To all whom it may concern:

Be it known that I, LEE P. Hynes, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Weatherproof Electric Heaters, the following being a full, clear, and exact disclosure of the one form of my invention which I at present deem preferable.

For a detailed description of the present form of my invention, reference may be had to the following specification and to the accompanying drawing forming a part thereof—

Figure 1 is a plan and Fig. 2 is a side elevation of my device.

Referring to the drawing, A represents a heavy casting made hollow and on the inside thereof are two spacing ribs, a and a', preferably integral with the casting A. The casting forms a casing for the heating coil and extends longitudinally thereof. Being open on one side from end to end the coil and its supporting core can be laid sidewise therein between the said spacing ribs. On one end of the casing is formed an external shelf-like projection A'. C is a core of porcelain with a spiral groove on its outer surface wherein is laid a coil of resistance wire D wherein the heat is generated. E and E' are thick plates of asbestos composition applied to each of the respective ends of core C. A rod K passes axially through the core and the plates E, E' with a nut on each end. This rod serves to secure the heater parts together and also is utilized as a conductor to bring both terminals of the coil circuit at one end of the heater, being connected to the left end of the wire coil and also to the incoming lead wire at the right. A heavy plate B is fitted on the casing as a cover, being securely screwed thereto with an interposed packing gasket G. At the right end of cover B is a similar shelf-like projection opposite the projection A' on the casing and spaced therefrom. Between the two projections A' and B' are two binding posts F and F' each formed of a porcelain tube f containing a central rod with a screw clamp at its outer end and inclosed in a metal sleeve P which is screwed into the end wall of the casing A. Inside of the casing an insulating plate A* is seated against the ends of the two sleeves P, P and the respective rods passing through the porcelain tubes f are connected to terminals R and R' on the said plate A*. The post R is connected electrically to the rod K and the post R' to the adjacent terminal of the heating coil D. Since the external binding posts F and F' are preferably of porcelain and therefore fragile, and are also of some length since the surface distance between the screw tip and the metal sleeve is relied upon for insulation of said tip from the sleeve, it is necessary to protect them against mechanical injury which I do by means of the aforesaid shelves A' and B'. By this arrangement I have a heater which can be buried in snow or immersed in water without affecting the normal heating operation. The internal parts are of materials which will withstand the high heat of 500 degrees and more which frequently exists in the inside of the casing, while the porcelain posts f, f, although good conductors of heat will be cooled by their exposure on the outside of the casing. This avoids the necessity of bringing the rubber-covered wires, such as are required to resist moisture, into the heated interior of the casing where the rubber would soon be destroyed.

What I claim as new and desire to secure by Letters Patent is:

1. A weatherproof electric heater comprising a casing open at one side, a sealed cover plate secured to the open side of said casing, a longitudinally disposed heating coil within said casing, said coil having its core spaced from the sides and the ends of the casing, metal bushings removably engaging one of the end walls of said casing, insulating posts carried by said bushings, metal terminals passed through said insulating posts and provided with external binding posts, and means for connecting the inner ends of said terminals with the terminals of said coil.

2. A weatherproof electric heater comprising a longitudinal metal casing open on one side, a coil therein, a sealed cover plate secured thereto on the open side, separated shelf-like extensions at one end, and exterior terminals between said extensions mounted respectively on the ends of insulating posts which are secured in the end wall of the casing by metal bushings screwed into said wall.

3. A weatherproof electric heater, com-
prising a longitudinal metal casing open on one side, a coil therein, a core for the coil, an insulating plate at each end of the core spacing it from the sides of the casing, lugs between the plates to prevent endwise move-
ment of the said core, and insulating posts removably secured in one end wall of the casing, and external terminals mounted on said insulating posts and connected with the terminals of the coil.

4. A weatherproof electric heater comprising a longitudinal metal casing open at one side with closed ends, a coil mounted therein, a sealed cover plate secured thereto on the open side, exterior terminals mounted respectively on the ends of insulating posts which are secured in the end wall of the casing by metal bushings screwed into said wall, an internal insulating plate, and termi-
nals thereon connected respectively to wires passing through the porcelain posts and to the ends of the heating coils.

5. A weatherproof electric heater comprising a sealed metallic casing, a heating coil therein, connecting conductors passing through the wall of said casing, heat-proof insulation surrounding said conductors respectively, and metal bushings inclosing said insulation and removably secured in the said wall.

6. A weatherproof electric heater comprising a sealed metallic casing, a heating coil therein, conductors passing through the wall of said casing and inclosed by heat-
proof insulation seated in and removably se-
cured to the casing walls, external connec-
tors on the outer ends of said conductors and internal electrical connections between said conductors and the heating coil.

7. A weatherproof electric heater com-
prising a sealed metallic casing, a heating coil therein, posts of insulating material passing through and seated in the walls of said casing and removably projecting there-
from, conductors passing through said posts and provided with connectors on their outer ends, and internal electric connections be-
 tween the inner ends of said conductors and the heating coils.

8. A weatherproof electric heater com-
prising a sealed casing, a heating coil there-
in, insulating posts seated in the wall of the casing and projecting outwardly therefrom, conductors passing through said posts and connecting with the heating coil, and exter-
nal protecting extensions from the casing on opposite sides of said posts.


LEE P. HYNES.