKS.