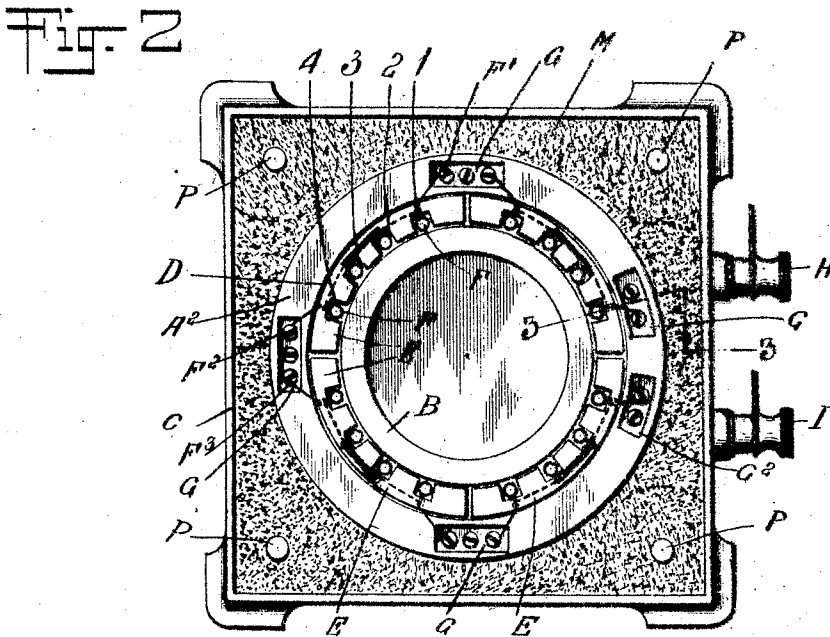
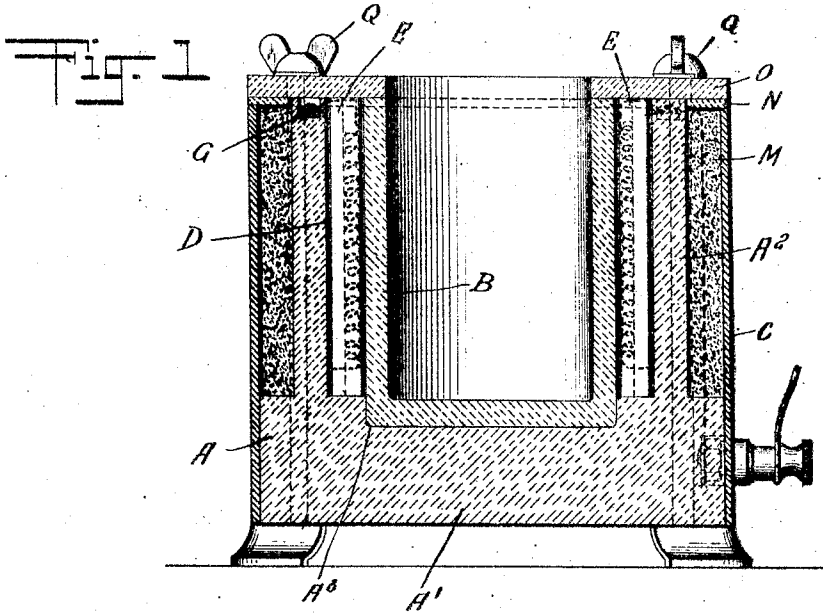


M. M. KOHN.
ELECTRIC HEATER.
APPLICATION FILED OCT. 1, 1909.

983,291.

Patented Feb. 7, 1911.

2 SHEETS-SHEET 1.



Witnesses
Morris Lessin
E. J. Madock

Inventor
Milton M. Kohn
By his Attorney
Frank W. Schley

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2 SHEETS—SHEET 2.

Fig. 3

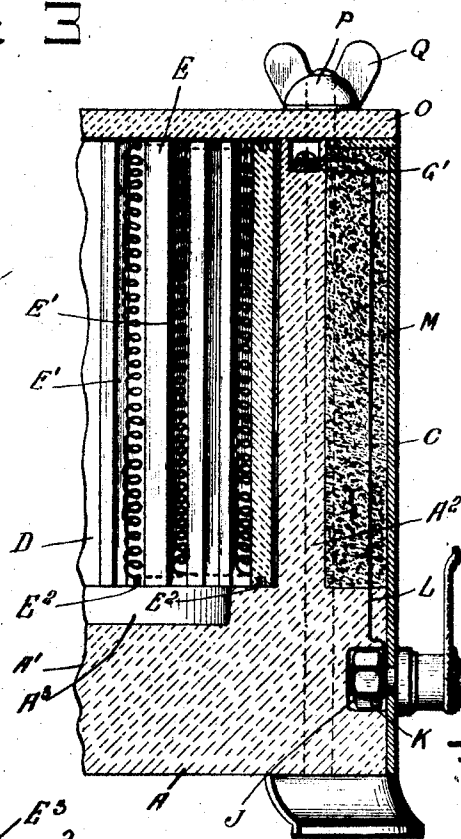


Fig. 5

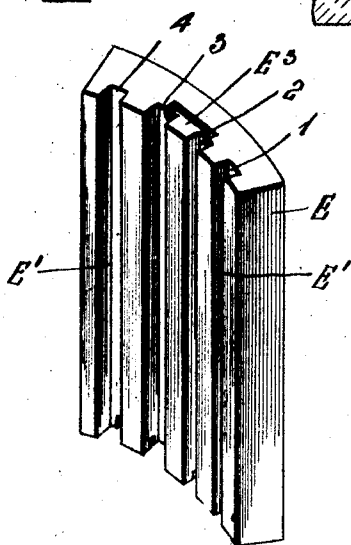
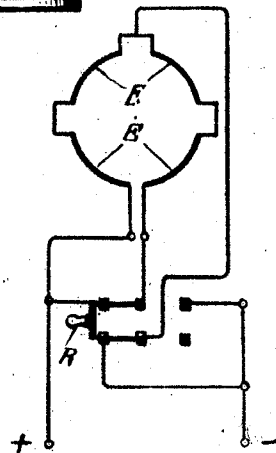


Fig. 4



Witnesses
Morris Lessin
C. A. Mudock

Inventor
Milton M. Kohn
By his Attorney
Frank P. Schley

UNITED STATES PATENT OFFICE.

MILTON M. KOHN, OF NEW YORK, N. Y.

ELECTRIC HEATER.

983,291.

Specification of Letters Patent.

Patented Feb. 7, 1911.

Application filed October 1, 1909. Serial No. 520,515.

To all whom it may concern:

Be it known that I, MILTON M. KOHN, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Electric Heaters, of which the following is a specification.

My invention relates to electric heaters and the object of my invention is to provide a heater of this character which is provided with separate heating units so that if one of the heating units should burn out or become defective, it may be replaced by another or the remaining units be used until a new one can be obtained.

A further object of my invention is to provide a heater that is simple, and of durable construction and provided with a chamber that can be readily closed and in which metals may be melted.

A further object is to provide a heater having its heating coils of a proper resistance so that by a simple double throw switch the elements may be coupled to cause the heating electric current to flow through the heating coils in series or in multiple so that the heater may be used directly on a line carrying 110 or 220 volts, and therefore a feature of my construction is to use the said heating units in pairs, or multiples of two, four, six, etc.

Another object of my invention is to inclose the conductors in separate channels so they are protected from the atmosphere as far as possible, to protect them from rapidly oxidizing, and from being accidentally struck or displaced in use.

Referring to the drawings which form part of this specification, Figure 1 is a cross sectional view through a heater embodying my invention. Fig. 2 is a plan view of the same, the top sealing lid being removed to disclose the sectional construction. Fig. 3 is a sectional view of a portion of the heater and discloses one of the sectional units and the wiring leading from the exterior of the heater to one of the upper terminals. Fig. 4 is a diagram illustrating the circuits and switch control of same. Fig. 5 is a perspective view of one of the heater units with the wiring which forms the heat generating element, removed.

A, indicates the body portion of a heater embodying one form of my invention, and is made of any material which is a good

non-conductor of heat, such as fire clay, and is formed with a comparatively thick bottom wall A' which supports a cylindrical portion A² which is located about half way between the inner lining or pot, B, and the outer metal sheathing C. A depression A³ is formed in the bottom A' as shown, to permit the pot to set snugly therein and support the same centrally in reference to the wall A².

The top of the pot B, the sides of which serve as a lining, is in line with the top of the cylindrical wall A², and an annular space D is thus formed between the wall A² and outer sides of the pot B, in which is located a plurality of forms E—E, etc. Each of these forms is made of non-conducting material such as pressed clay or asbestos, and is made to fit into the annular space D loose enough to be easily removed in case of necessity. There are four of these forms used in the present construction shown, but any number may be used, depending on the construction desired, but I prefer to use them in pairs so that they may be connected in series or multiple, and the current evenly divided when connected in multiple. Each of the said forms is provided with grooves E', of which four are shown in the present construction, and located in each of said grooves is the heating medium, in this case illustrated as a coiled wire, and indicated by F. One end of this wire is connected to one of the screws F' and is led downward to the bottom of the groove nearest to said screw where a short section of the coil is straightened and led through a slot E² formed in the bottom of the form E, and the coil then continued upward to the top of groove No. 2, downward through groove No. 3 and upward through groove No. 4 to the binding screw F², thence through the metal strip G to binding screw F³, and to the coil in the adjacent form, and thus on around to the terminal, this heater being shown with the coils connected in series. The depression E³ in the form E permits the short section of wire connecting the adjacent coils to pass over from one groove to the next without projecting above the top end of the form.

It is obvious that a burned out coil can be easily removed and replaced by a new one since there is nothing to hold the coils in place except the walls of the lining and heater, and the wires being held in the lower grooves, from which they may be easily removed and replaced by a new set of coils,

which may be kept in reserve for the purpose. The binding posts H and I, are the terminals of the conductors and are held to the sheathing C by forming recesses as J in the bottom A' in which is placed a nut K, and the binding post H is provided with a shoulder and a screw which engages the nut K and thus clamps the sheathing firmly. The wire L is passed upward through a packing of asbestos M, which surrounds the wall or cylinder A², to the metal strips G' and the return wire to the opposite binding post is connected to the terminal strip G². A cover N, rests on the top edge of the sheathing C, and above this is a lid O which extends flush with the outer edge of the sheathing C and inner edge of the pot B as shown, and is provided with holes through which the bolts P—P etc. project. The sheathing C is provided with corner flanges which project below the bottom of the body portion, and is provided with holes through which bolts are passed which extend upward through the body portion and lid as indicated in dotted lines in Fig. 3, and thumb nuts engage the bolts and thus clamp the parts tightly in place.

Referring to Fig. 4, E—E—E—E indicate the four forms, containing coils as heretofore set forth, connected in circuit by a double throw switch R. As now shown the units are connected in multiple. By throwing the switch in the opposite contacts, the coils will be connected in series as will be readily understood.

I do not wish to limit myself to the exact form shown, but reserve to myself the constructions that come within the scope of my claims as allowed.

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

1. An electric heater comprising a body portion, a plurality of forms which are duplicates of each other, a heating element located in each of said forms and removable therefrom without injury thereto, means located in said body portion for connecting the ends of said heating elements and a lining wall adjacent said forms and having a chamber formed therein.

2. A heater comprising a body portion having an upwardly extending cylindrical wall, a plurality of removable forms shaped to conform to said upwardly extending wall and each provided with an electrical conductor, a separable inner wall located adjacent to said forms and having a chamber formed therein, and means for covering the top of said forms.

3. An electric heater comprising a body portion having an upwardly extending wall, a plurality of forms located adjacent to said wall, an electric conductor carried by each form, means for connecting the conductors

in one form to that of an adjacent form, means for covering and holding said forms in position within the body portion, and means for connecting said conductors in series or multiple circuit arrangement.

4. A heater comprising a body portion having an upwardly extending cylindrical wall, a plurality of removable forms shaped to conform to said upwardly extending wall and each provided with an electrical conductor, an inner wall located adjacent to said forms, and means for covering the top ends of said forms.

5. An electric heater comprising a body portion having an upwardly extending cylindrical wall, a lining portion located within said body portion, and forming between its outer surface and said upwardly extending wall, an annular chamber, a plurality of forms located in said annular chamber each of which is provided with an electrical conductor, and means for covering said forms and electrical conductors to provide a closed annular chamber.

6. An electric heater comprising a body portion having an upwardly extending wall, a lining portion within said body portion and which contributes to form a chamber between said lining portion and said wall, a plurality of forms within said chamber each of which is provided with an electrical conductor, and means for covering said chamber to form a closed chamber.

7. An electric heater comprising a body portion having an upwardly extending wall, a pot in said body portion, a plurality of removable forms located between said pot and said wall, electrical conductors carried by said forms, a cover extending across the top of said body portion, and forms, and means for holding said cover in position on said heater.

8. An electric heater comprising a body portion having an upwardly extending wall, a plurality of forms located adjacent to said wall, an electric conductor carried by each form, means for connecting the conductors in one form to that of an adjacent form, and means for covering and holding said forms in position within the body portion.

9. An electric heater comprising a body portion having an upwardly extending annular wall, a pot located in said body portion having an upwardly extending wall, a plurality of forms located between the walls of said pot and said body portion, an electrical conductor in each form, means for connecting the ends of said electrical conductors together, a sheathing which incloses said walls, a cover for said heater, and means for holding said sheathing and cover to said body portion.

10. A heater comprising a body portion having an upwardly extending annular wall, a pot having an upwardly extending cy-

lindrical wall, a plurality of separable forms located between the wall of said pot and said upwardly extending wall each of said forms being provided with a plurality of grooves, heating conductors located in said grooves, means for connecting the ends of said conductors together, a sheathing surrounding the body of said body portion, a non-conducting material located between the outer surface of said upwardly extending wall and said sheathing, a cover for said non-conducting material, and a cover extending above said first named cover and the tops of said wall and forms, and means for holding said covers and sheathing to said body portion.

11. A heater comprising a body portion having an upwardly extending cylindrical wall, a plurality of removable forms shaped to conform to said upwardly extending wall and each provided with an electrical conductor, a separable inner wall located adjacent to said forms and means for covering the top ends of said forms.

Signed at New York in the county of New York and State of New York this 30th day of September A. D. 1909.

MILTON M. KOHN.

Witnesses:

FRANK M. ASHLEY,
E. F. MURDOCK.