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(19) **United States**(12) **Patent Application Publication**
Formosa et al.(10) **Pub. No.: US 2006/0219236 A1**(43) **Pub. Date: Oct. 5, 2006**(54) **FIREPLACE PLUG**(52) **U.S. Cl.** 126/319; 126/500(76) Inventors: **David J. Formosa**, Powell River (CA);
Joe Pate, Abbotsford (CA); **Rozanne**
Gail Gray, Abbotsford (CA)(57) **ABSTRACT**

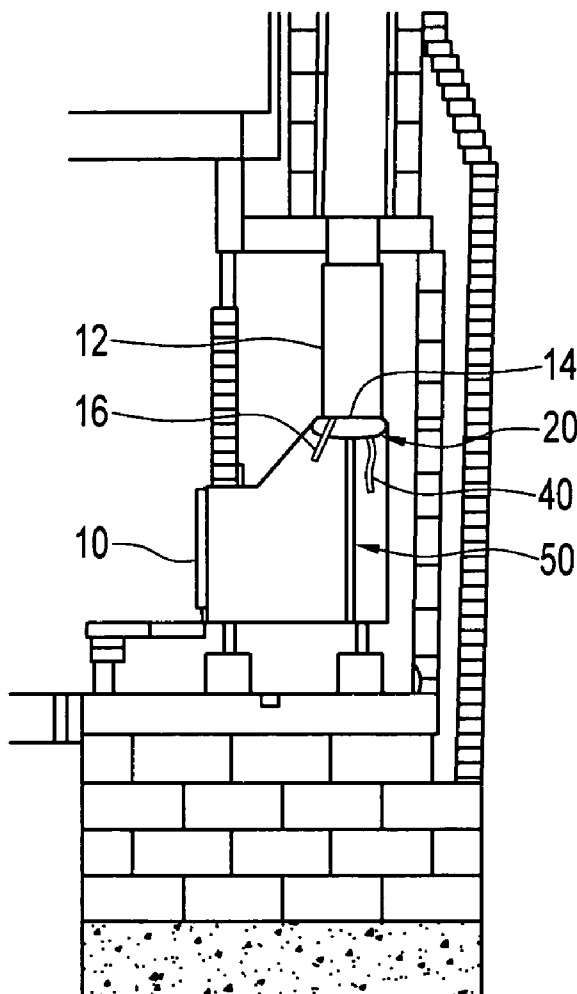
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VANCOUVER, BC V6E 3Z3 (CA)(21) Appl. No.: **11/377,654**(22) Filed: **Mar. 17, 2006**(30) **Foreign Application Priority Data**

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There is provided, in combination, a fireplace having a flue and a damper handle, and a fireplace flue sealing device. The fireplace flue sealing device has an inflatable bag-like member with a top portion and a bottom portion of a flexible, air impermeable material. The top portion and the bottom portion are sealed together about an outer periphery of the bag-like member for retaining pressurized air therebetween. The bag-like member has a selectively slitable, sealed area extending from the outer periphery towards the centrally located, sealed, non-inflatable area. The bag-like member is sized and shaped to sealingly engage the fireplace below the flue thereof when inflated. There is also a closable conduit communicating with the bag-like member for admitting pressurized air into the bag-like member.



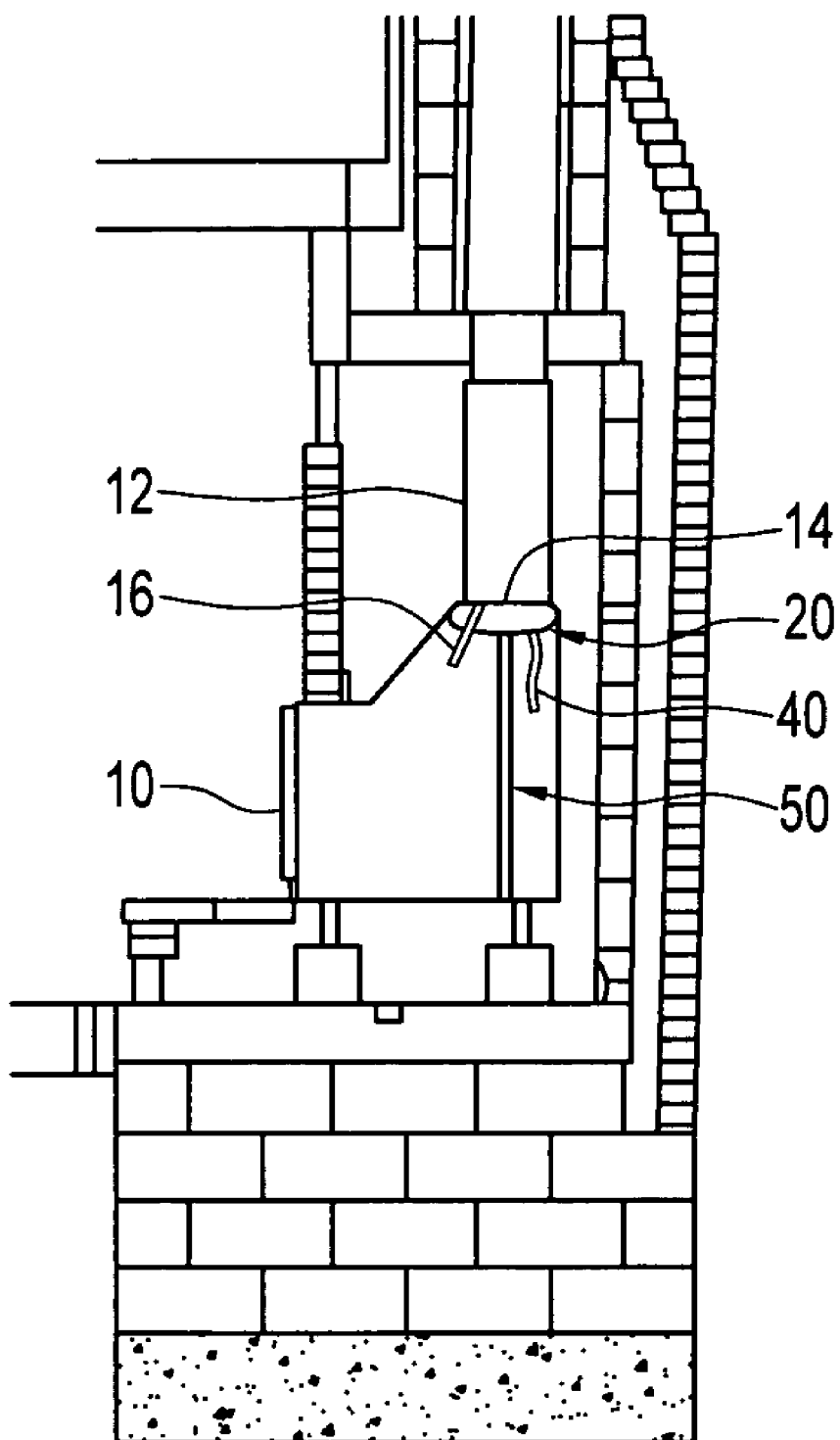


FIG. 1

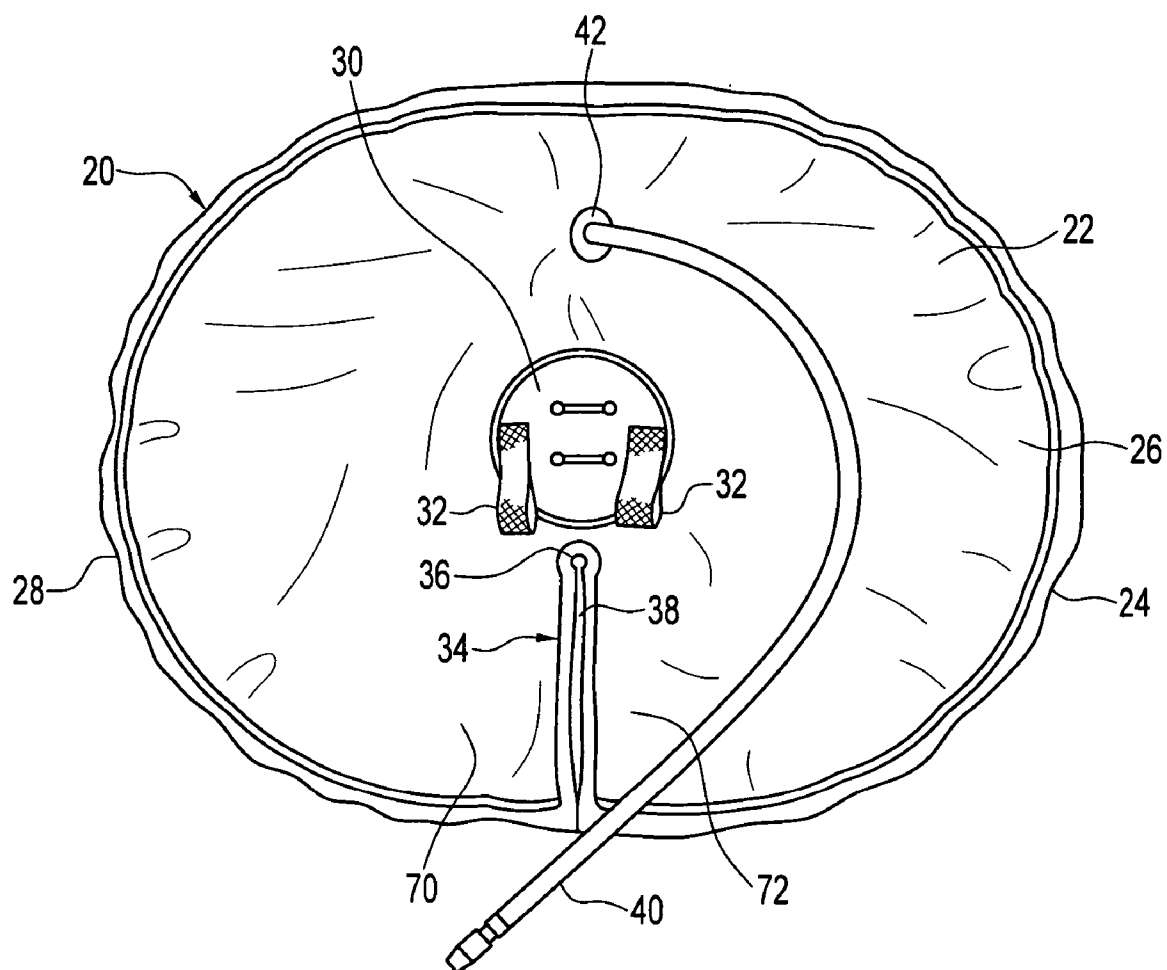


FIG. 2

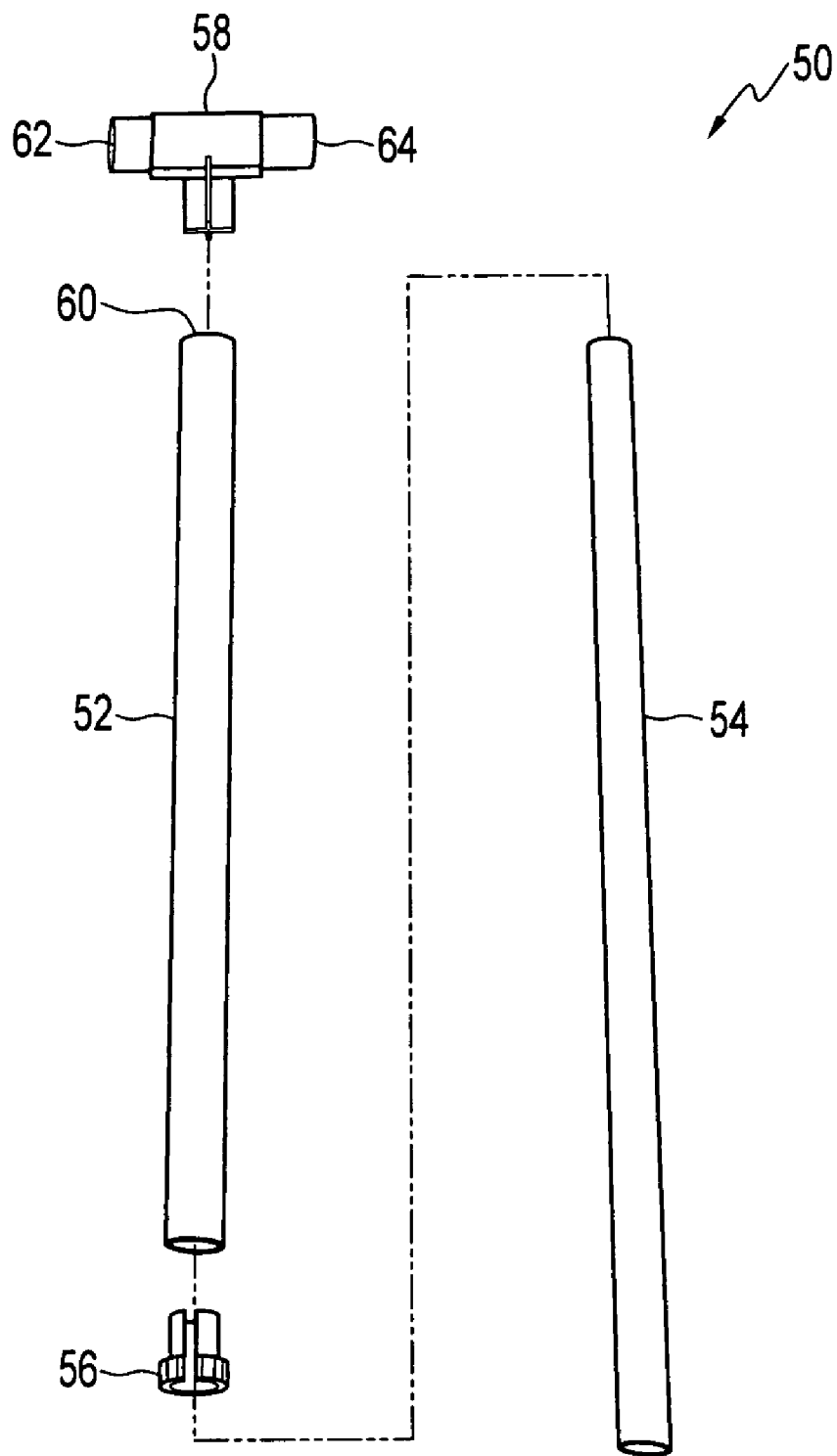


FIG. 3

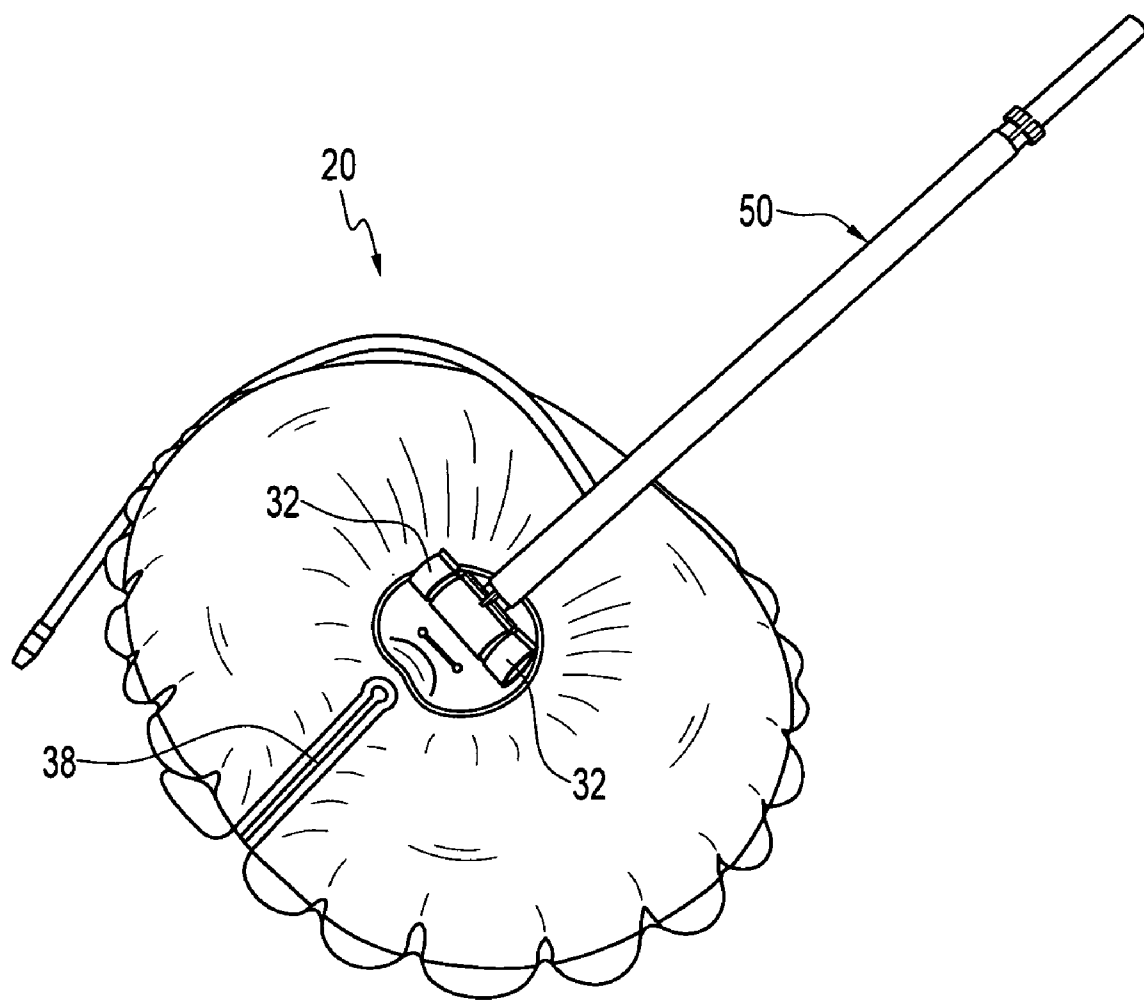


FIG. 4

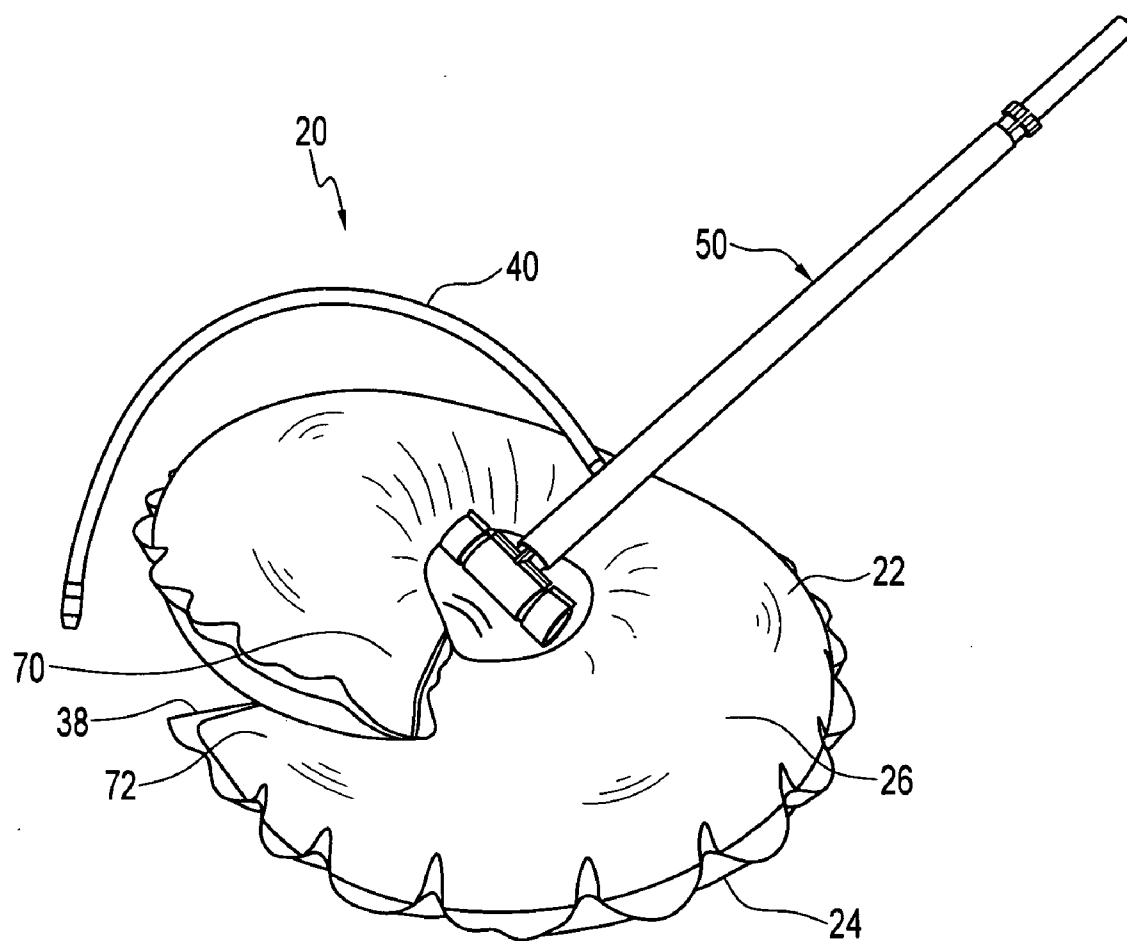


FIG. 5

FIREPLACE PLUG

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] This invention relates to a fireplace flue sealing device, commonly known as a fireplace plug, for stopping air leakage through fireplace flues, and, in particular, for stopping air leakage through zero clearance fireplaces.

[0003] 2. Description of the Related Art

[0004] Conventional fireplace plugs for fireplace flues, as in U.S. Pat. No. 4,649,896 by Formosa, have included an inflatable, air impermeable, bag-like member having a top and a bottom of a flexible material, sealed together about an outer periphery. The member has a plurality of selectively slitable sealed areas for permitting a damper handle to pass through one of the areas. The top and the bottom are sealed together about each of the areas. A closable conduit communicates with the member for admitting pressurized air into the member.

[0005] A disadvantage of previous fireplace plugs is their inability to accommodate a wide variety of fireplace sizes, and in particular, the limited range of adjustment necessary to accommodate various zero-clearance fireplaces. The combination of various zero-clearance fireplace sizes and the location of the damper handle have made previous fireplace plugs unuseable for many configurations.

[0006] Another disadvantage of previous fireplace plugs is the lack of convenience associated with these plugs during installation.

BRIEF SUMMARY OF THE INVENTION

[0007] According to one aspect of the invention there is provided, in combination, a fireplace having a flue and a damper handle, and a fireplace flue sealing device. The fireplace flue sealing device has an inflatable bag-like member with a top portion and a bottom portion of a flexible, air impermeable material. The top portion and the bottom portion are sealed together about an outer periphery of the bag-like member for retaining pressurized air therebetween. The bag-like member has a selectively slitable sealed area extending from the outer periphery towards the centrally located, sealed, non-inflatable area. The bag-like member is sized and shaped to sealingly engage the fireplace below the flue thereof when inflated. There is also a closable conduit communicating with the bag-like member for admitting pressurized air into the bag-like member.

[0008] According to a second aspect of the invention there is provided, in combination, a fireplace having a flue and a damper handle, and a fireplace flue sealing device. The fireplace flue sealing device has an inflatable bag-like member with a top portion and a bottom portion of a flexible, air impermeable material. The top portion and the bottom portion are sealed together about an outer periphery of the bag-like member for retaining pressurized air therebetween. The bag-like member has a centrally located, sealed, non-inflatable area which has a prop device engagement means for engaging the fireplace sealing device. There is also a closable conduit communicating with the bag-like member for admitting pressurized air into the bag-like member.

[0009] According to a third aspect of the invention there is provided, in combination, a fireplace having a flue and a damper handle, a telescoping prop device having a first end and a second end opposite thereof, and a fireplace flue sealing device. The fireplace flue sealing device has an inflatable bag-like member with a top portion and a bottom portion of a flexible, air impermeable material. The top portion and the bottom portion are sealed together about an outer periphery of the bag-like member for retaining pressurized air therebetween. The bag-like member has a centrally located, sealed, non-inflatable area having a prop device engagement means for engaging the telescoping prop device. There is also a closable conduit communicating with the bag-like member for admitting pressurized air into the bag-like member.

[0010] According to a third aspect of the present invention, a method is provided of sealing a fireplace having a damper with a damper handle from air-leakages comprising the steps of providing a fireplace flue sealing device which has an inflatable bag-like member with a top portion and a bottom portion of a flexible, air impermeable material, the top portion and the bottom portion are sealed together about an outer periphery of the member for retaining pressurized air therebetween, the bag-like member has a centrally located, sealed, non-inflatable area having a prop device engagement means for engaging a prop device that sustains the fireplace sealing device, the bag-like member has a selectively slitable sealed area extending from the outer periphery towards the centrally located, sealed, non-inflatable area, and a closable conduit communicating with the member for admitting pressurized air into the member, partially inflating the bag-like member using the conduit, slitting the selectively slitable sealed area according to the placement of the damper handle and thereby providing a slit and a first portion of the bag-like member and a second portion of the bag-like member on opposite sides of the slit, inserting the bag-like member using the telescoping prop device into the fireplace such that the damper handle extends through the slit, overlapping the first portion and the second portion of the bag like member to accommodate the size of the fireplace, and inflating the bag-like member using the conduit to ensure a proper seal with the fireplace.

[0011] An advantage of the present invention is the novel use of overlapping portions enabling the fireplace plug of the present invention to accommodate a wide variety of fireplace and flue sizes.

[0012] The telescoping prop device of the present invention advantageously allows consumers to conveniently install the fireplace plug in fireplaces of various dimensions, without having to over-extend, and possibly injure, themselves.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The present invention will be more readily understood from the following description of preferred embodiments thereof given, by way of example, with reference to the accompanying drawings, in which:

[0014] **FIG. 1** is a sectional view of a fireplace having a fireplace plug installed according to one embodiment of the present invention;

[0015] **FIG. 2** is a bottom plan view of the fireplace plug of **FIG. 1** shown in a deflated configuration;

[0016] FIG. 3 is an exploded view of a telescoping prop device of the fireplace plug of FIG. 1;

[0017] FIG. 4 is a perspective view of the fireplace plug of FIG. 1 shown in an inflated and inverted configuration; and

[0018] FIG. 5 is a perspective view of the fireplace plug of FIG. 1 shown in an alternative inflated and inverted configuration.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0019] Referring to FIG. 1, a sectional view is shown of a fireplace 10 having a flue 12. A damper 14 is located near the bottom of the flue 12 and is fitted with a damper handle 16. The invention provides a fireplace plug, indicated generally by reference numeral 20, for preventing drafts and air leakages through the flue 12 of the fireplace 10. The plug 20 is compressively in place at the top of the fireplace 10 adjacent the flue 12 and accommodates the damper handle 16 accordingly.

[0020] Referring now to FIG. 2, the fireplace plug 20 has an inflatable bag-like member 22 having a top portion 24 and a bottom portion 26. The top and bottom member are made of a flexible, air impermeable material such as vinyl or a polyurethane film.

[0021] The fireplace plug 20 has an outer periphery 28 where the top portion 24 and the bottom portion 26 are sealed together to retain pressurized air therebetween. It may be seen in FIGS. 2, 4 and 5 that the plug 20 is substantially elliptical in shape in this example, but can be different shapes in other examples.

[0022] The bag-like member 22 has a centrally located, non-inflatable, flat area 30, which is substantially circular in this example, but does not need to be in other examples. The flat area 30 is also of vinyl in this example and has a pair of loops 32 connected thereto.

[0023] There is also a selectively slitable, sealed, elongated, flat area indicated generally by reference numeral 34 in the bag-like member 22 extending from the periphery 28 towards the central flat area 30. The elongated flat area 34 has a narrow elongated portion 38 and a round portion 36 at an end of the narrow elongated portion near the central flat member 30.

[0024] There are portions 70 and 72 of the bag-like member 22 on opposite sides of the elongated flat area 34. The portions 70 and 72 can overlap each other when the narrow elongated portion 38 of the elongated flat area 34 is slit.

[0025] The elongated flat area 34 is sealed when the plug 20 is supplied to the consumer, but is slitable by the consumer along the narrow elongated portion 38. The narrow elongated portion 38 is slit substantially enough in order to accommodate the position of the damper handle 16 in the fireplace 10.

[0026] In some situations, the narrow elongated portion 38 is slit substantially enough in order to accommodate, not only the damper handle 16, but also to allow the overlapping of the portions 70 and 72. This advantageously allows the fireplace plug 20 to accommodate fireplaces of a wide variety of dimensions.

[0027] The bag-like member 22 has a closable conduit 40 for communicating pressurized air into the inflatable, bag-like member 22. The closable conduit 40 is connected to the bag-like member 32 at a junction 42.

[0028] Referring now to FIG. 3, there is shown an exploded view of a telescoping prop device generally indicated by reference numeral 50. The telescoping prop device 50 has a first tubular member 52, a second tubular member 54 and a retainer member 56. The retainer member 56 is tapered towards the first tubular member 52. In use the second tubular member 54 is telescopically received through retainer member 56 and within the first tubular member 52. To fix the telescopic position of the second tubular member 54 along the first tubular member 52, the retainer member 56 is slidably wedged into the first tubular member 52, thereby press-fitting the second tubular member 54 to the first tubular member 52.

[0029] There is also a t-shaped member 58 connected to one end 60 of the first member 52. The t-shaped member has a first end 62 and a second end 64 opposite thereto. The first and second ends 62 and 64 are received by respective loops 32 of the central flat area 30 as best seen in FIGS. 4 and 5.

[0030] Referring to FIG. 4, there is shown a perspective view of the fireplace plug 10 in an inflated configuration. The telescoping prop device 50 is connected to the loops 32 of the flat area 30. The portions 70 and 72 of the bag-like member 22 are not overlapping in this configuration. The elongated narrow portion 38 of the elongated flat area 34 is slit accordingly to accommodate the damper handle 16.

[0031] Referring to FIG. 5, there is shown a perspective view of the fireplace plug 10 in an alternative inflated configuration. In this configuration, the elongated narrow portion 38 of the elongated flat area 34 has been slit substantially enough to allow the portions 70 and 72 of the bag-like member 22 to overlap. The overlapping portions 70 and 72 allow the plug to accommodate fireplaces of different sizes.

[0032] To install the fireplace plug 20 the consumer partially inflates the bag-like member 22 in order to give it a resilient shape. The consumer can either use his or her own lung power by blowing into the conduit 40 to inflate the bag-like member 22, or can use a pump connected to the end of the conduit 40. The conduit is then closed to prevent the pressurized air from escaping.

[0033] The consumer then adjusts the telescoping prop device 50 to an appropriate length by unscrewing member 56, telescopically adjusting members 52 and 54 and then tightening member 56, and then uses the telescoping prop device 50 to insert the bag-like member 22 into and near the top of the fireplace 10 near the flue 12. The elongated narrow portion 38 of the elongated flat member 34 is slit so that the damper handle 16 extends therethrough in a relaxed manner.

[0034] The portions 70 and 72 on either side of the slit, elongated narrow portion 38 of the elongated flat member 34 may be overlapped in order to accommodate the dimensions of the fireplace. The bag-like member 22 can be further inflated to ensure a snug fit.

[0035] The telescoping prop device supports the bag-like member 22 by contacting the bottom of the fireplace 10, and

thereby providing additional sealing force for the bag-like member 22 around the damper 14.

[0036] As will be apparent to those skilled in the art, various modifications may be made within the scope of the appended claims.

What is claimed is:

1. In combination:
 - a fireplace having a flue and a damper handle; and
 - a fireplace flue sealing device having an inflatable bag-like member with a top portion and a bottom portion of a flexible, air impermeable material, the top portion and the bottom portion being sealed together about an outer periphery of the bag-like member for retaining pressurized air therebetween, the bag-like member having a selectively slitable sealed area extending from the outer periphery towards the centrally located, sealed, non-inflatable area, the bag-like member being sized and shaped to sealingly engage the fireplace below the flue thereof when inflated, and a closable conduit communicating with the bag-like member for admitting pressurized air into the bag-like member.
2. The combination as claimed in claim 1, wherein the bag-like member further includes a centrally located, sealed, non-inflatable area having a prop device engagement means for engaging a prop device that supports the fireplace sealing device
3. The combination as claimed in claim 1, wherein the bag-like member is substantially elliptical in shape.
4. The combination as claimed in claim 1, wherein the selectively slitable sealed area comprises a round end portion and a narrow elongated portion.
5. The combination as claimed in claim 1, wherein the conduit includes an elongated hose.
6. In combination:
 - a fireplace having a flue and a damper handle; and
 - a fireplace flue sealing device having an inflatable bag-like member with a top portion and a bottom portion of a flexible, air impermeable material, the top portion and the bottom portion being sealed together about an outer periphery of the bag-like member for retaining pressurized air therebetween, the bag-like member having a centrally located, sealed, non-inflatable area having a prop device engagement means for engaging a prop device that supports the fireplace sealing device, and a closable conduit communicating with the bag-like member for admitting pressurized air into the bag-like member.
7. The combination as claimed in claim 6, wherein the bag-like member further includes a selectively slitable sealed area extending from the outer periphery towards the centrally located, sealed, non-inflatable area, the bag-like member being sized and shaped to sealingly engage the fireplace below the flue thereof when inflated.
8. The combination as claimed in claim 6, wherein the prop device engagement means comprises a pair of loops that are affixed to the non-inflatable area.
10. The combination as claimed in claim 6, wherein the bag-like member is substantially elliptical in shape.

11. The combination as claimed in claim 7, wherein the conduit includes an elongated hose.

12. In combination:

- a fireplace having a flue and a damper handle;
- a telescoping prop device having a first end and a second end opposite thereof; and
- a fireplace flue sealing device having an inflatable bag-like member with a top portion and a bottom portion of a flexible, air impermeable material, the top portion and the bottom portion being sealed together about an outer periphery of the bag-like member for retaining pressurized air therebetween, the bag-like member having a centrally located, sealed, non-inflatable area having a prop device engagement means for engaging the telescoping prop device, and a closable conduit communicating with the bag-like member for admitting pressurized air into the bag-like member.

13. The combination as claimed in claim 12, wherein the bag-like member further includes a selectively slitable sealed area extending from the outer periphery towards the centrally located, sealed, non-inflatable area, the bag-like member being sized and shaped to sealingly engage the fireplace below the flue thereof when inflated.

14. A method of sealing a fireplace having a damper with a damper handle from air-leakages comprising the steps:

providing a fireplace flue sealing device having an inflatable bag-like member with a top portion and a bottom portion of a flexible, air impermeable material, the top portion and the bottom portion being sealed together about an outer periphery of the member for retaining pressurized air therebetween, the bag-like member having a centrally located, sealed, non-inflatable area having a prop device engagement means for engaging a prop device that sustains the fireplace sealing device, the bag-like member having a selectively slitable sealed area extending from the outer periphery towards the centrally located, sealed, non-inflatable area, and a closable conduit communicating with the bag-like member for admitting pressurized air into the bag-like member;

partially inflating the bag-like member using the conduit;

slitting the selectively slitable sealed area according to the placement of the damper handle and thereby providing a slit and a first portion of the bag-like member and a second portion of the bag-like member on opposite sides of the slit;

inserting the bag-like member using the telescoping prop device into the fireplace such that the damper handle extends through the slit;

overlapping the first portion and the second portion of the bag like member to accommodate the size of the fireplace; and

inflating the bag-like member using the conduit to ensure a proper seal with the fireplace.

* * * * *