United States Patent [19]

Coats

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[54] **DECORATIVE FIREPLACE APPLIANCE ASSEMBLY**

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[52] **U.S. Cl.** ..... **126/92 R,** 126/127, 431/125

[51] **Int. Cl.** **F24c 15/00**

[58] **Field of Search** ..... 126/127, 92 R; 431/125, 354; 110/1 F

[56] **References Cited**

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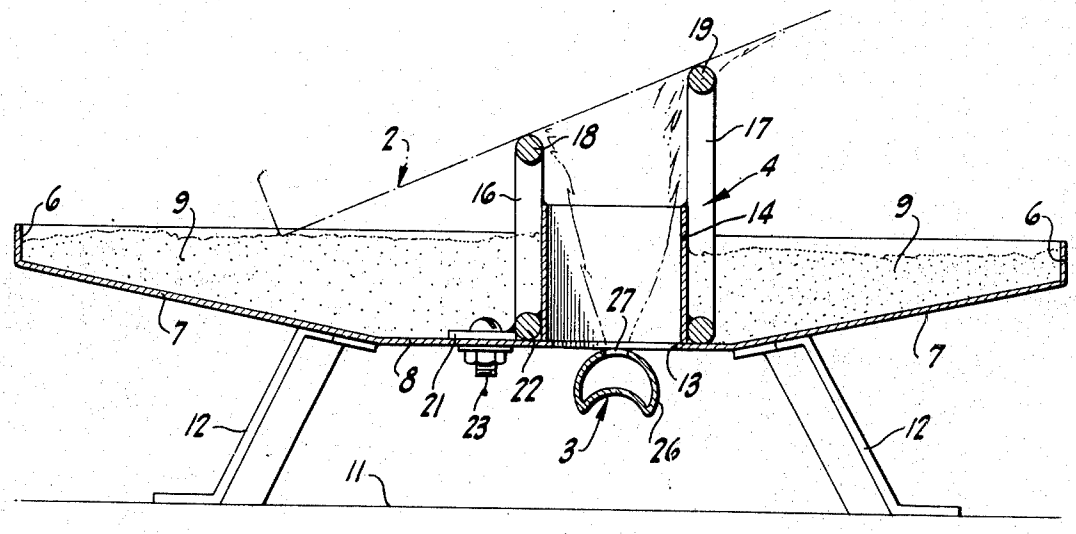
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[57] **ABSTRACT**

A decorative fireplace appliance assembly including a simulated non-combustible log structure supported above an improved support pan having a flame source in the form of a gas burner extending beneath the support pan. The pan is provided with a central opening, preferably elongated and slot shaped extending from adjacent one end of the pan to the other, located directly beneath the log structure to permit flame to be directed upwardly into contact with the undersurface of the log structure. The pan opening is surrounded by a support unit defined by a rim member contoured in accordance with the shape of the pan opening to which log structure support rod members are integrally connected. The pan base is concavely contoured to receive sand or other decorative particulate matter therein beneath the log structure.

15 Claims, 7 Drawing Figures



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2 Sheets-Sheet 1

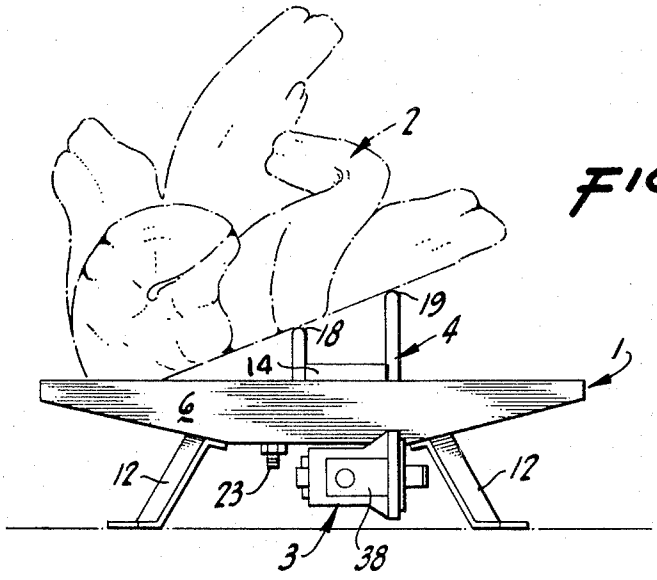


FIG-1

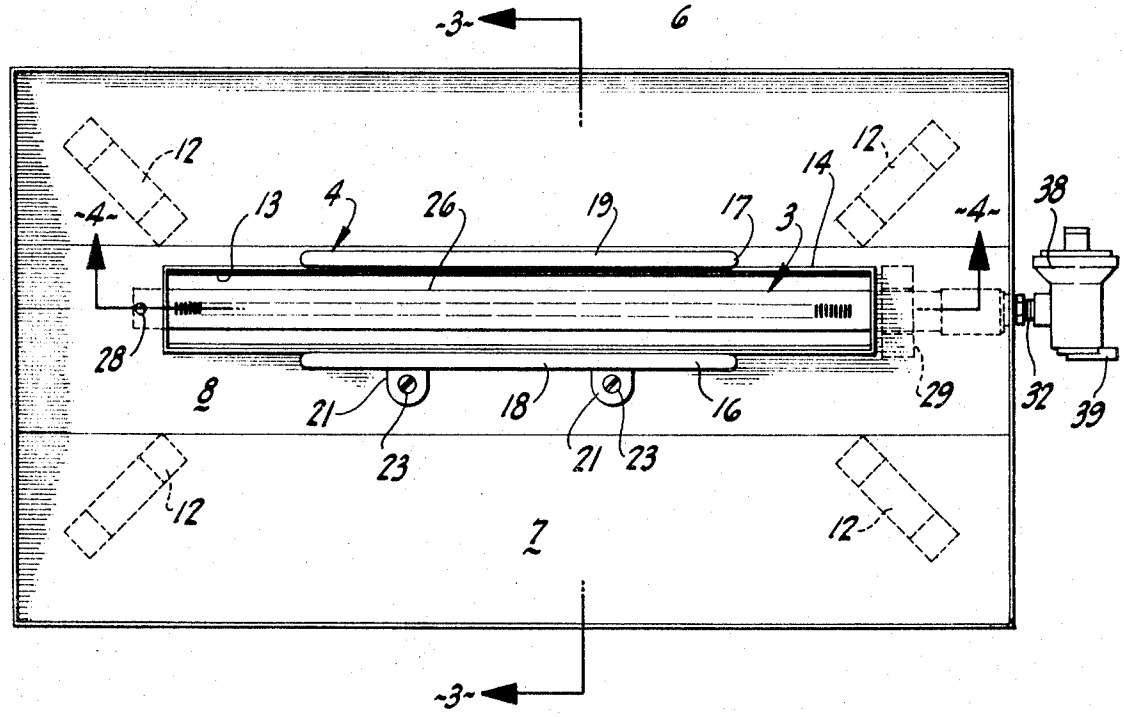
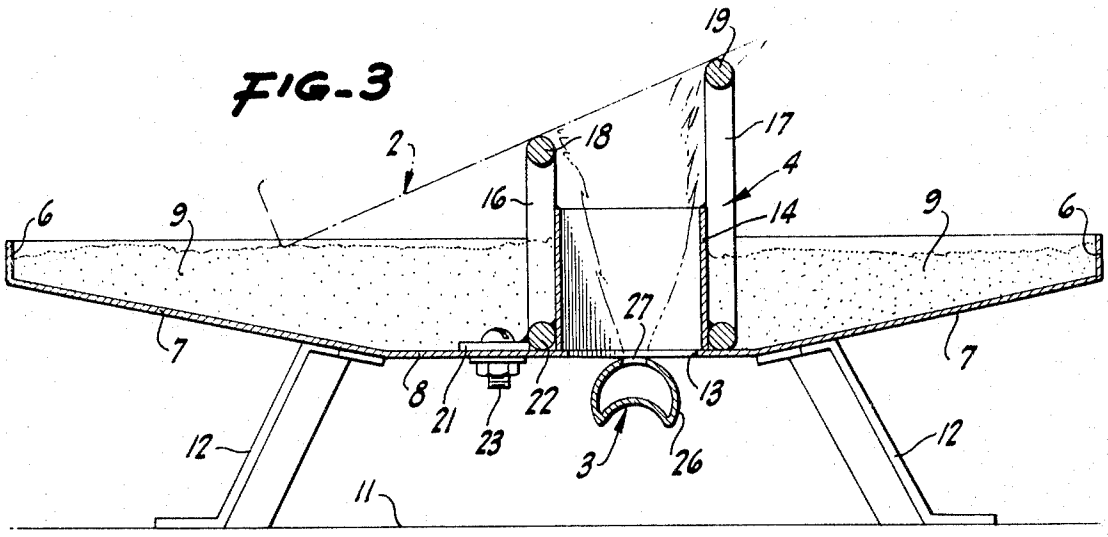


FIG-2

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FIG-3



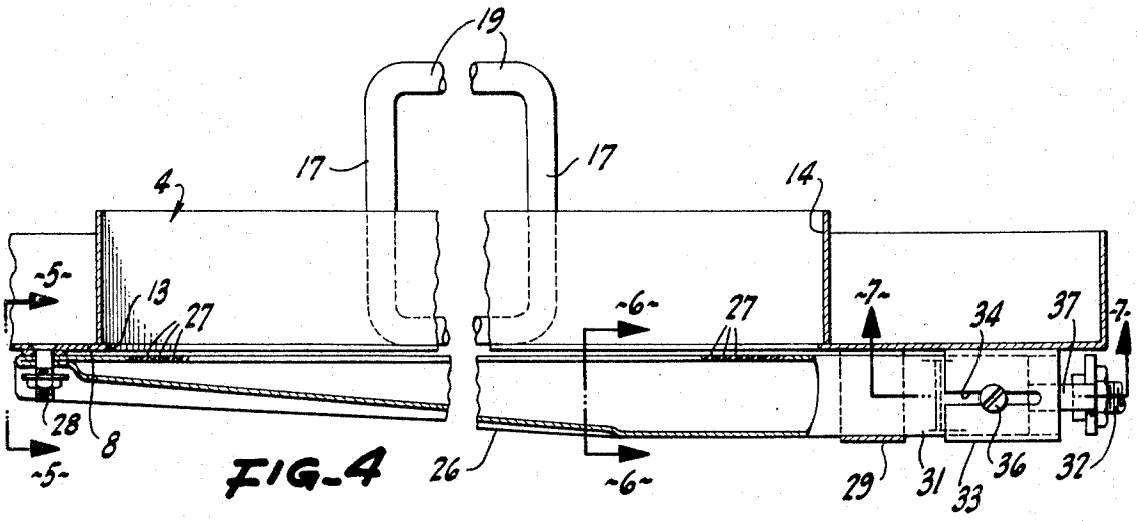


FIG-4

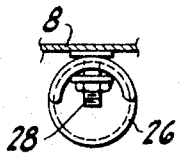


FIG-5

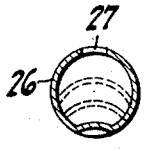


FIG-6

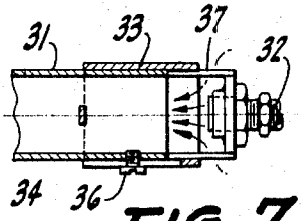


FIG-7

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DECORATIVE FIREPLACE APPLIANCE ASSEMBLY

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to decorative fireplace appliances, and more particularly to the field of such appliances which utilize a simulated non-combustible log structure and an artificial flame source in conjunction therewith.

More particularly, this invention relates to the field of improved means for supporting simulated log structures in a decorative fireplace appliance assembly and for more effectively and safely directing an artificial flame against the log structure to simulate buring thereof. Still more particularly, this invention relates to the field of improved support pan structures for simulated logs in decorative fireplace appliance assemblies.

2. Description of the Prior Art

So far as is known, the particular features emphasized hereinafter for the subject decorative fireplace appliance assembly have been unknown heretofore. While decorative fireplace assemblies utilizing simulated log structures of a non-combustible nature supported above a supporting pan having a flame source beneath the pan, such as a gas burner, have been generally known heretofore, so far is known, the concept of this invention by means of which an artificial flame is positioned to be directed directly against the undersurface of a simulated log structure has been unknown heretofore.

That is, in prior known devices utilizing a gas burner beneath a log support pan, such pans have been generally imperforate so that the gas flame emanating from the burner passes over the underside of the pan and around its outer periphery, rather than directly upwardly through the pan into direct contact with a simulated log structure supported by the pan. With such prior art devices, not only is the simulation of burning of the log structure less realistic than with the present structure but certain safety hazards are encountered because of the manner in which the flame is permitted to pass upwardly around the pan, rather than directly therethrough.

So far as is known, the improvement of providing an opening directly through the base of a support pan so that flame emanating from a gas burner positioned beneath the pan may pass directly therethrough into contact with the undersurface of a simulated log structure has been unknown heretofore. Additionally, the improved pan support means provided for properly positioning and maintaining a simulated log above the base of the pan in the manner shown herein also has been unknown heretofore, particularly in conjunction with the novel arrangement shown herein.

SUMMARY OF THE INVENTION

The present invention relates generally to an improved decorative fireplace appliance assembly. More particularly, this invention relates to the fireplace appliance defined by an improved pan structure having an opening provided directly in the base thereof beneath which a flame source, such as a gas burner, is positioned to direct a flame directly upwardly through the pan structure rather than around the pan structure as in prior known devices.

Still more particularly, this invention relates to an improved decorative fireplace appliance assembly utilizing therein improved means for supporting a simulated log structure during simulated burning of such log structure.

From the foregoing it should be understood that objects of this invention include the provisions of: an improved decorative fireplace appliance assembly; the provision of a decorative fireplace assembly which provides more realistic simulated burning of a non-combustible log structure; the provision of improved means for supporting a simulated log structure in a decorative fireplace appliance assembly; the provision of improved support pan structure for a fireplace appliance assembly which permits direction of a flame directly against the undersurface of a simulated log which forms part of the assembly; and the provision of a decorative fireplace appliance assembly which effectively simulates the burning of a log under conditions which are safer and more realistic than those known heretofore with similar devices.

These and other objects of this invention will become apparent from a study of the following detailed disclosure in which reference is directed to the appended drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is an end elevational view of the subject decorative fireplace appliance assembly illustrating a simulated log structure in position therein in dotted lines.

FIG. 2 is a plan view of the appliance assembly with the log structure omitted for purposes of clarity of illustration.

FIG. 3 is a vertical sectional view through the assembly taken in the plane of line 3—3 of FIG. 2.

FIG. 4 is a side elevationsl view of the appliance assembly taken in the plane of line 4—4 of FIG. 2.

FIGS. 5 and 6 are vertical sectional views through a portion of the assembly taken in the planes of lines 5—5 and 6—6 respectively of FIG. 4.

FIG. 7 is a horizontal sectional view through the flame source of the assembly taken in the plane of line 7—7 of FIG. 4.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring first ot FIG. 1, the decorative fireplace appliance assembly of this invention includes as its principal components a support pan 1 above which is positionable a decorative non-combustible log structure 2 and a flame source, generally designated 3, which extends longitudinally of the pan for generally its full length beneath the undersurface thereof. The support pan includes support means, generally designated 4, for properly positioning and supporting the log structure above the support pan in the fashion seen in FIG. 1.

The support pan is formed from any suitable material, such as sixteen gauge cold rolled steel painted any suitable color, of which black is preferred. The support pan, as seen from FIG. 2, is generally rectangular in plan view and is defined by a continuous peripheral wall 6 which forms a continuation of the base thereof on all four sides of the pan. The pan base as seen in FIG. 3 is defined by opposed downwardly and inwardly sloping outer portions 7 and a generally horizontal inner portion 8.

Thus, as seen best in FIG. 3, the pan defines a concave elongated trough which is designed to receive therein a mass of decorative material, generally designated 9, which may be sand or other non-combustible decorative particulate matter. The peripheral wall 6 of the pan cooperates with a portion of the support means 4 to be described to maintain the mass of decorative material within the pan. As seen also in FIG. 3, the decorative material provides a base for supporting a portion of the log structure 2 at a predetermined position of orientation relative to the pan in conjunction with the support means 4 as will be described.

Means if provided for supporting the pan above the base of the fireplace, generally designated 11, in FIG. 3. Such means comprises leg structures defined by a series of generally Z-shaped leg members 12 secured at suitable locations to the under surface of the pan. In that regard, four such legs are utilized in the embodiment illustrated with such legs being positioned at appropriate locations adjacent the four corners of the pan as best seen in dotted lines in FIG. 2. In that regard, the legs may be formed from any suitable material, such as the same material from which the pan is formed, and such legs are welded or otherwise secured to the pan to provide a solid support base therefor.

An important and improved aspect of this invention over prior known decorative fireplace appliances assemblies is provided for forming an opening 13 in the inner portion 8 of the pan base as best seen in FIGS. 2 and 3. Such opening, in the preferred embodiment, is elongated and extends for the major portion of the length of the pan from adjacent the oppooste ends thereof. In that regard, the opening is preferably slot shaped and is defined by a generally rectangular opening as best seen in FIG. 2 which extends for the major portion of the length of the pan generally in line with its longitudinal axis.

The aforementioned support means for the log structure is specially designed to cooperate with the slot structure for effective support of the log structure and for maintenance of the mass of decorative particulate matter 9 within the trough defined by the pan. In that regard, the support means 4 includes a generally rectangular shaped rim member 14 having generally the same contour and only slightly larger dimensions than the dimensions of the slot 13. As best seen in FIGS. 3 and 4, the rim member surrounds the slot and projects upwardly from the inner base portion 8 of the pan to a level slightly higher than the level of the peripheral wall 6 of the pan. The rim member preferably is formed from the same material as the pan.

Secured directly to the rim member are rod structures by which the log structure is directly supportable. Such rod structures comprise a pair of opposed rod members 16 and 17 which, as best seen in FIG. 4, are generally rectangular and have a closed-loop shape. The members 16 and 17 are secured to the outer surfaces of the opposed wall portions of the rim member 14, such as by welding or the like. Thus, a single integral unit is defined by the rim member and the attached rod members. The rod members may be formed from any suitable material, such as cold rolled steel.

As seen form FIGS. 3 and 4, each of the rod members is provided with a generally straight upper portion, designated 18 and 19 respectively. The upper rod portion 19 of rod member 17 is located at a level higher than the corresponding upper portion 18 of rod member 16 so that the log structure supported thereon is inclined relative to one edge of the pan, as best seen in FIG. 1. The upper portions 18 and 19 of the rod members are generally parallel to each other but lie on different levels as noted and are similarly generally parallel to the inner flat base portion 8 of the pan so that a firm support structure for the log structure is insured.

The rim member 14 and integral rod members 16 and 17 are connectable as a unit to the inner base portion 8 of the pan in surrounding relationship with the slot 13 in the manner best seen in FIG. 3. In that regard, two mounting brackets 21 are secured by welding or the like to rod member 16. In that regard, in the embodiment illustrated, such brackets are secured by welding to a generally straight lower portion 22 of rod member 16 which contacts the base of the pan. Appropriate bolt and nut assemblies, designated 23, are utilized to secure the support structure as a unit securely to the pan as seen in FIGS. 2 and 3. Appropriate openings are provided in the pan base to accommodate the bolt fasteners therethrough without permitting leakage of the particulate decorative material 9 therethrough.

The aforementioned flame source 3 extends longitudinally beneath the pan as best seen in FIG. 2. Such flame source comprises a conventional commercially available gas burner tube, generally designated 26, such tube having a series of slotted openings 27 therein uniformly positioned along its length as seen in FIG. 4. The gas burner tube is directly aligned with and underlies the slotted opening 13 in the pan so as to be in direct alignment with and underlying the log structure supported above such slotted opening.

The gas burner tube is secured to the pan in any suitable fashion, such as by a bolt and nut assembly 28 secured to the underside of the pan and depending therefrom in the manner seen in FIGS. 4 and 5. The opposite end of the burner tube also is supported by the pan and a suitable bracket 29 welded or otherwise suitably secured to the undersurface of the pan is provided for that purpose.

For most effective gas distribution along the length of the gas burner, the contour of the burner tube is changed to decrease its internal volume in the manner best seen in FIGS. 4 through 6. Also, for effective gas distribution, the slotted openings 27 are directed back toward the source of gas entering the tube in the manner and for a purpose well known in the gas burner art. At its end 31, the gas burner tube is provided with a conventional fitting 32 to be secured to any suitable gas source and control unit in known fashion.

Also, at such end 31, the burner tube is provided with a slidable sleeve 33 having a slot 34 in one side thereof which travels along a guide screw 36 threaded into the wall of the tube. The purpose of the sleeve 33 is to permit adjustment of the amount of ambient air allowed to enter the tube to be mixed with gas entering through the fitting 32 so that most effective gas burning may be insured under varying conditions. In that regard, it should be understood that the end of the tube is generally open as noted at 37 in FIG. 7 so that ambient air may enter and be drawn into the tube in conjunction with the entry of gas through the fitting 32.

Any suitable gas flow control unit, generally designated 38 in FIG. 2, having an on-off control valve 39 in conjunction therewith, may be operatively connected with the burner tube 26 through the gas fitting 32. Such a control unit is conventional and utilization

of such a unit is well known in the art to which this invention relates.

With the subject decorative fireplace appliance it has been found that substantially no maintenance is required and that the fireplace area surrounding the assembly may be kept clean and neat in that the decorative particulate matter utilized is positively retained within the trough defined by the support pan and will not exit from the same if normal care is utilized in conjunction with operation and cleaning of the assembly.

With the arrangement shown, it should be understood that the rim member 14 functions much as a chimney to direct flame from the gas burner tube upwardly through the rim member into direct contact with the undersurface of the log structure 2. In that regard, such chimney effect is an improtant improvement over prior known devices which have no central opening through the pan base. With prior known arrangements, the flame emanating from a gas burner beneath the pan necessarily passed from underneath the pan over the undersurface of its base and around its outer walls to substantially engulf the entire assembly. Such an arrangement has been found to be less than safe under many conditions, particularly in contrast to the present assembly. In that latter regard, so far as is known, the construction illustrated and described herein is the only decorative fireplace assembly to thus far have been certified by the American Gas Association because of the safe operating conditions insured with the present arrangement.

The simulated log structure 2 may take many forms and contours and any suitable ceramic or other non-combustible material may be utilized therefor. By painting the log structure with non-combustible paints which are commercially available, very effective and realistic simulations of real logs of any particular type may be obtained.

Having thus made a full disclosure of this invention, reference is directed to the appended claims for the scope of protection to be afforded thereto.

I claim:

1. A decorative fireplace appliance assembly comprising

A. a support pan for a simulated log structure having an opening through the base thereof,

1. said opening being located generally centrally of said pan and extending generally laterally thereof,

B. a flame source disposed beneath said pan in alignment with said opening and extending generally laterally of said pan in the same direction as said opening,

C. a peripherally continuous rim member secured to said base of said support pan and projecting upwardly from said base and surrounding said opening,

D. a retaining wall defining an outer peripheral margin of said support pan,

1. said wall and said rim member together defining a depressed pan portion for receiving and retaining sand or other decorative particulate matter therein to underly a log structure to be supported above said support pan, and

E. support means generally in alignment with said opening and projecting above said pan to support such log structure above said opening in alignment with flame emanating from said flame source and passing through said opening.

2. The assembly of claim **1** in which said opening is defined by an elongated slot located generally centrally of said pan which extends from adjacent one end thereof to adjacent an opposite end thereof.

3. The assembly of claim **1** in which said support means for said log structure is secured directly to said rim member and is connectable with said rim member to said base of said pan as an integral unit.

4. The assembly of claim **3** in which said support means comprises a pair of opposed rod members secured to opposite portions of said rim member to project thereabove on opposite sides of said opening in said pan.

5. The assembly of claim **4** in which said rod members include generally straight upper sections which are in generally parallel relationship with each other and with said base of said support pan, one of said upper sections being spaced at a greater height relative to said pan base than the other member.

6. The assembly of claim **1** in which said flame source comprises an elongated gas burner extending generally the full length of said pan beneath said elongated opening for directing a gas flame therethrough directly against the underside of a log structure supported above said opening over generally its full extent.

7. The assembly of claim **6** in which said gas burner includes means at one end thereof for effecting modification of the amount of ambient air mixed with gas to be burned in said burner.

8. The assembly of claim **1** which further includes

E. leg structure secured to the underside of said support pan for supporting said assembly above the base of a fireplace.

9. The assembly of claim **1** in which said opening is defined by an elongated slot formed in the base of said support pan; and in which said support means comprises an integral unit defined by a rim member having the same general contour as said slot, and a pair of opposed rod members secured directly to opposed portions of said rim member and connectable therewith as a unit to the base of said pan with said rim member surrounding said slot and said rod members lying on oppsosite sides of said slot.

10. The assembly of claim **9** in which said rod members include upper sections thereof which lie at different elevations relative to the base of said pan so that said log structure to be supported thereon is inclined relative to said base.

11. The assembly of claim **9** in which said pan includes a peripheral retaining wall defining the outer margin thereof, said wall and said rim member defining a concave pan portion surrounding said slot for receiving and retaining sand or other decorative particulate matter therein beneath said log structure.

12. The assembly of claim **9** which further includes

D. a decorative simulated non-combustible log structure resting upon and supported by said rod members above said slot in direct alignment with said flame source underlying said slot.

13. A decorative fireplace appliance assembly comprising

A. a support pan for a simulated log structure having an opening through the base thereof,

B. an integral peripherally continuous rim member secured to said base of said support pan and pro-

jecting upwardly from said base and surrounding said opening,

C. a retaining wall defining an outer peripheral margin of said pan,

1. said retaining wall cooperating with said rim member in defining a concave pan portion surrounding said opening for receiving and retaining sand or other decorative particulate matter therein,

D. a flame source disposed beneath said pan in alignment with said opening, and

E. support means adajcent said opening and projecting above said pan to support such log structure above said opening in direct alignment with flame emanating from said flame source,

1. said sand or other decorative particulate material in said pan underlying said log structure supported on said support means.

14. A decorative fireplace appliance assembly comprising

A. a support pan for a simulated log structure having an opening through the base thereof,

B. an integral peripherally continuous rim member secured to said base of said support pan and projecting upwardly from said base and surrounding said opening

C. a flame source disposed beneath said pan in alignment with said opening, and

D. support means adjacent said opening and projecting above said pan to support such log structure above said opening in direct alignment with flame emanating from said flame source, said support means being secured directly to said rim member and connectable with said rim member to said base of said support pan as an integral unit, such support means comprising

1. a pair of opposed rod members secured to opposite portions of said rim member to project thereabove on opposite sides of said opening in said pan,

2. said rod members including generally straight upper sections which are in generally parallel relationship with each other and with said base of said support pan,

3. one of said upper sections being positioned at a greater height relative to said pan base than the straight section of the other member.

15. A decorative fireplace appliance assembly comprising

A. a support pan for a simulated log structure having an opening through the base thereof,

1. said opening being defined by an elongated slot formed in the base of said support pan,

B. a flame source disposed beneath said pan in alignment with said opening, and

C. support means adjacent said opening and projecting above said pan to support said log structure above said opening in direct alignment with flame emanating from said flame source, said support means comprising

1. an integral unit defined by a rim member having the same general contour as said slot,

2. a pair of opposed rod members secured directly to opposed portions of said rim member and connectable therewith as a unit to the base of said pan with said rim member surrounding said slot and said rod members lying on opposite sides of said slot,

3. said rod members including upper sections thereof which lie at different elevations relative to the base of said pan so that said log structure to be supported thereon may be inclined relative to said base.

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