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[54] **GLOSING COALS BURNER ATTACHMENT FOR GAS LOG FIREPLACE FIXTURE**
8 Claims, 6 Drawing Figs.

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126/127, 431/328
[51] Int. Cl..... **F24b 1/18**
[50] Field of Search..... **431/125,**
328; 126/127, 41

ABSTRACT: A burner having a pan containing a loose body of gas-diffuser particles having a surface coating adapted to realistically simulate a bed of glowing coals and ashes in the presence of burning gas, is positioned beneath a log-holding grate having a lift-off loose positioning attachment thereto, the pan and diffuser body dispersing the gas emitted from burner orifices with maximum realism of simulation of a log fire.

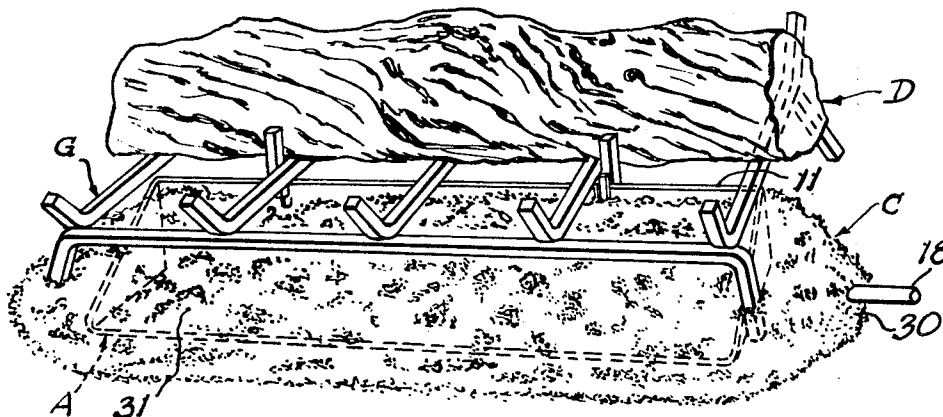


FIG. 1

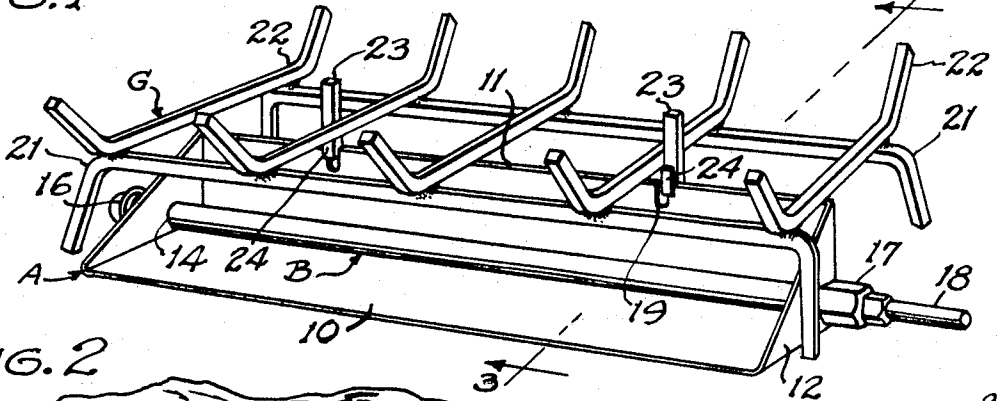
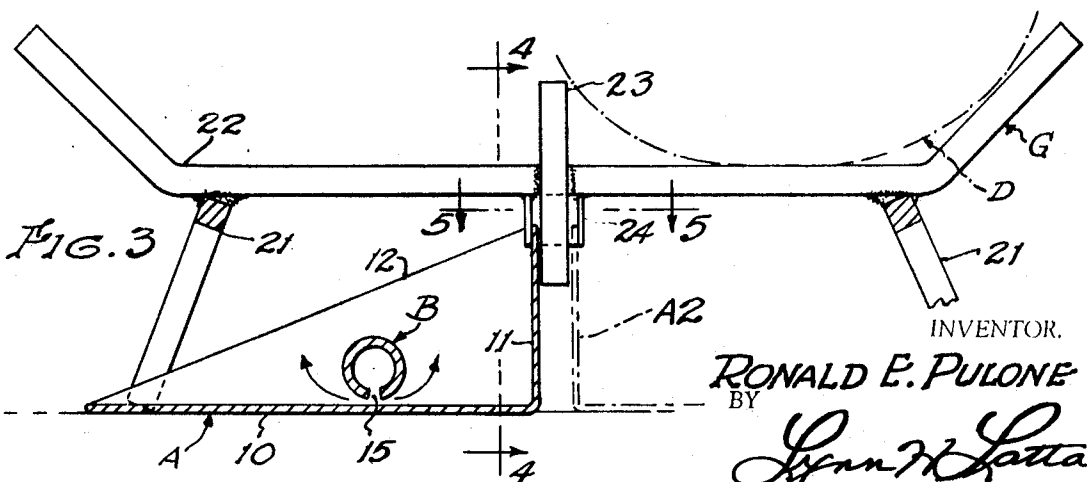
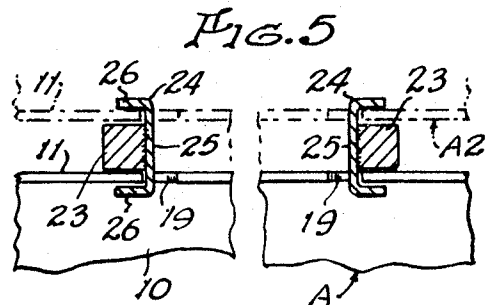
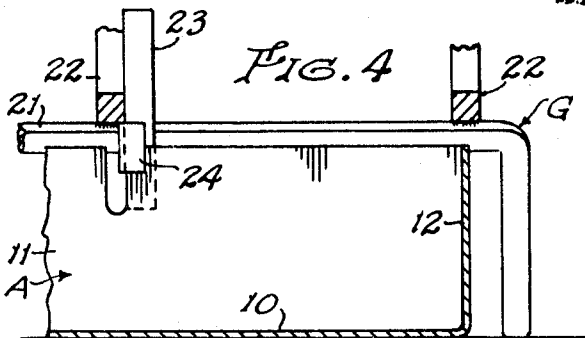
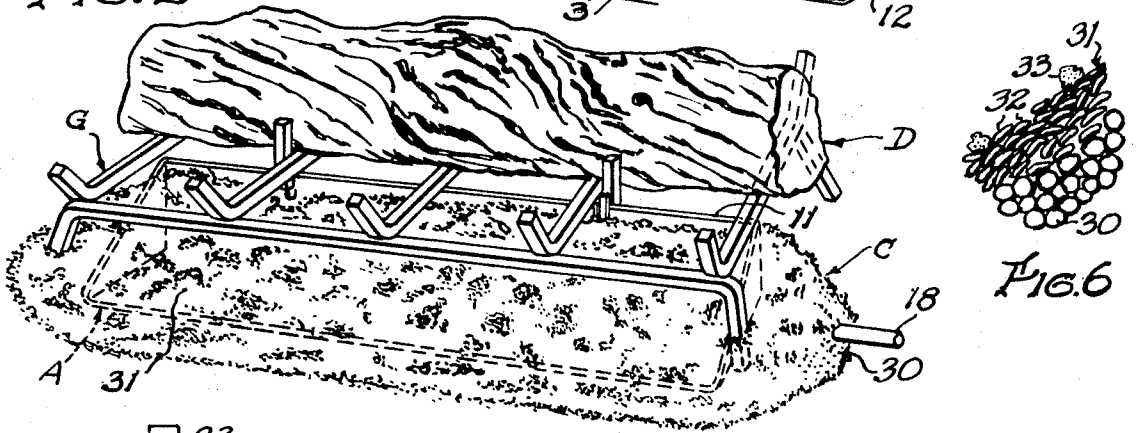


FIG. 2



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GLOSING COALS BURNER ATTACHMENT FOR GAS LOG FIREPLACE FIXTURE

BACKGROUND OF THE INVENTION

It has been common practice heretofore to utilize a heap of noncombustible particles as a covering over a gas burner (perforated tube) to spread the gas emitted from the burner. Prior devices however, have not been successful in realistically simulating a real fireplace fire.

It has also been common practice to utilize an assembly of perforated tube burner and one or more imitation logs of noncombustible material supported in a grate above the burner, the flame from the burner heating some areas of the logs to a glowing condition.

SUMMARY OF THE INVENTION

The invention provides a burner in which a perforated tube extends between the ends of crystal silica sand-holding pan, close to the bottom thereof, the gas jets being directed by the burner tube downwardly against the pan, thence spreading and rising through the bed of silica grains and burning at the surface of the bed which is coated with a sprinkling of a mixture of noncombustible particles which, when contacted by burning gas, produce the appearance of glowing coals overlaid with ashes. The pan has a configuration sloping downwardly and forwardly so as to contain and shape the heap of gas-diffuser material in a downwardly and forwardly sloping bed in which a maximum display area is provided by a minimum quantity of the diffuser material. The grate is provided with downwardly projecting fingers having coupling clips which fit downwardly over edges of the back of the pan to loosely couple the pan to the grate in properly positioned relation thereto while the pan and grate rest flatly on the fireplace firebox floor.

A mixture of asbestos and expanded mica particles with a minor proportion of artificial volcanic rock provides a surface covering for the bed of silica grains, to produce the glowing coals and ashes effect.

The general object of this invention is to attain improved realism in simulating a burning bed of flowing coals beneath an imitation log or logs in a fireplace grate. A further object is to provide a coupled burner and grate assembly in which the grate can be uncoupled from the burner simply by lifting it off.

Other objects will become apparent in the ensuing specifications and appended drawings, in which:

FIG. 1 is a perspective view of my improved burner and grate assembly;

FIG. 2 is a perspective view of a fireplace installation including the gas-diffuser bed and a log in assembly with the burner and grate in a gas log apparatus;

FIG. 3 is a vertical sectional view taken on line 3-3 of FIG. 1;

FIG. 4 is a detail sectional view taken on line 4-4 of FIG. 3;

FIG. 5 is a detail sectional view taken on line 5-5 of FIG. 3; and

FIG. 6 is a detail of the glowing-coals coating.

Referring now to the drawing in detail, I have shown therein, as an example of one form in which the invention can be embodied, a gas log assembly including, in general, a burner comprising a pan A and a burner tube B; a grate G disposed above and loosely coupled to the pan A with both units resting on a firebox; a bed of gas-diffuser particles C to simulate a bed of coals; and an imitation log D which may be of conventional construction, only one log being shown although the invention contemplates the use of one or more logs in piled assembly.

Pan A comprises a bottom 10 adapted to rest flatly on a firebox floor; a back 11 and triangular ends 12 sloping downwardly and forwardly to the front edge of bottom 10, the front of the pan being open. Burner tube B extends through openings 14 in ends 12 near the bottom 10, being slightly spaced above the bottom so that gas may emerge from orifices

15 in the lower side of tube B, spread forwardly and rearwardly into the diffuser bed C, and thence percolate upwardly through the bed, to burn at the surface thereof. Tube B is provided with a conventional closure cap 16 at one end and a fitting 17 at its other end for attachment to a connector tube 18 for connecting it to a gas outlet.

The back 11 is provided with upwardly opening vertical notches 19 for reception of coupling clips on the grate.

Grate G is largely of conventional design, including forward and rear leg arches 21 bridged by basket U-bars 22 welded thereto. Leg arches 21 are adapted to rest on the same firebox floor which supports pan A. To two of the U-bars 22 (e.g. the second bar from each end) are secured respective vertical fingers 23 having downwardly extending portions to which are secured coupling clips 24 of channel section. The web 25 of each clip (FIG. 5) is welded to a side of a respective finger 23 in a plane at right angles to the longitudinal axis of the assembly, and its lateral lips 26 are spaced from the front and rear side of the finger to define slots in which vertical edges of the back 11 in notches 19 may be received. The two clips 24 may be arranged with their coupling lips 25 extending in opposite directions, to provide a symmetrical arrangement, although this is not essential.

U-bars 22 collectively define a basket in which a pile of logs D may be supported, with two base logs resting directly against the U-bars and one or more additional logs piled upon the two base logs, positioning and spacing them for improved support of the superimposed log or logs.

Refractory body C comprises a main body of silica sand 30 and a thin surface coating 31 comprising a mixture of asbestos and expanded mica (e.g. Zonolite) particles 32 along with a minor proportion of artificial volcanic rock fragments 33. This mixture, in the presence of burning gas, provides a visual surface effect of mottled appearance, a mixture of dark and bright spots, the dark spots being created by the deeper recesses of the mixture, the high fringes of the mixture glowing where the flame touches them, the expanded mica particles and asbestos fibers glowing with a reddish color, and the non-glowing portions remaining a greyish white having the appearance of ashes. The glowing coals mixture 31 covers the silica grains 30 completely but not uniformly, being scattered over the sand body so as to obscure the same somewhat unevenly. The volcanic rock fragments 33, when heated to incandescence, will attain a more sustained glow than the asbestos and mica particles, which create a somewhat flickering glow when touched by slightly flickering flames of the burning gas. The overall effect is an appearance of red coals, dark burned clumps and greyish white ashes. When cold, the mixture 31 gives the appearance of grey-white ashes.

As indicated in FIG. 3, a second burner pan A2 (shown in phantom) may be coupled to clips—in back-to-back relation to pan A, where a more extensive bed of coals is desired. The pan A2 is coupled to the alternate pair of coupling lips.

I claim:

1. In a gas log assembly, in combination:

a burner comprising a tube having a gas-emitting orifice; a pan for holding a gas-diffuser bed of loose, noncombustible particles covering said burner tube and dispersing the gas jet issuing from said orifice for burning at the surface of said body;

said pan having a bottom for resting flatly on a hearth in a horizontal plane and its front being completely open so that said bed can extend beyond its front margin and rest directly on the hearth so as to conceal said front margin; said pan having an upstanding back to contain the rear portion of said bed and having generally triangular ends with free margins sloping downwardly and forwardly from the upper margin of said back to the plane of said bottom at the forward margin thereof, said sloping margins functioning as guides to determine a slope for the forward surface of said gas-diffuser bed, said burner being disposed above said bottom and closely adjacent thereto intermediate its forward margin and said back;

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said pan being attached to said burner in fixed relation thereto;

a grate disposed above said burner when resting on said hearth; and

means for loosely coupling said grate to said pan to position the grate with reference to the pan and burner while allowing the grate to be freely lifted off the burner and pan assembly.

2. The combination defined in claim 1, wherein said loosely coupling means comprises a pair of fingers projecting downwardly from said pan; and

respective coupling clips on said fingers, defining vertical slots in which vertical edges of said back are loosely received to position said grate relative to said burner while allowing the grate to be freely lifted off the burner.

3. The combination defined in claim 2, wherein said back has a pair of vertical open notches in its upper marginal portion, one side of each notch defining one of the vertical edges loosely received in said coupling clips.

4. The combination defined in claim 2, wherein said back has a pair of vertical slots adapted to receive said clips, said vertical edges being defined within said slots.

5. The combination defined in claim 1, including said gas-diffuser bed comprising a main body of silica grains contained in said pan in a heap covering said burner tube.

6. The combination defined in claim 1, including said gas-diffuser bed comprising a main body of silica grains contained in said pan in a heap covering said burner tube; and

a thin surface coating of asbestos particles mixed with a minor proportion of larger particles of artificial volcanic rock and cinders adapted when areas of said coating are contacted by flames, to simulate glowing coals and ashes on the surface of said bed.

7. The combination defined in claim 1, including said gas-diffuser bed comprising a main body of silica grains contained in said pan in a heap covering said burner tube; and

a thin surface coating of asbestos particles mixed with a minor proportion of larger particles of artificial volcanic rock adapted when areas of said particles are contacted by flames, to simulate glowing coals and ashes on the surface of said refractory body;

said thin coating further including expanded mica particles mixed with said asbestos and volcanic rock particles.

8. The combination defined in claim 1, including said gas-diffuser bed comprising a main body of silica grains contained in said pan in a heap covering said burner tube;

said gas-emitting orifice being disposed on the underside of said burner tube and directing the emitted gas jets downwardly.

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