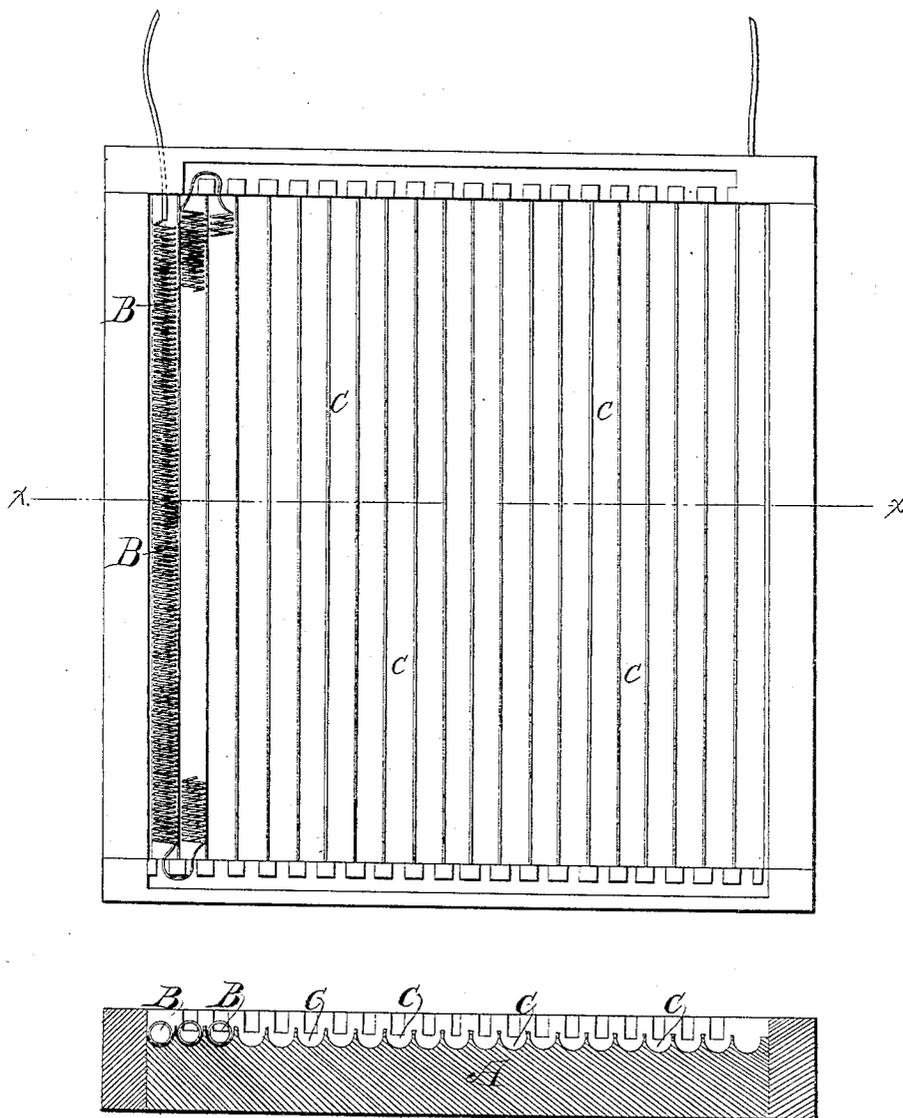


G. B. SIMPSON.
ELECTRICAL HEATING APPARATUS.

No. 25,532.

Patented Sept. 20, 1859.



UNITED STATES PATENT OFFICE.

GEO. B. SIMPSON, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVED ELECTRICAL HEATING APPARATUS.

Specification forming part of Letters Patent No. 25,532, dated September 20, 1859.

To all whom it may concern:

Be it known that I, GEO. B. SIMPSON, of Washington city, in the District of Columbia, have invented a new and Improved Electro-Heater; and I do hereby declare that the following is a full and exact description.

The insulating-base of my electro-heater, as represented by the letter A in the drawing, is common soapstone about one inch thick and eight inches square, on the surface of which are cut twenty-one semicircular grooves entirely across it, about three-eighths of an inch wide and three-eighths of an inch deep. The interior base is surrounded by a frame of the same material, about one and a half inch thick and one and one-fourth inch deep, attached to the interior base by two screws on each side, all of which frame is elevated about one-eighth of an inch above the surface of the interior base. In the center of the surface of the frame, on the two sides opposite the ends of the parallel semicircular grooves, is cut a square groove about three-eighths of an inch deep and three-eighths of an inch wide and eight inches long. Square grooves of the same depth and width in the inner side of the two sides of the frame opposite the ends of the semicircular parallel grooves are also cut parallel with the grooves, making twenty square grooves and nineteen standards or uprights on one side, and twenty-two square grooves and twenty-one standards or uprights on the other. Platina or other metallic wire is coiled to fit the semicircular parallel grooves in the surface of the interior square of the supporting and electrical non-conducting or insulating base, as represented by the letter B in the drawing. A hole is drilled through one side of the frame directly opposite the first parallel groove in the interior base, through which a metal wire is passed and soldered to the platina or other metallic-wire coil, which coil is then carefully laid in the first semicircular parallel groove across the interior base. The single platina or other metallic wire is then passed through the square groove in the frame and around the standard or upright; then the coil is again laid through the second semicircular groove across the interior base to the opposite side. The single platina or other metallic wire is then passed through the square groove in the frame and around the standard or upright, and thus back and forth alternately until the whole twenty-one (or any desired number of grooves and extent of surface) semicircular grooves are filled with the platina or other metallic coil, which is again

connected with and soldered to another metal wire passed through a hole drilled through the frame of the same side as the first, making a heating-surface of eight inches square, and a connected surface of insulated single metal wire and platina or other metallic wire in coil, which perfects the description of my insulated platina or other metallic wire coil, helical electrode, or electro-heater, as represented by the letter C in the drawing.

In this instance I use the common soapstone as a non-conductor of electricity, and perfect supporter and insulator of the platina or other metallic coil, for the reason that none of the manufactured substances non-conducting of electricity can be obtained in this city, and for the further reason that the platina or other metallic coil cannot be suspended or detached from a supporting base, for when in an incandescent state the weight of the metal straightens the wire and destroys the coil. I use the open form for the purpose of demonstrating the perfect insulation of the metallic coil or helical electrode, and the certainty of generating heat sufficient to warm rooms, boil water, cook victuals, &c., by passing currents of electricity over the combined arrangement over coils of platina or other metallic wire properly incased in metallic tubes or open vessels insulated with any of the well-known substances non-conducting of electricity.

For the generation of the electric current I use any of the well-known electric or galvanic batteries now in use.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

The insulation of the metallic coil or helical electrode, which I call an "electro-heater," and the successful generation of heat by passing currents of electricity over a coil or coils of platina or other metallic wire resting on and supported by a non-conducting electrical base, or incased in metallic tubes or open vessels insulated with any of the well-known substances non-conducting of electricity, all of which is in conformity with the specifications of my caveat filed in the Patent Office on the 16th day of December, 1857, as hereinbefore described.

GEO. B. SIMPSON.

Witnesses:

THOMAS C. DONN,
J. F. KING,
GEO. McDONALD LAMBERT.