Dec. 29, 1925. 1,567,855

D. N. MEANY ET AL.

ELECTRIC FIREPLACE

Filed Nov. 24, 1924 2 Sheets-Sheet 1

Fig. 1.

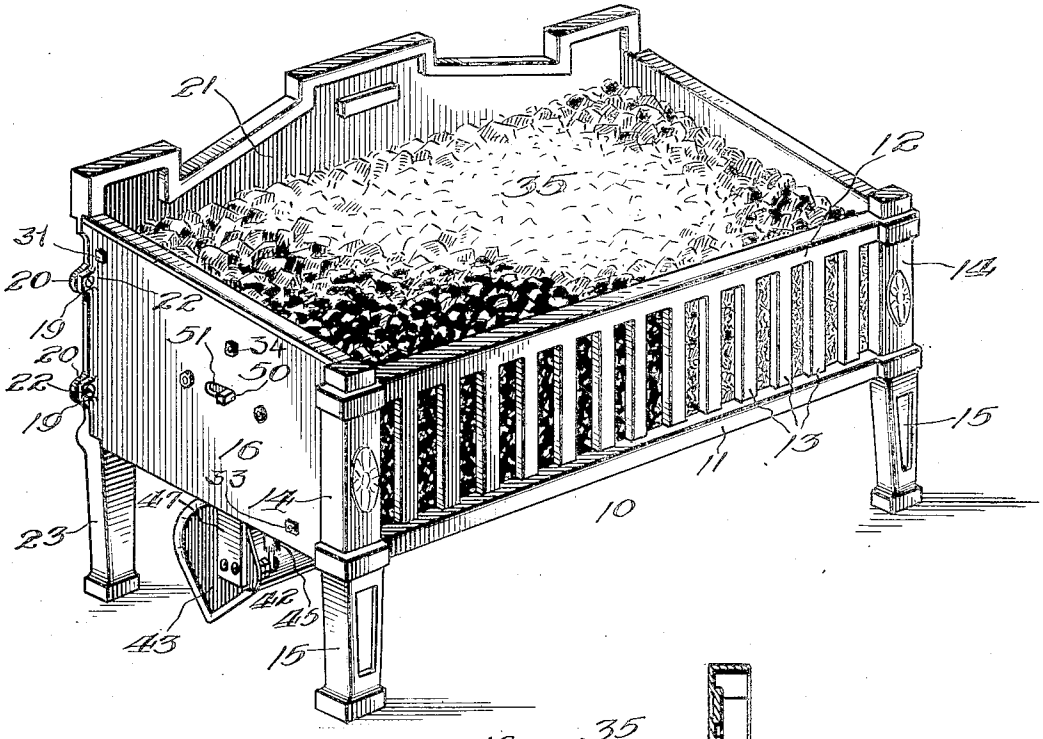
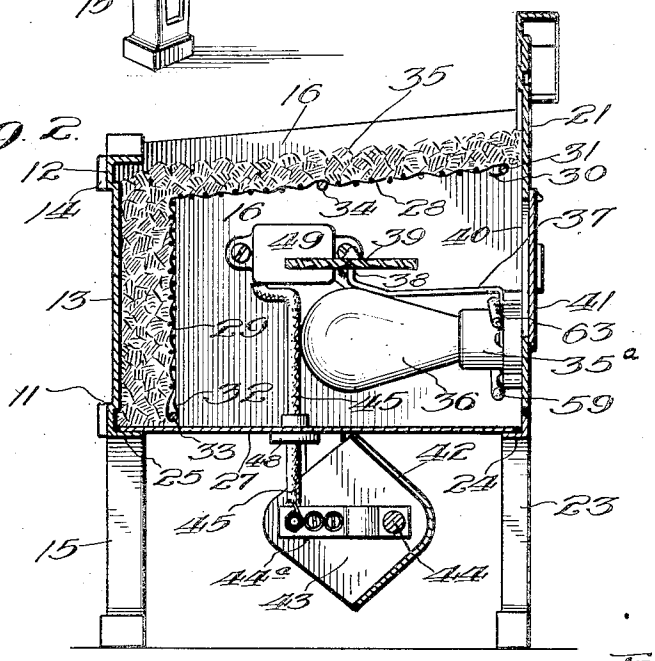


Fig. 2.



Inventors.
Daniel N. Meany,
Edward N. Ellsworth.
by Banning & Banning
Attys.

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Fig. 3.

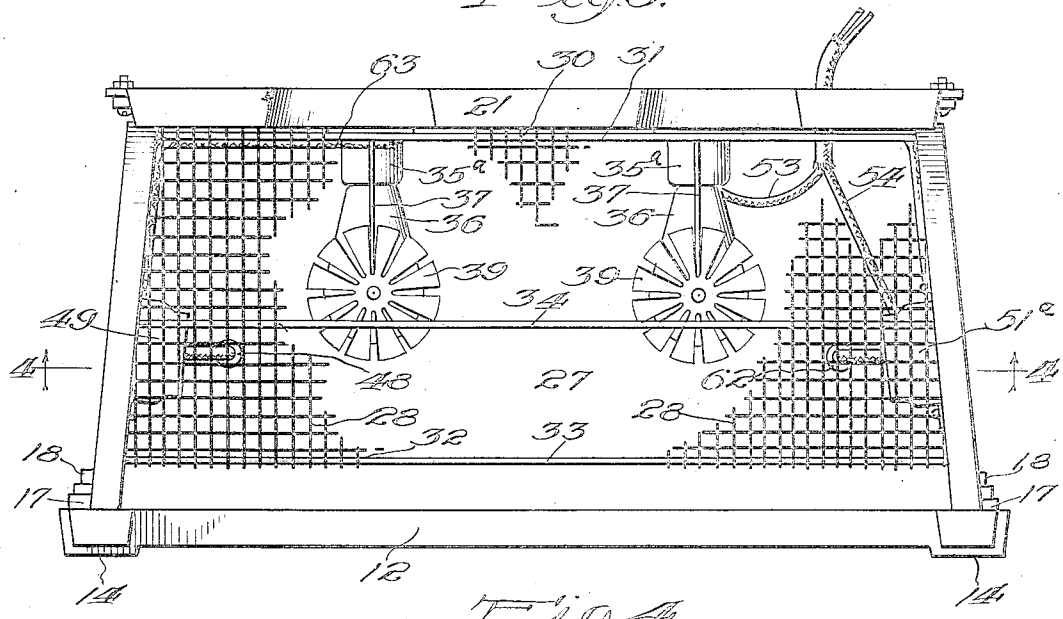
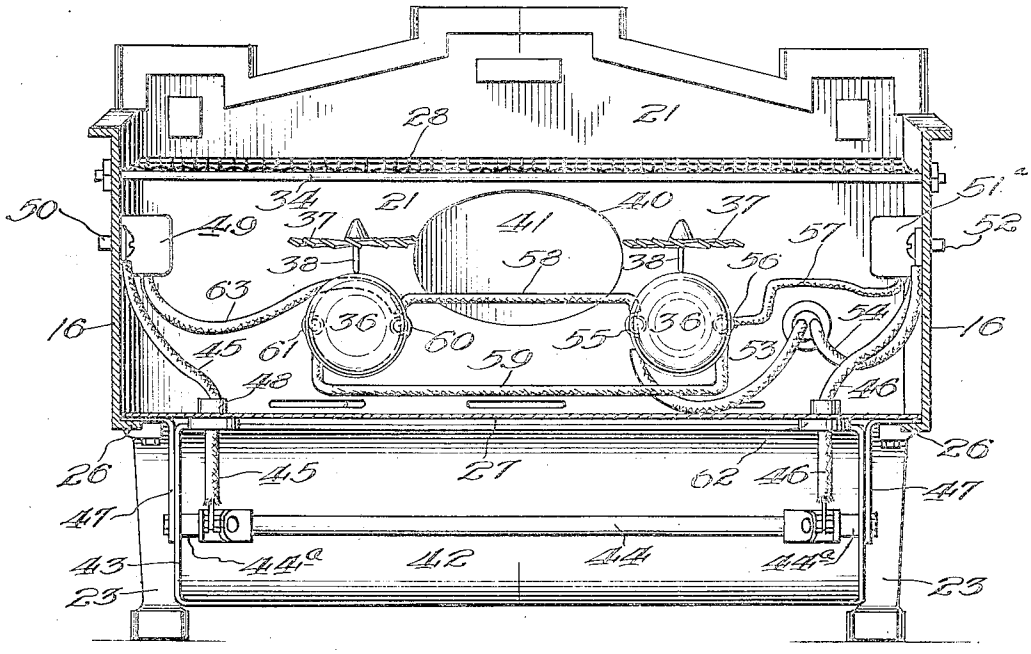


Fig. 4.



Inventors:
Daniel N. Meany,
Edward N. Ellsworth,
by Cummings & Cummings
Attys.

Patented Dec. 29, 1925. 1,567,855

UNITED STATES PATENT OFFICE.

DANIEL N. MEANY AND EDWARD N. ELLSWORTH, OF CHICAGO, ILLINOIS, ASSIGNORS TO ELECTRIC FIREPLACE MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ELECTRIC FIREPLACE.

Application filed November 24, 1924. Serial No. 751,773.

To all whom it may concern:

Be it known that we, DANIEL N. MEANY and EDWARD N. ELLSWORTH, both citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electric Fireplaces, of which the following is a specification.

This invention relates to a grate designed and adapted to be electrically illuminated in such a way as to simulate the appearance of a grate of live coals in association with a heater so disposed as to be practically concealed from view beneath the fireplace for the purpose of disseminating heat which will not only serve to warm the room wherein the grate is located but will further serve to enhance the illusion of actual fire created by the appearance of the illuminated fuel within the grate.

The invention is directed to the construction and arrangement of the wire mesh for supporting the fuel; to the means provided for assuring easy access to the interior of the grate without disturbing the fuel; to the method of constructing and combining of the sections of the grate structure; to the wiring arrangement for conducting current to the heating and illuminating elements; to the mounting for the hot air fans which serve to impart a flickering effect to the artificial fuel; and to the device as a whole and to the individual parts thereof.

In the drawings:

Figure 1 is a perspective view of the grate as a whole;

Fig. 2 is a cross sectional view showing the interior of the grate and the heater below the grate;

Fig. 3 is a top or plan view of the grate showing the fuel removed and the wire mesh fuel support partially broken away; and

Fig. 4 is a sectional elevation of the grate looking toward the rear.

The grate structure comprises an openwork front 10 having a lower rail 11, an upper rail 12, vertical grate bars 13, and standards 14, which latter terminate in legs 15 which serve to elevate the grate proper above the level of the hearth. The front may be of any ornamental finish or design, and being detachable from the remainder of the structure, may be readily removed therefrom to permit fronts of various designs to be associated with the grate structure of standard construction.

The grate body further comprises end walls 16 having outstanding lugs 17 in their front edges through which are entered bolts 18 which serve to removably connect the end walls with the front. Similarly the end walls, near their rear edges, are provided with outstanding lugs 19 which register with lugs 20 on the back wall 21 to which the ends are secured by the provision of bolts 22 or in any other suitable manner.

The rear wall is provided with legs 23 which, in conjunction with the legs 15, serve to support and elevate the grate to the desired level. The rear wall along its lower edge is provided with an inturned flange or ledge 24 which acts, in conjunction with a ledge 25 on the front and ledges 26 on the end walls, in providing supports for a removable bottom plate 27 which constitutes the base of the grate. If desired, this bottom plate can be completely removed or omitted, so that illumination, presently to be described, will be cast upon the hearth and reflected therefrom to increase the simulation of a natural fire.

Within the grate is located a mesh partition comprising an upper horizontal section 28 and a front vertical section 29, the mesh being continuous and bent to substantially the right angle relation shown. The rear upper edge of the mesh partition is bent or lapped to form a hook 30 which embraces a rear upper cross rod 31. The lower end of the mesh is similarly bent or lapped to form a hook 32 which embraces a front lower cross rod 33. In addition to the rods 31 and 33, an intermediate upper rod 34 is provided which furnishes additional support for the mesh holding it against sagging under the load of the artificial fuel 35 which is poured into the space intermediate the mesh and the front and also on top of the mesh to give the appearance of a grate full of coal.

The artificial fuel is composed of irregular fragments of transparent or translucent material such as colored glass or the like, which serves to transmit and reflect the light from beneath to simulate the effect of a glowing grate of coals. The rear wall is

provided with a plurality of light sockets 35a which receive bulbs 36, and each of the sockets is, furthermore, provided with a forwardly extending bracket 37 upturned and pointed at its forward end 38 to furnish a pivotal mounting for a fan 39, the blades of which are impinged upon and rotated by the heated air arising from the bulb beneath. The fans are preferably composed of polished metal which reflects the light and imparts a flickering effect in simulation of flames from the glowing coals.

The rear wall preferably in its center is provided with a hand hole 40 which is closed by a door 41, which arrangement permits the insertion of the hand from the rear to remove or replace a defective bulb, or otherwise manipulate the lighting apparatus without the necessity for disturbing the body of fuel upon and in front of the mesh partition. Beneath the floor 27, and suspended therefrom, is an elongated reflector 42 the walls of which are angled along a horizontally extending bend. The reflector is provided with end walls 43 of substantially rectangular shape with their forward edges protruding beyond and in front of the rear walls of the reflector.

Lying within the bend or angle of the reflector is an elongated resistance element 44 of any suitable or approved form, the ends of which are entered into and carried by a pair of inwardly projecting brackets 44a to which are secured the ends of current wires 45 and 46, respectively. The brackets are secured to the end walls of the reflector, and the reflector as a whole is suspended from the bottom plate of the grate by hangers 47. The reflector is located beneath the bottom plate and well to the rear of the grate, so that it will be well concealed from view, and when in use, will reflect both heat and light forwardly from beneath the grate at a point well chosen to guard against the dissemination of the heat in a rearward direction, with the result that the heat and light thus reflected will appear to be derived from the glowing coals, thereby adding to the attractiveness of the grate and affording a substantial volume of heat to the room. The wire 45 leads upwardly through a fitting 48 in the bottom wall of the grate and connects with one of the terminals of a heater switch 49 having a finger lever 50 which extends through a slot 51 in the proximate end wall to afford easy and convenient manipulation of the switch.

To the opposite end wall is secured a lighting switch 51a similarly operated by a finger lever 52. The current is supplied through wires 53 and 54, the former of which constitutes one of the constituents of the lighting circuit and leads to the inside terminals 55 of the proximate light socket. The opposite terminal 56 connects with a return circuit wire 57 leading back to the lighting switch 51.

The more distant light bulb is supplied by outgoing and return leads of wire 58 and 59 which connect with the terminals 60 and 61 of the distant light socket, the lights being thus arranged in series. The heating lead of wire 54 connects with a wire 46 which passes through a fitting 62 in the bottom plate 27, and the heating circuit is completed by the provision of a return wire 63 leading from the heating switch to the terminal 60. This arrangement permits either the heater or lights to be operated individually or in unison with one another, so that the grate can be used either as a heater or merely for decorative effect or for both purposes, as occasion may arise. This will be found of great advantage in warm weather when it is desired to dispense with the heating effect but at the same time preserve the pleasant and attractive illuminating effect of an open fire.

The arrangement is one which permits the parts composing the grate to be readily assembled or disassembled, and permits easy manipulation of the lighting and heating elements without disturbance of the fuel bed. The parts composing the grate can be cheaply manufactured from either stamped or cast metal, and when in use the grate will closely simulate the beauty and warmth of a natural fire.

We claim:

1. In an electric fireplace, the combination of a grate structure consisting of a back, end walls, and a grated front, an electric bulb secured to and projecting forwardly from the back, a mesh partition of angled formation extending forwardly from the back and down turned behind the grated front to afford a front space for the reception of artificial fuel, the rear and bottom edges of the mesh partition being backwardly turned to provide hooks, upper and lower rods entered through the end walls and extending through said hooks, and a layer of artificial fuel on top of and in front of said mesh partition, substantially as described.

2. In an electric fireplace, the combination of a grate structure consisting of a back, end walls, and a grated front, an electric bulb secured to and projecting forwardly from the back, a mesh partition of angled formation extending forwardly from the back and down turned behind the grated front to afford a front space for the reception of artificial fuel, the rear and bottom edges of the mesh partition being backwardly turned to provide hooks, upper and lower rods entered through the end walls and extending through said hooks, a layer of artificial fuel on top of and in front of said mesh partition, and a fan pivoted above the electric bulb and adapted to be rotated by heated air arising

therefrom to produce a flickering effect, substantially as described.

3. In an electric fireplace, the combination of a grate structure consisting of a back, end walls, and a grated front, an electric bulb secured to and projecting forwardly from the back, a mesh partition of angled formation extending forwardly from the back and down turned behind the grated front to afford a front space for the reception of artificial fuel, the rear and bottom edges of the mesh partition being backwardly turned to provide hooks, upper and lower rods entered through the walls and extending through said hooks, a layer of artificial fuel on top of and in front of said mesh partition, a pivot rod fixedly mounted with respect to the bulb and having its free end upturned to afford a pivot mounting, and a fan swivelled upon said pivotal mounting and adapted to be rotated by heated air arising from said bulb to produce a flickering effect, substantially as described.

4. In an electric fireplace, the combination of a grate structure consisting of a back, end walls and a grated front, an electric bulb within the grate structure, a mesh partition of angled formation extending forwardly from the back and down turned behind the grated front to afford a front space for the reception of artificial fuel, upper and lower rods entered through the end walls and secured to the rear and bottom edges of the mesh partition, and a layer of artificial fuel on top of and in front of said mesh partition, substantially as described.

5. In an electric fireplace, the combination of a grate structure consisting of a back, end walls and a grated front, an electric bulb within the grate structure, a mesh partition of angled formation extending forwardly from the back and down turned behind the grated front to afford a front space for the reception of artificial fuel, upper and lower rods entered through the end walls and secured to the rear and bottom edges of the mesh partition, and a layer of artificial fuel on top of and in front of said mesh partition, and a fan pivoted above the electric bulb and adapted to be rotated by heated air arising therefrom to produce a flickering effect, substantially as described.

6. In an electric fireplace, the combination of a grate structure consisting of a back, end walls and a grated front, an electric bulb secured to and projecting forwardly from the back, a mesh partition of angled formation extending forwardly from the back and down turned behind the grated front to afford a front space for the reception of artificial fuel, upper and lower rods entered through the end walls and secured to the rear and bottom edges of the mesh partition, a layer of artificial fuel on top of and in front of said mesh partition, a pivot rod fixedly mounted with respect to the bulb and having its free end upturned to afford a pivot mounting, and a fan swiveled upon said pivot and adapted to be rotated by heated air arising from said bulb to produce a flickering effect, substantially as described.

DANIEL N. MEANY.
EDWARD N. ELLSWORTH.