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54 **Simulated log burning fireplace.**

57 As thin, elongated box-like burner (10) for holding liquid fuel has slotted openings (11) along its top for the flame and platforms (12) attached at the top and bottom for supporting imitation, noncombustible logs above and in front of the burner with a fuel storage chamber (17) behind the burner and a conduit (18) for conveying the fuel from the storage chamber (17) to the burner (10) with the storage chamber (17) being tilted to cause the fluid to flow to the burner (10). Wicks (22) are provided in the burner (10) to assist in igniting the fuel and enhancing the burning characteristics.

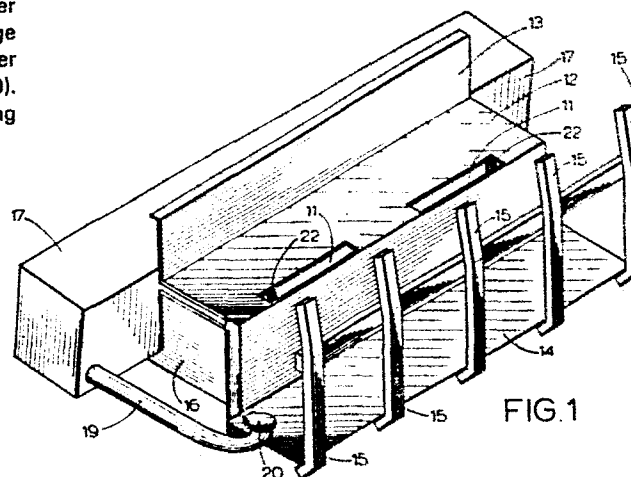


FIG.1

This invention is to provide a simulated log burning fireplace. Because of the manner of its construction it can be either inserted into an existing fireplace enclosure or can be enclosed in a suitable structure for use anywhere in a room.

5 The burner is arranged with respect to artificial noncombustible logs so as to give the appearance of a flame that is consuming the logs. A storage chamber holds fluid fuel which is carried to the burner by a conduit between the storage chamber and the burner. A filler tube is provided to fill the storage
10 chamber, so fuel is not fed directly from the filler tube into the burner.

A simulated log burner which utilizes liquid fuel is shown in U.S. Letters Patent 3,817,686. In the 3,817,686 patent a diffuser block serves as a burner element and is located in front
15 of and below the imitation logs so that the flame is always in front of the logs. Another simulated fireplace system is shown in U.S. Letters Patent 4,076,490 which illustrates an imitation noncombustible log having recesses or cavities for holding the liquid fuel and when the fuel is ignited it gives the appearance of a
20 flame springing directly out of the artificial log. Each of these previous devices and others of a similar nature have numerous drawbacks. One is that they do not authentically reproduce the illusion of an actual wood burning fireplace. In the case of the recessed log device there is danger of fuel spillage if the log should be
25 tilted or tipped. Also, the log is likely to become hot and virtually impossible to handle until it has cooled off. It cannot be re-filled for some time after burning has been completed.

In the case of the 3,817,686 patent some means, in addition to the burner, must be provided to hide the fuel tank from the viewer. Also,
30 the individual diffuser burners can easily become clogged.

A thin vertical box-like burner having a width approximating that of the length of a fireplace log contains liquid fuel with

openings in the top of the burner for the flame to come out. Platforms are provided to support an imitation noncombustible log over the top of the burner and in front of the burner to simulate a log burning fireplace. A storage tank or chamber for the fuel is provided and is in fluid communication with the burner to feed the fuel to the burner. A conduit connects the bottom of the fuel storage chamber to the burner and the chamber is tilted forward and sideward to insure that the fluid flow is always toward the burner and not to the storage tank. A filler tube is provided by which fuel is poured into the storage chamber. A set of vertical bars in front of the burner helps keep the imitation logs in place and enhances the appearance of the device. Features and advantages of this invention will become apparent during the course of the following detailed description.

Fig. 1 is a perspective view taken from the top left side of a preferred embodiment of the invention;

Fig. 2 is a side elevational view;

Fig. 3 is a front elevational view; and

Fig. 4 is a rear elevational view.

A thin wide box-like burner 10 is made of some suitable metal such as cold-rolled steel closed on all sides with slot-like openings 11 along the top. The burner normally contains fluid fuel and when the fluid is ignited the flame comes through the top openings 11. A suitable fuel is provided to give a colorful flame simulating the flame of a wood burning fireplace. The width of burner 10 is generally the length of a conventional fireplace log so as to closely simulate an actual log burning fireplace. Typically, with no limitation thereto intended, the burner 10 may have dimensions in the order of about 17-1/2" x 5" x 1/2".

Attached to the top of the burner 10 and extending rearward therefrom is a flat metal plate or platform 12 upon which an imitation noncombustible log (shown in dotted line in Fig. 2) sets.

Extending upward from the rear edge of platform 12 is a back rest 13 which is located at a distance so that the imitation log resting on platform 12 is above and at least part way over the top of the burner 10 to more accurately simulate the actual
5 burning of a wood log. The back rest 13 may be a flat plate metal member or supporting bars or the like. Attached at the lower front of the burner 10 in some convenient fashion, such as by welding, is a second platform member 14 upon which another imitation log (shown in dotted line in Fig. 2) rests. Extending verti-
10 cally upward from the front of lower platform member 14 is a plurality of parallel bars or rods 15 which serve the dual purpose of keeping the log resting on platform 14 in place and for making the device appear similar to a log burning fireplace.

Located behind the burner 10 and attached thereto by metal
15 brackets 16 which are suitably fastened, such as by welding, is a storage tank or chamber 17 for the liquid fuel. The storage chamber 17 is generally rectangular in cross section made out of some suitable metal such as steel for rigidity and is completely enclosed except for air vents preferably located in the top of the chamber.
20 The volume of storage chamber 17 is considerably greater than that of burner 10. Typically, with no limitation intended but merely for the purpose of giving a general indication of the volume ratios, a storage chamber used with the burner having the dimensions stated earlier may be in the order of 24" x 3-1/4" x 3-1/4".
25 Attached to the bottom right front of the storage chamber 17 (as viewed in Fig. 3) is a tube or conduit 18 which provides fluid communication between the storage chamber 17 and the burner 10.
Attached to the front and near the left side of storage chamber 17 is a filler tube 19 having a suitable spring-loaded cap 20 which
30 provides the means for filling storage chamber 17 with liquid fuel. It can be seen that storage chamber 17 is tilted forward and right-

ward so that the fluid always has a tendency to flow out of the storage chamber 17 through the conduit 18 and into the burner 10. Of course the filler tube 19 must be suitably arranged so that the fluid does not flow back out of the filler tube.

5 It is contemplated that the liquid fuel be basically methylalcohol or methanol but in a mixture which will produce a bright yellow luminous flame instead of the nonluminous bluish flame which is normally produced by methanol. A feature of this invention is that it provides relatively lengthy burning before
10 requiring a refill.

 In each of the burner slot openings extending downward from the top of the burner to slightly above the bottom is a ceramic rope-like wick 22. It has been found that wicks 22 not only greatly aid in initially igniting the fuel, especially when the
15 burner is less than substantially full, but also seem to enhance the burning characteristics of the fuel. The wicks 22 are also noncombustible and apparently operate on the principle of the fluid wetting the wick throughout its length by capillary action so that the wicks can be easily ignited by a lighted match and
20 appear to aid in continuing the burning of the fluid.

 In operation, no means is provided for quenching the flame once it has started. The amount of burning time will be determined by the amount of fuel that is fed into the burner. Typically, for example, it has been found that a quart of fluid
25 will burn for about one hour. A quart of fuel placed in the storage chamber 17 will only partially fill the burner 10 so the wicks 22 when lit assist substantially to ignite the fuel in the burner and to keep the flame burning until virtually all of the fuel has been consumed.

C L A I M S

- 1 1. A simulated log burning fireplace, comprising:
2 a wide, thin, box-like burner means for containing
3 liquid fuel having slotted openings on its top side for a flame
4 when the fuel is ignited;
5 a first platform located above and at least in part
6 behind said burner means for holding a noncombustible artificial
7 log;
8 a second platform located at the bottom of and extending
9 forward from said burner means for holding another noncombustible
10 artificial log;
11 a storage chamber for liquid fuel located behind and
12 displaced from said burner means; and
13 means connected between said burner means and said storage
14 chamber for conveying liquid fuel from said storage chamber to
15 said burner means.
- 1 2. The device as described in claim 1 wherein said means
2 for conveying fuel to said burner means is a closed conduit; and
3 said storage chamber is normally tilted frontward to cause fluid
4 to flow from said storage chamber to said burner means through said
5 closed conduit.
- 1 3. The device as described in claim 2 further including
2 a set of parallel, spaced-apart, rod members extending upward from
3 the front of said second platform to substantially above the level
4 of said first platform.
- 1 4. The device as described in claim 3 further including
2 a backing member extending upward from about the rear of said first
3 platform at a location to keep the artificial log on said first
4 platform at least partly over the burner slotted opening such as to
5 simulate actual log burning.

1 5. The device as described in claim 2 further including
2 a filler tube for said storage chamber extending frontward from
3 said chamber, the attachment of the filler tube to the storage
4 chamber being located above the attachment of the closed conduit
5 to the storage chamber.

1 6. The device as described in claim 5 wherein the filler
2 tube is attached near one side and the closed conduit is attached
3 near the other side of said storage chamber.

1 7. The device as described in claim 6 wherein the storage
2 chamber is also tilted downward from the one side toward the other
3 side.

1 8. The invention as described in claim 7 further including
2 wick means extending downward from a top opening in said burner into
3 the fuel contained in said burner for igniting the fuel and for
4 aiding in keeping it burning.

