F. KUHN & F. E. SHAILOR.

ELECTRIC STOVE.

APPLICATION FILED MAY 8, 1915.

1,191,197.

Patented July 18, 1916.

2 SHEETS—SHEET 1.

Fig 1.

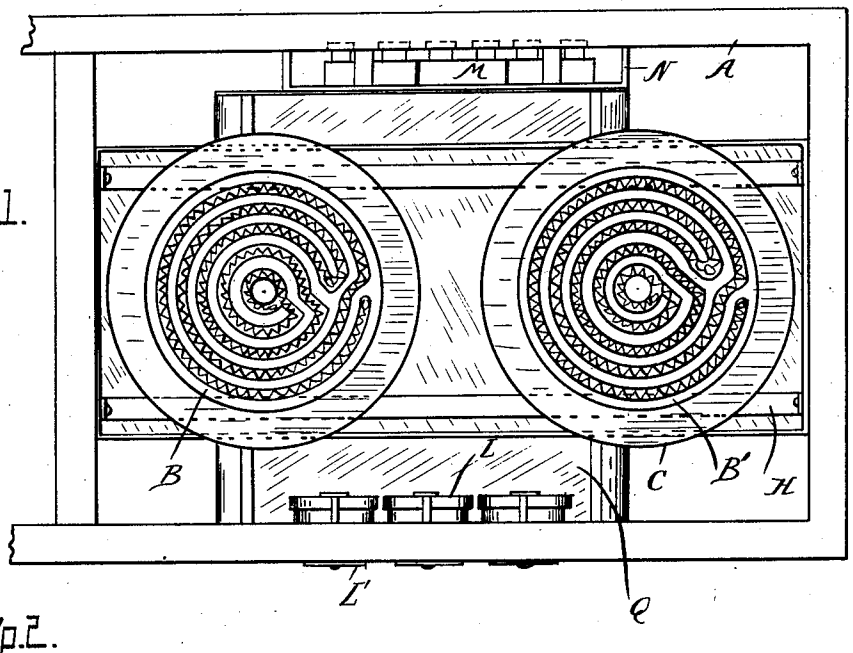
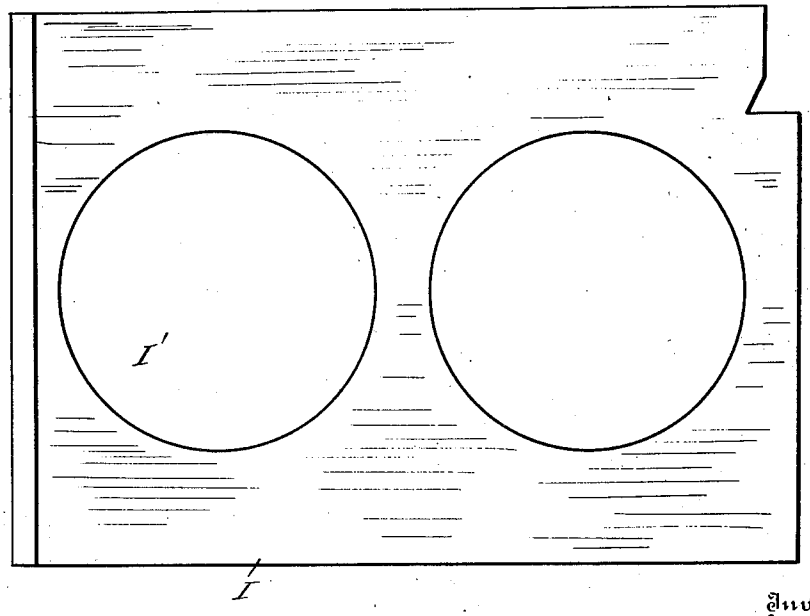


Fig 2.



Witnesses

H. K. Ford

James E. Barry

Inventors

Frank Kuhn &

Frank E. Shailor

By Whittemore Hulbert & Whittemore

Attorneys

F. KUHN & F. E. SHAILOR.

ELECTRIC STOVE.

APPLICATION FILED MAY 8, 1915.

1,191,197.

Patented July 18, 1916.

2 SHEETS—SHEET 2.

Fig. 3.

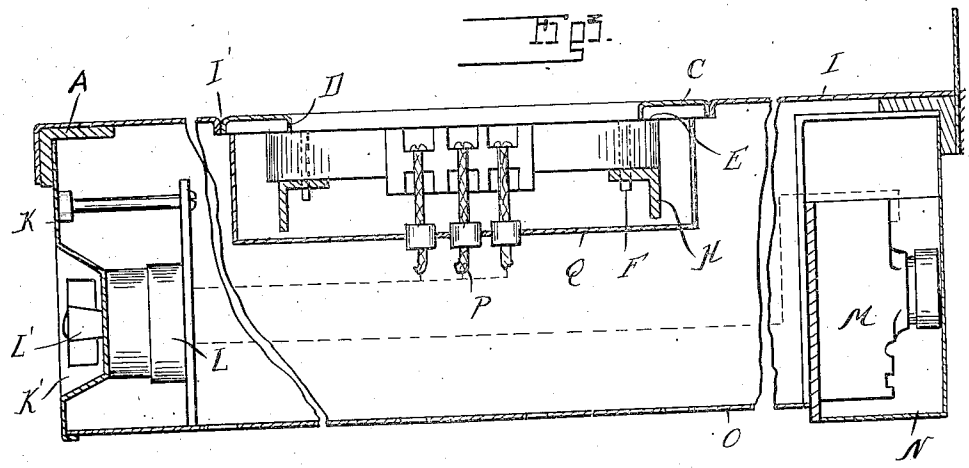


Fig. 4.

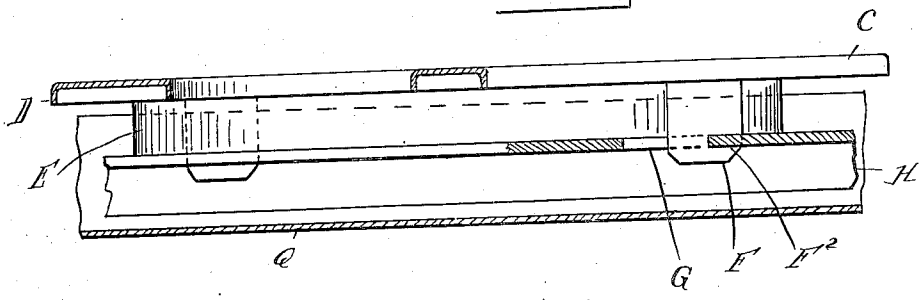
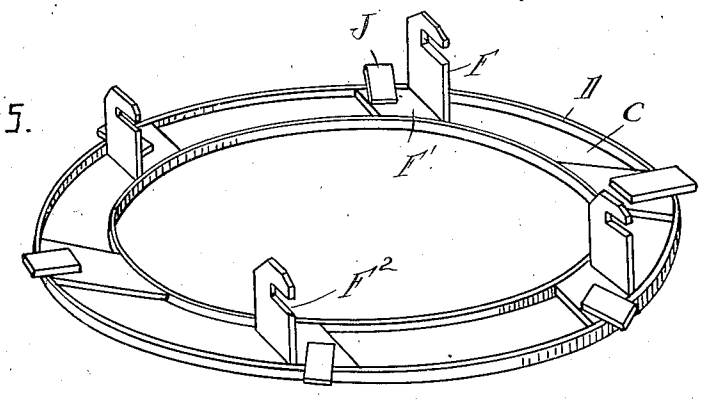


Fig. 5.



Inventors

Frank Kuhn &

Frank E. Shailor

By Whittemore Hulbert & Whittemore

Attorneys

Witnesses

W. K. Fead

James P. Barry

UNITED STATES PATENT OFFICE.

FRANK KUHN AND FRANK E. SHAILOR, OF DETROIT, MICHIGAN, ASSIGNORS TO AMERICAN ELECTRICAL HEATER COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

ELECTRIC STOVE.

1,191,197. Specification of Letters Patent. Patented July 18, 1916.

Application filed May 8, 1915. Serial No. 26,790.

To all whom it may concern:

Be it known that we, FRANK KUHN and FRANK E. SHAILOR, both citizens of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Electric Stoves, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to electrically heated stoves and comprises various features of construction as hereinafter set forth.

In the drawings: Figure 1 is a plan view of the stove with the top plate or cover removed; Fig. 2 is a plan view of said top plate or cover; Fig. 3 is a cross section through the stove; Fig. 4 is a sectional elevation in a plane at right angles to Fig. 3; and Fig. 5 is a perspective view of one of the unit holding rings.

A is a suitable supporting frame, preferably formed of longitudinal and cross bars of angle section.

B and B′ are disk-shaped heating units arranged at suitable points within the frame A, and preferably comprising grooved plates of insulating material having naked resistors arranged in the grooves. To protect these units and to removably secure the same upon the frame, each unit is provided with a surrounding metallic ring C, preferably formed of sheet metal having downturned edge flanges D. The inner edge of this ring is adapted to rest upon a ledge E of the insulator, while the top of the flange is substantially flush with the top face of said insulator.

F are depending legs preferably formed of sheet metal having angle-bent flanges F′, which are spot-welded or otherwise secured to the ring C. Each of these legs is adapted to be inserted in a slot G in supporting cross-bars H of the frame, and the legs are slotted at F^2 to form hooks, which may be engaged with the flange of the supporting bars by a slight lateral adjustment. Thus to securely clamp the unit in position upon the frame the insulators are first placed upon the cross bars H, and the rings C are then engaged therewith, the legs F being inserted through the slots G, and the ring and insulator being then moved laterally to engage the hooks F^2.

To further shield the units and their connections, a cover plate I is provided which closes the open spaces in the frame A, and is apertured at I′ for engagement with the units and their rings C. This cover plate is preferably formed of sheet metal having flanged edges which lie adjacent to the edge bars of the frame, and the rings C are preferably provided with radially-extending fingers J which form seats for the shield. Thus, when the shield is in position it will completely cover all of the open spaces, and also serve to hold the units and their rings C from lateral displacement.

To control the units, suitable switches are arranged at the front of the frame, and these are preferably mounted upon the front K, having inwardly embossed portions K′ forming recesses for the switch knobs. The switches L are mounted on the inner faces of these embossed portions, their handles L′ being located in the recesses so as to avoid any projection from the face of the plate K.

M are fuse-blocks or cut-outs which are arranged on the rear side of the frame, and which are normally concealed and protected by a removable plate or hood N. The space intermediate the cut-outs and the switches is inclosed by a housing O which is apertured for free ventilation and which contains the connectors P. There is also preferably a housing Q, which separates the heating units from the space containing the connectors and intercepts direct radiation of heat.

The whole arrangement is one which is inexpensive to manufacture and which when assembled completely protects the units and their connections from injury or accidental short circuiting.

What we claim as our invention is:—

1. In an electric stove, the combination with an open frame, of a unit directly supported on said frame, terminal connections for said unit beneath the same, and a shield surrounding said unit and closing the open spaces of said frame.

2. In an electric stove, the combination with an open frame, of a heating unit having a disk-shaped insulator body resting upon said frame, and a metallic ring surrounding said body detachably secured to said frame.

3. In an electric stove, the combination with an open frame, of a heating unit hav-

ing a disk-shaped insulator body supported on said frame, and a ring surrounding said unit engaging the ledge thereon, said ring being provided with depending legs engageable with said frame and lockable thereto by a lateral movement.

4. In an electric stove, the combination with a supporting frame, of a disk heating unit resting upon said frame, a metallic ring for surrounding said disk and engaging the ledge thereon, legs on said ring engaging slots in said frame, and hooks on said legs for interlocking with said frame upon a lateral adjustment relative thereto.

5. In an electric stove, the combination with an open frame having cross bars, of an electrical heating unit supported on said cross bars, a protecting ring surrounding said unit and engaging a ledge thereon, depending legs on said ring engageable with slots in said cross bars and lockable thereto by a lateral movement, and a shield for covering the open spaces of said frame, apertured to receive said unit and ring and holding the same from lateral displacement.

6. In an electric stove, the combination with a frame and a heating unit supported thereon, of a controlling switch for said unit, and a mounting for said switch comprising a plate with an inwardly embossed portion to which said switch is secured, the handle or knob of said switch being arranged in the recess formed by said inwardly embossed portion.

7. In an electric stove, the combination with a frame and an electrical heating unit supported thereon, of a controlling switch arranged at the front of said frame, a fuse-block or cut-out arranged at the rear of said frame, connnectors between said switch and fuse-block and said unit, and a casing extending from front to rear of said frame and housing said connectors.

8. In an electric stove, the combination with a frame and an electrical heating unit supported thereon, of a controlling switch for said unit arranged at the front of said frame, a fuse-block or cut-out arranged at the rear of said frame, connectors intermediate said fuse-block and switch and said unit, a housing for inclosing said connectors, and a removable cover at the rear of said frame for inclosing said fuse-block.

9. In an electric stove, the combination with an open frame, of cross bars for said frame arranged in a plane below the top of the marginal bars of said frame, an electrical heating unit supported on said cross bars having its upper face lying substantially flush with the marginal bars of said frame, a metallic ring surrounding said unit engageable with said cross bars to lock the unit thereto, and a shield for covering the open spaces of the frame surrounding said unit and ring and lying substantially flush therewith.

10. In an electric stove, the combination with a frame and an electrical heating unit supported thereon, of a controlling switch arranged at the side of said frame, a fuse-block or cut-out arranged at the opposite side of said frame, connectors between said switch and fuse-block and said unit, an apertured housing for said connectors, and a housing intermediate said heating unit and the connectors.

11. In an electric stove, the combination with an open frame, of a unit supported on said frame, means for detachably securing said unit thereto, a member extending outwardly from said securing means, and a shield surrounding said unit and securing means and closing the open spaces of said frame, said shield resting upon said outwardly-extending member and retaining the securing means and unit in place.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANK KUHN.
FRANK E. SHAILOR.

Witnesses:
ROLAND DRESSEL,
ARCHIE E. PALMER.