



(11)

EP 2 927 586 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
07.10.2015 Bulletin 2015/41

(51) Int Cl.:
F23J 13/02 ^(2006.01) **E04G 21/16** ^(2006.01)

(21) Application number: **15161415.3**

(22) Date of filing: **27.03.2015**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
MA

(71) Applicant: **Wadge, Michael**
North Lincolnshire DN20 8PT (GB)

(72) Inventor: **Wadge, Michael**
North Lincolnshire DN20 8PT (GB)

(74) Representative: **Bates, Daniel Joseph**
Ogive Intellectual Property Ltd
34 Westgate
North Cave
Brough HU15 2NJ (GB)

(30) Priority: **31.03.2014 GB 201405737**

(54) **DEVICE AND METHOD RELATING TO THE INSTALLATION OF A LINER IN A CHIMNEY OR FLUE**

(57) The invention relates to a coring device 10 for a chimney or flue 42, comprising a body 16, 26 having a first end 14 and a second end 12, wherein the first end 14 is adapted for attachment to at least one chimney rod

38, the body 16, 26 having a circular cross section having a diameter substantially equal to or larger than an external diameter of a liner 64 to be installed in the chimney or flue 42.

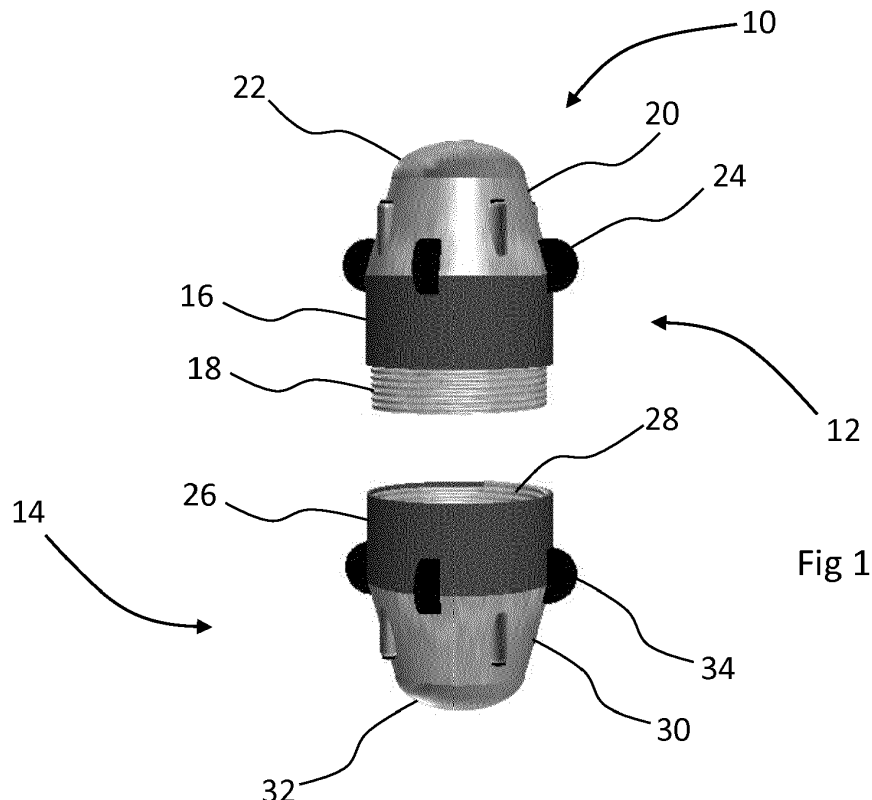


Fig 1

Description

Technical Field

[0001] The invention relates to a device and method relating to the installation of a liner in a chimney or flue.

Background

[0002] It is known to provide a coring ball to assist with clearing or unblocking a chimney or flue prior to the installation of a chimney or flue liner. The coring ball is a solid steel ball, which may have a diameter of 15cm and a mass of 14Kg. The coring ball has an eye to which a rope can be tied. The diameter of the coring ball is slightly larger than the liner to be installed in the chimney or flue. In use a person is located at a top of the chimney or flue and lowers the coring ball into it. The coring ball is relatively heavy and pushes debris down the chimney, and may be used to clear a channel to a fireplace of the chimney. When the coring ball has reached the fireplace it is untied from the rope and the liner is attached to the rope, for example by tying or taping it to the rope. The chimney or flue liner is then pulled up the chimney with the rope by the person located at the top of the chimney or flue. Since the liner has a slightly smaller diameter than the coring ball the user knows that if the coring ball can pass through the chimney or flue then the liner will also fit into it.

[0003] Several problems are associated with the known way of clearing or unblocking a chimney using a coring ball, and the manner in which a liner is installed in the chimney or flue. Due to the requirement for the coring ball to be inserted from the top of the chimney or flue the person using it is typically required to use a ladder or staging. Using a coring ball may be a physically demanding job because if a blocked or narrow part of the chimney or flue is encountered the coring ball may be repeatedly lifted and dropped to unblock or widen the chimney. Performing such a physically demanding task when working from the ladder or staging high above ground may be difficult.

[0004] A further problem may occur when a blocked or narrow region of the chimney or flue is encountered using the coring ball. Typically the user would approximately determine the position of the region by measuring the length of the rope that is within the chimney or flue and then try to locate the blocked or narrow region by measuring the same length on the outside of the chimney or flue. Bricks may then be removed from the chimney or flue in the area of the blocked or narrow region so that the inside of the chimney or flue can be widened or unblocked manually. Often the bricks are removed from the wrong area requiring additional work to be performed, which involves additional cost.

[0005] Another problem with the known coring ball may occur when the chimney or flue has an irregular shape that is not vertical. In some cases the chimney or flue may have portions which are horizontal or near horizon-

tal. In such situations the coring ball may not pass easily along the chimney or flue.

[0006] Another problem is that the liner may be damaged when pulling it up the chimney or flue using the rope. This may be due to the manner in which the rope is tied to the liner which may bend, split, or partially crush it, or due to the full weight of the liner being carried by the liner at the attachment point of the rope. Further problems may be encountered at bends in the chimney or flue because the rope can only be used in tension to pull the liner up the chimney or flue. Overall using a rope to pull the liner up the chimney or flue may be problematic.

[0007] It is broadly an object of the present invention to address one or more of the above mentioned disadvantages of the previously known ways of installing a liner in a chimney or flue.

Summary

[0008] What is required is a way of installing a liner in a chimney or flue which may reduce or minimise at least some of the above-mentioned problems.

[0009] According to a first aspect of the invention, there is provided a coring device for a chimney or flue, comprising a body having a first end and a second end, wherein the first end is adapted for attachment to at least one chimney rod, the body having a circular cross section having a diameter substantially equal to or larger than an external diameter of a liner to be installed in the chimney or flue.

[0010] Such a coring device provides the advantage that a user can push it along the chimney or flue using the chimney rods prior to the installation of the liner. Since the body has a diameter substantially equal to or larger than the external diameter of the liner to be installed the user knows that if the coring device fits up the chimney or flue then the liner will also fit. The coring device may avoid the requirement for using a ladder or staging when clearing a channel in the chimney or flue because it may be inserted upwards from a fireplace of the chimney or flue. In addition the chimney rods operate to guide the coring device up the chimney or flue and may help the coring device to pass more easily along horizontal or near horizontal parts of the chimney or flue. The coring device also provides the advantage that blocked or narrow regions of the chimney or flue can be more accurately located by measuring the length of chimney rods that have been inserted into the chimney or flue. Typically such measuring is straightforward because the chimney rods are usually provided in one metre lengths, which means that the user merely has to count the number of chimney rods and measure the same length on the outside of the chimney or flue. Such an arrangement may avoid the unnecessary removal of bricks from the wrong area thereby avoiding additional work and cost.

[0011] Preferably the first end and/or the second end comprises an impact resistant material for clearing a channel in the chimney or flue. This provides for the body

to be driven against the blocked or narrow region in the chimney or flue to clear the channel by repeatedly pushing on the chimney rods.

[0012] In one embodiment the body is for attachment to the liner to be installed in the chimney or flue. Such an arrangement provides for the liner to be pulled down or up the chimney or flue after the channel therein has been cleared, and when the coring device is at a top of the chimney or flue.

[0013] Preferably the body has at least one wheel or bearing on an exterior thereof for guiding the body along the chimney or flue. This may provide the advantage of allowing the device to travel in and along the chimney or flue more easily.

[0014] Preferably the at least one wheel is towards an end of the body. Preferably the body has a first set of at least four wheels that are spaced equally around an exterior of the body. Preferably the body has a second set of at least four wheels, the first set of four wheels being towards one end of the body, and the second set of four wheels being towards another end of the body. Providing the wheels at an end of the body and/or around the body may further assist with allowing the device to travel in and along the chimney or flue more easily.

[0015] Preferably the at least one wheel is rotatable about an axis which is tangential to the body. Such an axis of rotation allows the wheels to rotate along the direction of travel of the coring device when in the chimney or flue.

[0016] Preferably the body comprises two portions that are attachable to each other, one portion including the first end, and the other portion including the second end. Preferably the two portions have respective cooperating male and female threads for screwing the two portions together. Such portions may provide a convenient way to configure and construct the coring device.

[0017] Preferably the portion having the second end has the male thread on an exterior thereof. Preferably the male thread is rebated relative to a surface of the body. Such an arrangement provides for the body to have a continuous external surface which may help to avoid the coring device becoming snagged or caught as it travels in the chimney or flue.

[0018] Preferably the portion having the first end has the female thread on an interior thereof. In one arrangement the female thread is for cooperation with an exterior of the liner for the chimney or flue, the exterior of the liner having an external screw thread. In another arrangement the male thread is for cooperation with an interior of the liner for the chimney or flue, the interior of the liner having an internal screw thread.

[0019] Such arrangements allow the coring device to be attached to the liner in a secure manner whereby the female or male thread is screwed onto the external or internal screw thread of the liner. Such a secure connection of the coring device to the liner may help to avoid the liner being damaged when pulling it along the chimney or flue.

[0020] Preferably the diameter of the body is between 0.2cm to 1.5cm larger than the external diameter of the liner. Preferably the diameter of the body is substantially 0.5cm larger than the external diameter of the liner. This provides for the coring device to be slightly larger than the liner, which may further help to avoid the coring device becoming snagged or caught as it is pulled along the chimney or flue.

[0021] The body may be substantially hollow. Preferably the device has a mass of between 1Kg to 5Kg. Such arrangements have the advantage that the coring device may be large whilst also not being too heavy.

[0022] In one embodiment the device has a mass of substantially 1Kg. Such an arrangement may be a more basic version of the device without wheels. In another embodiment the device has a mass of substantially 2.5Kg. Such an arrangement may be a more sophisticated version of the device with wheels.

[0023] The body may be elongate. Preferably one or both of the first end and the second end is tapered. This provides the advantage that the coring device may be more suited to travelling along a duct such as a chimney or flue, and may be less likely to become snagged or caught.

[0024] Preferably one or both of the first end and the second end has a screw thread for attachment to at least one chimney rod, or a chimney brush thereto. Providing for the attachment of a chimney brush has the advantage of allowing the chimney or flue to be cleaned at the same time as clearing it or installing the liner.

[0025] The device may further include a video camera attached to one or both of the first end and the second end. This has the advantage of allowing the chimney or flue to be inspected at the same time as clearing it or installing the liner.

[0026] The device may further include an emitter device for emitting a location signal. Preferably a location device is included for receiving the location signal to determine a location of the device. Such an arrangement provides the advantage of being able to locate the device within the chimney or flue when a blocked or narrow region is encountered by the device.

[0027] According to a second aspect of the invention there is provided a method of installing a liner in a chimney or flue using a coring device comprising a body having a circular cross section with a diameter substantially equal to or larger than an external diameter of the liner to be installed, method including:

attaching the body to at least one chimney rod;
pushing the coring device along the chimney or flue using the at least one chimney rod to clear a channel in the chimney or flue;
attaching the liner to the body; and
pulling the liner along the chimney or flue using the at least one chimney rod.

[0028] Such a method provides the advantage that a

user can push the coring device along a chimney or flue using the chimney rods prior to pulling the liner along the chimney or flue and locating the liner in situ therein. Since the body has a diameter substantially equal to or larger than the external diameter of the liner to be installed the user knows that if the coring device fits up or down the chimney or flue then the liner will also fit. The method may avoid the requirement to use a ladder or staging when clearing a channel in the chimney or flue. In addition the chimney rods operate to guide the coring device up and down the chimney or flue and may help the coring device to pass more easily along horizontal or near horizontal parts of the chimney or flue.

[0029] Preferably the method further includes driving the body against a blocked or a narrow region in the chimney or flue prior to pulling the liner along the chimney or flue. Such a method may provide the advantage of helping to clear the channel in the chimney or flue.

[0030] Preferably the method further includes measuring a position of the blocked or the narrow region in the chimney or flue using the at least one chimney rod. The device may include an emitter device for emitting a location signal, the method further including measuring a position of the blocked or the narrow region in the chimney or flue using the location signal. Preferably the method further includes cutting a hole in the chimney or flue, and removing the blockage or widening the narrow region. The method provides the advantage that the blocked or narrow region of the chimney or flue can be more accurately located by measuring the length of chimney rods that have been inserted into the chimney or flue. Typically such measuring is straightforward because the chimney rods are usually provided in one metre lengths, which means that the user merely has to count the number of chimney rods and measure the same length on the outside of the chimney or flue. Alternatively the position of the device within the chimney or flue can be located using the location signal. Such an arrangement may avoid the unnecessary removal of bricks from the wrong area thereby avoiding additional work and cost.

[0031] The body may have at least one wheel or bearing on an exterior thereof, the method including guiding the body through the chimney or flue using the at least one wheel or bearing. This may provide the advantage of allowing the device to travel in and along the chimney or flue more easily.

[0032] The body may have a female thread, the method including attaching the liner to the body by screwing an external thread of the liner to the female thread. The body may have a male thread, the method including attaching the liner to the body by screwing an internal thread of the liner to the male thread. Such a method allows the coring device to be attached to the liner in a secure manner, which may help to avoid the liner being damaged when pulling it down the chimney or flue.

[0033] Preferably said pushing the coring device along the chimney or flue using the at least one chimney rod comprises pushing the coring device up the chimney or

flue. Preferably said pulling the liner along the chimney or flue using the at least one chimney rod comprises pulling the liner down the chimney or flue. Such a method may be a more advantageous way of clearing a channel in the chimney or flue and installing the liner therein.

[0034] Preferably the method further includes attaching a chimney brush to the body, and sweeping the chimney or flue. The attachment of the chimney brush provides the advantage of allowing the chimney or flue to be cleaned at the same time as clearing it or installing the liner.

[0035] Preferably the method further includes attaching a video camera to the body, and visually inspecting the chimney or flue using the video camera. This has the advantage of allowing the chimney or flue to be inspected at the same time as clearing it or installing the liner.

[0036] According to another aspect of the invention there is provided a coring device for clearing a channel in a chimney or flue, comprising a body having a first end and a second end, the first end being adapted for attachment to at least one chimney rod, wherein the body has a circular cross section having a diameter substantially equal to or larger than an external diameter of the liner to be installed in the chimney or flue.

[0037] According to another aspect of the invention there is provided a method of clearing a channel in a chimney or flue using a coring device comprising a body having a circular cross section with a diameter substantially equal to or larger than an external diameter of the liner to be installed, method including:

attaching the body to at least one chimney rod; and
pushing the coring device along the chimney or flue using the at least one chimney rod to clear a channel in the chimney or flue.

[0038] According to another aspect of the invention there is provided a coring device for installing a liner in a chimney or flue, comprising a body having a first end and a second end, the first end being adapted for attachment to at least one chimney rod, wherein the body has a circular cross section having a diameter substantially equal to or larger than an external diameter of the liner to be installed in the chimney or flue.

[0039] According to another aspect of the invention there is provided a method of installing a liner in a chimney or flue using a coring device comprising a body having a circular cross section with a diameter substantially equal to or larger than an external diameter of the liner to be installed, method including:

attaching the liner to the body;
attaching the body to at least one chimney rod; and
pulling the liner along the chimney or flue using the at least one chimney rod.

[0040] Any preferred or optional features of one aspect or characterisation of the invention may be a preferred

or optional feature of other aspects or characterisations of the invention.

Brief Description of the Drawings

[0041] Other features of the invention will be apparent from the following description of preferred embodiments shown by way of example only with reference to the accompanying drawings, in which;

Figure 1 shows a schematic side view of a device in an open condition according to an embodiment of the invention;

Figure 2 shows a perspective view of the device shown in Figure 1;

Figure 3 is a schematic side view of the device of Figures 1 and 2 in a closed condition and with a chimney rod attached thereto;

Figure 4 shows an end view of the device shown in Figures 1 - 3;

Figures 5 and 6 show a schematic side view of the device of Figure 1 - 4 when used to clear a chimney of a building;

Figure 7 is a schematic side view of the device of Figure 1 - 4 when used to install a flue liner in a building;

Figure 8 is a schematic side view of the device of Figures 1 - 4 in a closed condition and with a chimney brush attached thereto; and

Figure 9 shows steps of a method according to an embodiment of the invention.

Detailed Description

[0042] Figure 1 shows a schematic side view of a device in an open condition according to an embodiment of the invention, generally designated 10. The device 10 may alternatively be termed a coring device 10. The device 10 has two halves 12, 14 which are substantially hollow. Each half 12, 14 may alternatively be termed a portion or part. The first half 12 has a body 16 which is a cylinder or tube. One end of the body 16 is open and has a screw thread 18 around an exterior of a circumference of the body 16. The screw thread 18 is rebated relative to the surface of the body 16, and may be termed a male thread. The other end of the body 16 is closed by a tapered portion comprising a truncated cone portion 20, and a dome portion 22, whereby a wider end of the cone portion 20 is next to the body 16 and the dome portion 22 closes a narrower end of the cone portion 20. Together the cone portion 20 and a dome portion 22 comprise the tapered portion. An exterior of the first half 12 has four wheels 24, only three of which can be seen in Figure 1.

[0043] The second half 14 has a body 26 which is a cylinder or tube. One end of the body 26 is open and has a screw thread 28 around an interior of a circumference of the body 26. The internal screw thread may be termed

a female thread. The other end of the body 26 is closed by a tapered portion comprising a truncated cone portion 30, and a dome portion 32, whereby a wider end of the cone portion 30 is next to the body 26 and the dome portion 32 closes a narrower end of the cone portion 30. Together the cone portion 30 and a dome portion 32 comprise the tapered portion. An exterior of the second half 14 has four wheels 34, only three of which can be seen in Figure 1.

[0044] Figure 2 shows a perspective view of the device 10 shown in Figure 1. In Figure 2 like features to the arrangements of Figure 1 are shown with like reference numerals. In Figure 2 a centre region of the dome portion 32 of the second half 14 is shown to have an internal screw thread 36. A centre region of the dome portion 22 of the first half 12 also has an internal screw thread (not shown).

[0045] Figure 3 is a schematic side view of the device 10 of Figures 1 and 2 in a closed condition and with a chimney rod 38 attached thereto. In Figure 3 like features to the arrangements of Figures 1 and 2 are shown with like reference numerals. In Figure 3 the two halves 12, 14 are shown to be attached to each other where the screw thread 18 of the first half 12 and the screw thread 28 of the second half 14 are engaged with each other. The four wheels 24 and the four wheels 34 are shown to be towards an end of the body 16, 26 when the two halves 12, 14 are engaged with each other. The device 10 is substantially hollow when the two halves 12, 14 are engaged with each other. The body 16 of the first half 12 and the body 26 of the second half are shown to have a continuous external surface when the two halves 12, 14 are attached to each other, which is due to the rebated screw thread 18. The chimney rod 38 is a known item which is typically of plastic or bamboo cane, and having ends with brass screw fittings. One end of the chimney rod 38 is screwed into the internal screw thread 36 of the dome portion 32 of the second half 14. Consecutive chimney rods 38 can be attached as required as shown with reference to Figures 5 - 7. It will be appreciated that the chimney rod 38 is attached to the device 10 with a rigid connection.

[0046] In Figure 3 the device 10 is shown to be elongate, for example about 20cm long, when the two halves 12, 14 are attached to each other. The chimney rod 38 is attachable to the device so that it is along a longitudinal axis 39 of the device 10. Each internal screw thread 36 runs along the longitudinal axis of the body 16, 26. The diameter of the body 16, 26 is slightly larger than standard size liners, which may be for example, 12.5cm or 15cm. For example, the external diameter of the body 16, 26 is 13cm and 15.5cm respectively with the standard size liners having an external diameter of 12.5cm and 15cm. Typically the diameter of the body 16, 26 is about 0.2cm to 1.5cm larger than the diameter of the liner.

[0047] Figure 4 shows an end view of the device 10 shown in Figures 1 - 3. In Figure 4 like features to the arrangements of Figures 1 - 3 are shown with like refer-

ence numerals. In Figure 4 the four wheels 34 are shown to be equally spaced around the circumference of the body 26 of the second half 14. Similarly the four wheels 24 of the first half 12 are equally spaced around the circumference of the body 16. Each wheel 24, 34 is rotatable about a respective axis which is tangential to the body 16, 26. The wheels 24, 34 protrude from the external surface of the body 16, 26. This permits the device 10 to move on a surface whereby the wheels 24, 34 can support the device 10 without the body 16, 26 touching the surface. The wheels 24, 34 may be rollers, or partially encapsulated balls or bearings. In Figures 1 - 4 the device 10 can be seen to have a circular cross section along the longitudinal axis 39. The circular cross section is provided by the cylindrical bodies 16, 26, the truncated cone portions 20, 30, and/or domed portions 22, 32.

[0048] Figures 5 and 6 show a schematic side view of the device 10 of Figure 1 - 4 when used to clear a chimney or flue 42 of a building 44. In Figures 5 and 6 like features to the arrangements of Figures 1 - 4 are shown with like reference numerals. In Figure 5 the chimney 42 is shown to be between a fireplace 46 on a ground floor of the building 44 and a chimney stack 48 on a roof of the building 44. A user attaches the device 10 to the chimney rod 38 by screwing it thereto, and inserts the device 10 up the chimney 42 from the fireplace 46. Consecutive chimney rods 38 are then screwed together and the user pushed the device 10 up the chimney 42 from the fireplace 46. The chimney 42 is shown to have a narrow region 50 which prevents the device 10 from being pushed past it. It can be seen that the tapered end of the device 10 is located within the narrow region 50. When such a narrow region 50 or blockage is encountered the user has the option to either repeatedly drive the device 10 against the narrow region 50 using the chimney rods 38 to try to widen it, or to cut a hole 52 in brickwork of the chimney 42 and to manually widen it. In the example of Figure 5 the hole 52 is shown to be in a loft space 54 of the building 44, but it will be appreciated that the narrow region 50 may be located anywhere along the chimney 42. Since the user knows how many chimney rods 38 have been used to reach the narrow region 50 the hole 52 can be cut in an accurate location in the loft space 54. In the example of Figure 5 it can be seen that five chimney rods 38 have been used to reach the narrow region 50. In an alternative arrangement the device 10 may be fitted with an emitter device (not shown), such as an ultrasonic transducer or a Radio Frequency (RF) emitter, whereby the user can readily locate the position of the device 10 within the chimney 42 using a location device (not shown). The location device is a separate device able to pick up a signal from the emitter through the brickwork in the chimney 42 so that the narrow region 50 can be readily located.

[0049] The chimney 42 has two vertical ducts 56, 58 separated by a horizontal duct 60. After the narrow region 50 has been widened, as shown at 62 in Figure 6, the device 10 can pass into the horizontal part 60 by screwing

additional chimney rods 38 to the chain of chimney rods 38 and pushing upwards on them. It will be appreciated that the device 10 is able to move relatively easily through the horizontal duct 60 of the chimney 42 due to the wheels 24, 34 which may touch the sides of the horizontal duct 60. Furthermore, when the vertical duct 58 of the chimney 42 is encountered by the device 10 it is able to move relatively easily into it due to the tapered portion 20, 22 and the wheels 24, 34 which may touch the sides of the vertical duct 58.

[0050] When the device 10 is at the top of the chimney stack 48 the first half 12 is unscrewed from the second half 14 thereby leaving the second half 14 attached to the chimney rods 38. A liner 64 is then attached to the second half 14 by screwing it thereto. It will be appreciated that the liner 64 is a known flexible liner having an external screw thread. The internal screw thread 28 of the second half 14 matches the external screw thread of the liner 64 so that attaching the liner 64 to the second half 14 is simply achieved by screwing them together.

[0051] Figure 7 is a schematic side view of the device 10 of Figure 1 - 4 when used to install a flue liner 64 in the building 44. In Figure 7 like features to the arrangements of Figures 1 - 6 are shown with like reference numerals. In Figure 7 the liner 64 is shown being pulled down the chimney 42 whereby it is guided down it by the chimney rods 38 so that it is along the entire length of the chimney 42 to the fireplace 46. Since the chimney rods 38 are flexible the liner 64 can be guided past the bends in the chimney 42 more easily than using a rope. With the embodiment of the invention, when the horizontal duct 60 of the chimney 42 is encountered by the second half 14 it is able to move relatively easily into it due to the tapered portion 30, 32 and the wheels 34 which may touch the sides of the horizontal duct 60. The second half 14 has an external diameter that is slightly larger than the diameter of the liner 64, which means that the second half 14 is less likely to get caught within the chimney and that the liner 64 is less likely to be damaged.

[0052] Figure 8 is a schematic side view of the device 10 of Figures 1 - 4 in a closed condition and with a chimney brush 68 attached thereto. In Figure 8 like features to the arrangements of Figures 1 - 7 are shown with like reference numerals. It will be appreciated that the device 10 has two main purposes. One use is for clearing a channel in the chimney 42 between the fireplace 46 and the chimney stack 48. Another use of the device 10 is for pulling the liner 64 down the chimney 42. However, as shown in Figure 8 the device 10 may have another use to clean the chimney 42 whereby a chimney brush 68 is screwed into the internal screw thread of the first half 12. With such an arrangement the chimney brush 68 is at a leading end of the device 10 and the chimney rods 38 are screwed to a trailing end of the device 10. The chimney brush 68 is screwed to the device 10 about the longitudinal axis of the device 10. The chimney rod 38 is also screwed to the device 10 about the longitudinal axis of the device 10. Accordingly, the chimney brush 68, the

device 10 and the chimney rod 38 are in line with one another. With the chimney brush 68 attached to the device 10 the chimney 42 can be swept at the same time as clearing a channel in the chimney 42 or installing the liner 64. Due to the body 16, 26 the chimney brush 68 is stabilised within the chimney 42 as it passes through it which permits the chimney brush 68 to touch the sides of the chimney 42 and clean it more effectively.

[0053] The device 10 may be fitted with one or more cameras (not shown), i.e. video cameras, to inspect the inside of the chimney 42. The cameras may be as an alternative or as well as the chimney brush 68. The cameras may be wireless enabled devices which are battery operated. As such the camera may transmit an image of the inside of the chimney 42 to a hand held device. It will be understood that the brush 68 or the camera may be screwed into the internal screw thread 36 of the first or second half 12, 14 as required.

[0054] Figure 9 shows steps of a method according to an embodiment of the invention, generally designated 70. It will be appreciated that the steps may be performed in a different order, and may not necessarily be performed in the order shown in Figure 9. The method 70 is a method of installing a liner 64 in a chimney 42 or flue using a coring device 10 comprising a body 16, 26 having a circular cross section with a diameter substantially equal to or larger than an external diameter of the liner 64 to be installed. The method includes attaching the body 16, 26 to at least one chimney rod 38, as shown at 72. The method includes pushing the coring device 10 along the chimney 42 or flue using the at least one chimney rod 38 to clear a channel in the chimney 42 or flue, as shown at 74. The method includes attaching the liner 64 to the body 16, 26 as shown at 76. The method includes pulling the liner 64 along the chimney 64 or flue using the at least one chimney rod 64 as shown at 78.

[0055] The method further includes driving the body 16, 26 against a blocked or a narrow region 50 in the chimney 42 or flue prior to pulling the liner along the chimney 42 or flue, as shown at 80. The method further includes measuring a position of the blocked or the narrow region 50 in the chimney 42 or flue using the at least one chimney rod 38, as shown at 82. The device 10 may include an emitter device (not shown) for emitting a location signal, the method further including measuring a position of the blocked or the narrow region 50 in the chimney 42 or flue using the location signal, as shown at 82. The method further includes cutting a hole 52 in the chimney 42 or flue, and removing the blockage or widening the narrow region 50, as shown at 84.

[0056] The body 16, 26 has at least one wheel 24, 34 or bearing on an exterior thereof, the method including guiding the body 16, 26 through the chimney 42 or flue using the at least one wheel 24, 34 or bearing, as shown at 86. The body 16, 26 has a female thread or a male thread, the method including attaching the liner 64 to the body 16, 26 by screwing an exterior or interior of the liner to the female or male thread, as shown at 88. The method

includes said pushing the coring device along the chimney or flue using the at least one chimney rod comprises pushing the coring device up the chimney or flue, as shown at 74. The method includes said pulling the liner along the chimney or flue using the at least one chimney rod comprises pulling the liner down the chimney or flue, as shown at 78.

[0057] The method further includes attaching a chimney brush to the body, and sweeping the chimney or flue, as shown at 90. The method further includes attaching a video camera to the body, and visually inspecting the chimney or flue using the video camera, as shown at 90.

[0058] It will be appreciated that the device 10 may be repeatedly driven against a narrow region 50 of the chimney 42 to widen it. Accordingly, the two halves 12, 14 are required to be of an impact resistant material such as steel, or an impact resistant plastic. The two halves 12, 14 are required to be rigid, i.e. sufficiently rigid. The device 10 is also required to be sufficiently heavy so that it has a certain momentum when driven against the narrow region. For example, the device 10 may have a mass of between 1Kg to 5Kg. Whereas the ends of the device 10 are described as being tapered it will be appreciated that this may be a chamfer or a reduction of the diameter of the body 16, 26, for example by a part cone or a part sphere. Whereas the body 16, 26 is shown in the accompanying Figures to have a continuous exterior, i.e. a complete exterior, the body 16, 26 may alternatively be a cage, for example being of wire such as a heavy gauge wire.

[0059] Whereas the above embodiments describe a screw thread 28, which is a female thread, around an interior of a circumference of the body 26, which cooperates with an external thread of the liner 64, it will be appreciated that alternatively (or as well as) the interior of the liner may have an internal screw thread for cooperation with the screw thread 18 around an exterior of a circumference of the body 16, which is a male thread.

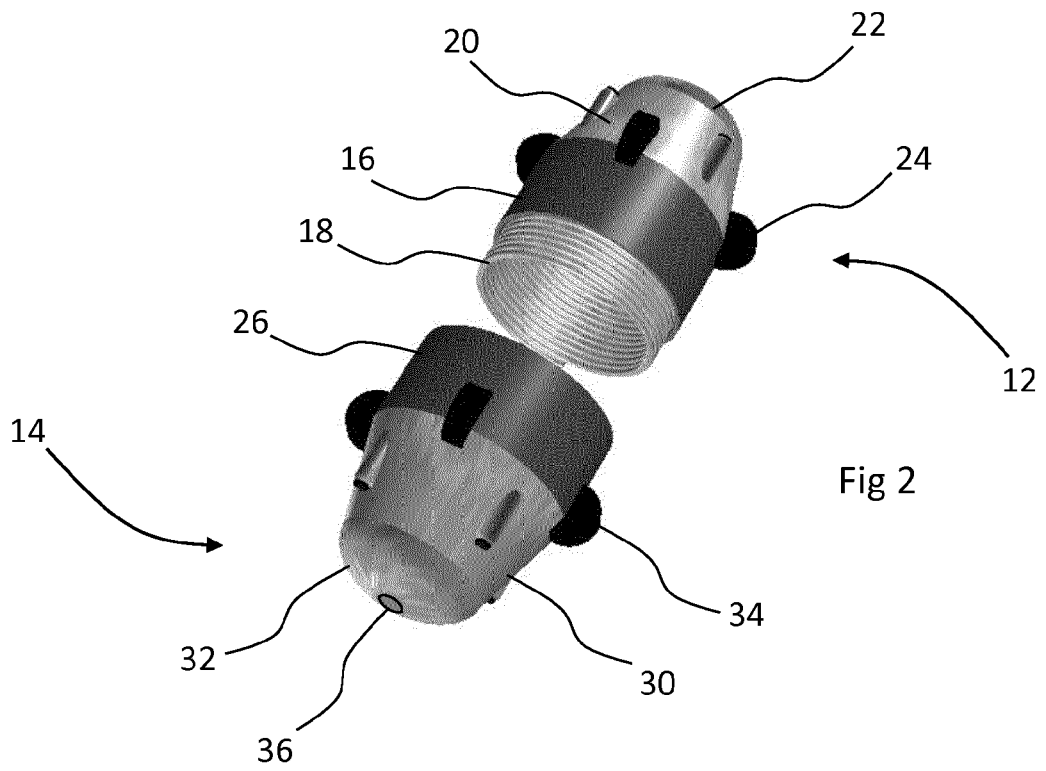
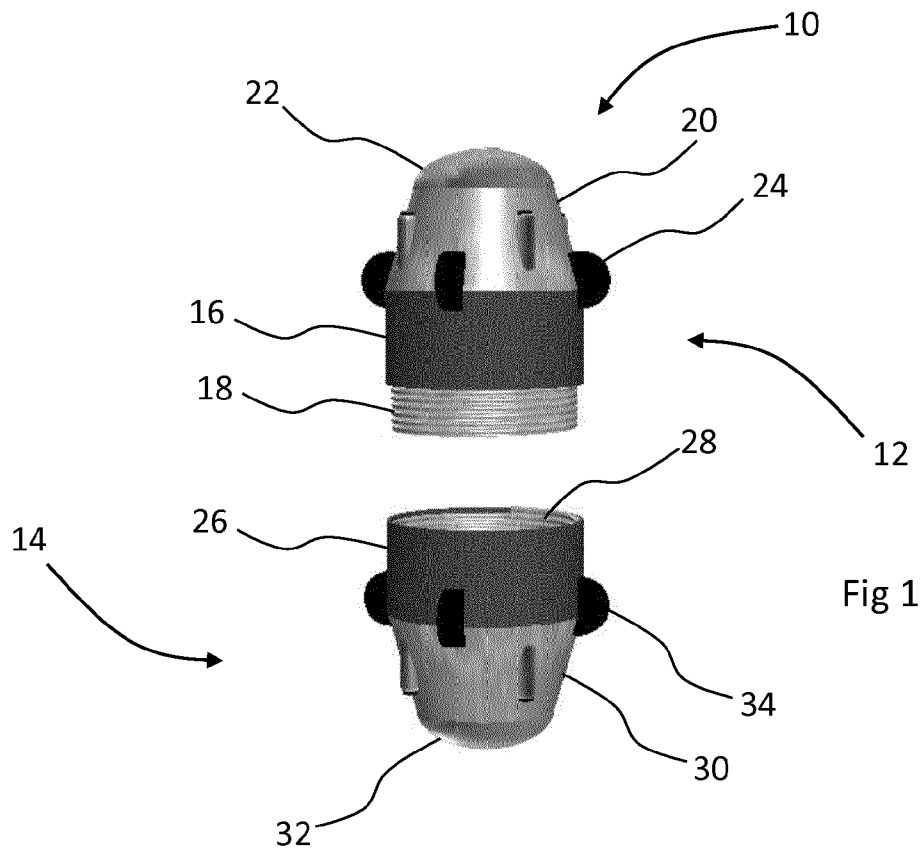
[0060] It will also be appreciated that whereas the device 10 is shown to be inserted up into the chimney or flue 42 from the fireplace 46 to clear a channel, it may alternatively be pushed down the chimney or flue 42 from the chimney stack 48 to clear a channel. When this is performed the liner 64 is pulled up the chimney or flue 42 from the fireplace 46.

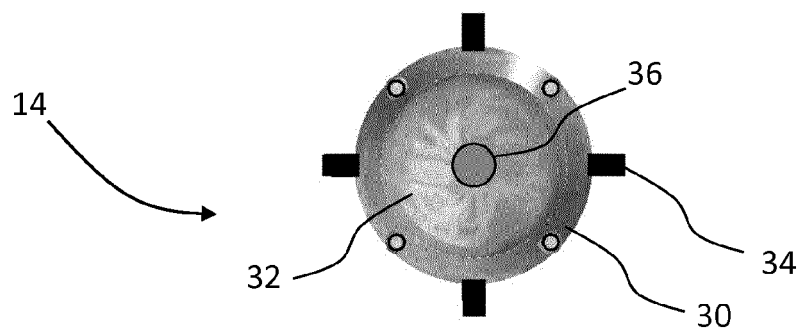
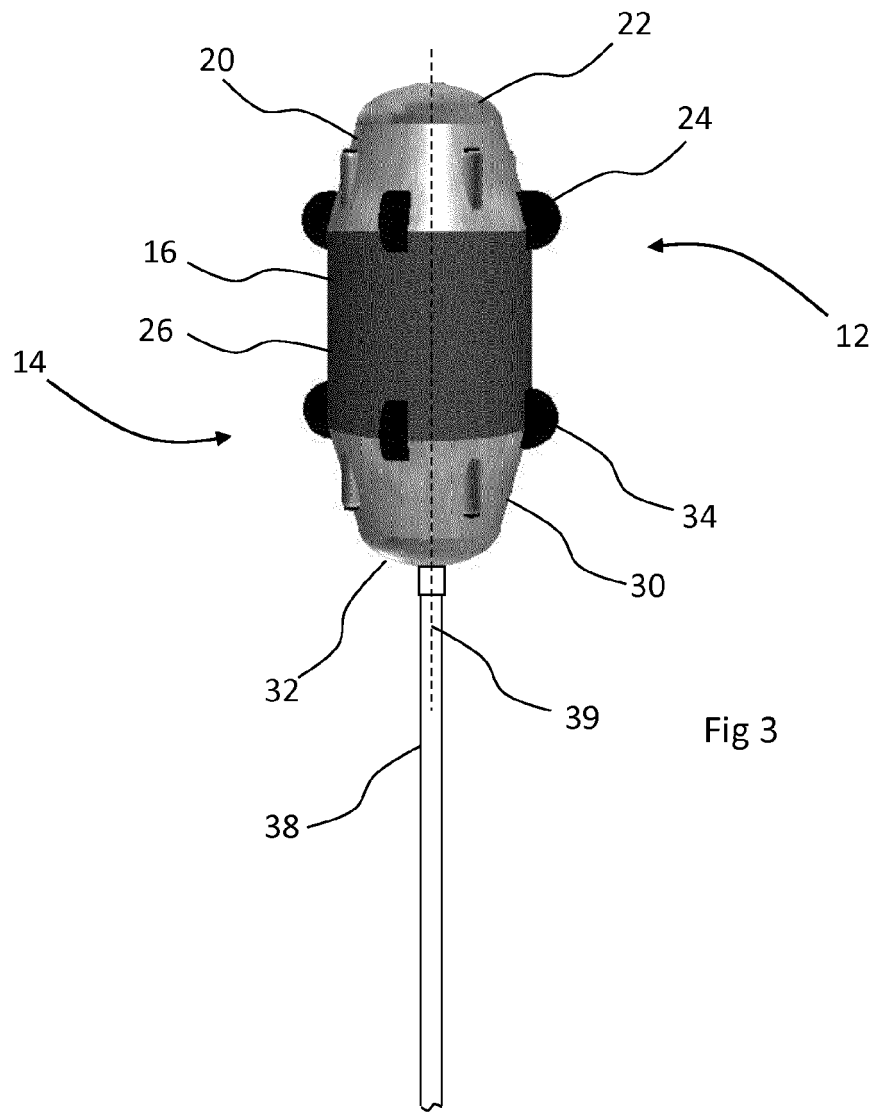
[0061] Whereas the device 10 is shown to have wheels 24, 34, alternatively the device 10 may not have wheels. With such an arrangement the device 10 may still pass through the chimney 42 relatively well. When the device 10 is provided without wheels it may have a mass of about 1Kg. When the device is provided with wheels it may have a mass of about 2.5Kg.

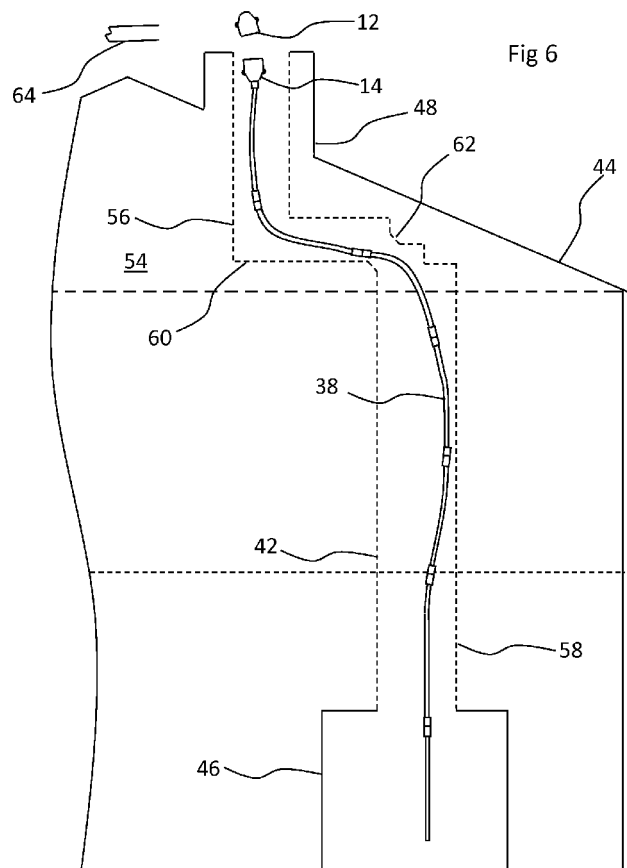
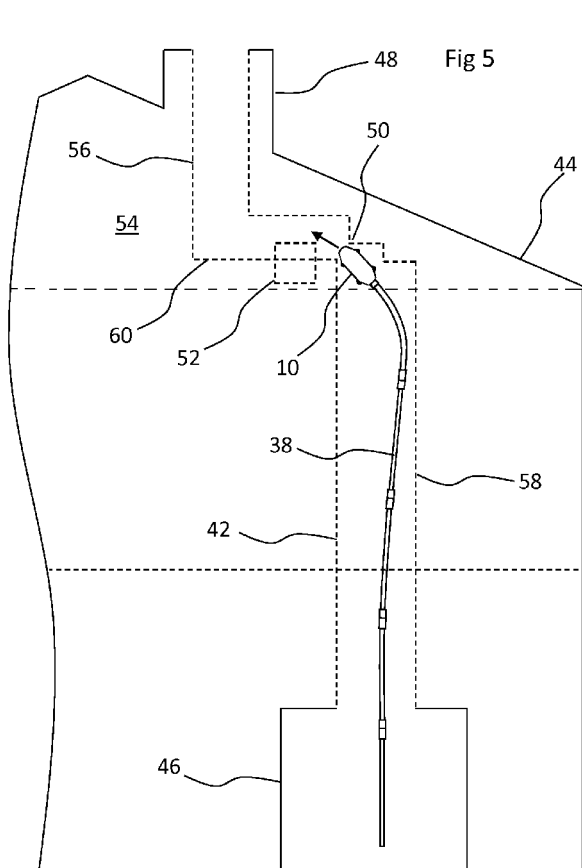
Claims

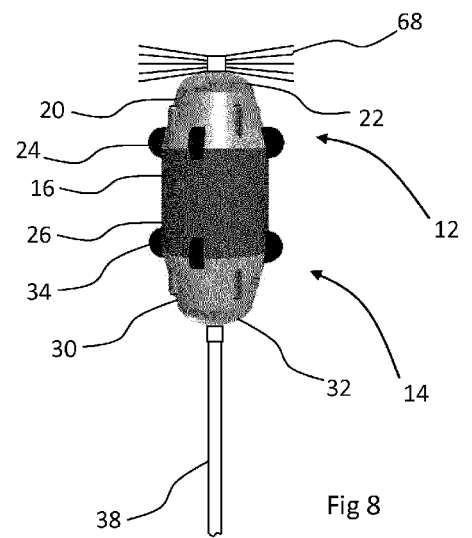
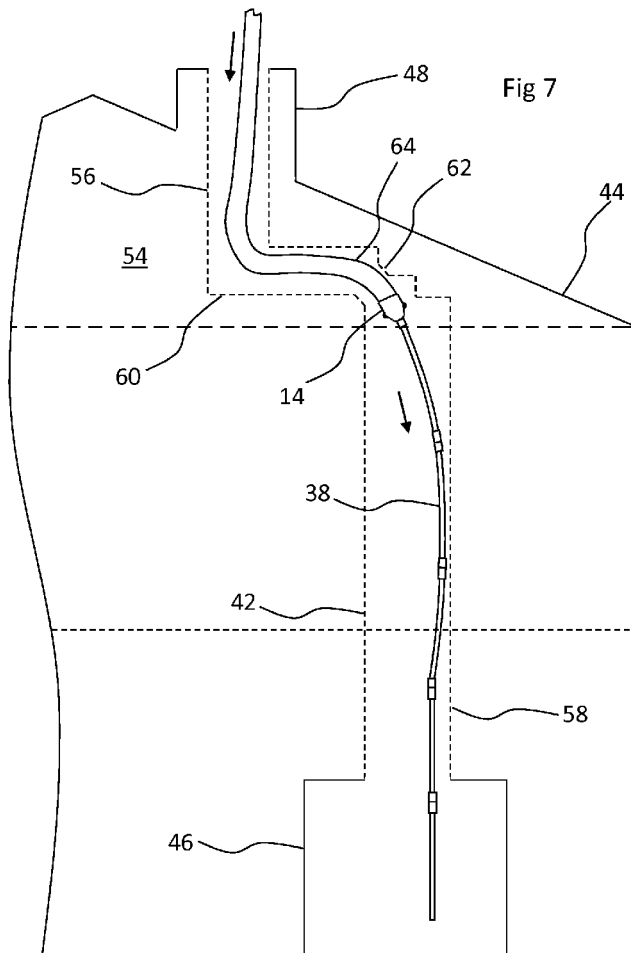
1. A coring device for a chimney or flue, comprising a body having a first end and a second end, wherein

- the first end is adapted for attachment to at least one chimney rod, the body having a circular cross section having a diameter substantially equal to or larger than an external diameter of a liner to be installed in the chimney or flue.
2. A device according to claim 1, wherein the first end and/or the second end comprises an impact resistant material for clearing a channel in the chimney or flue.
 3. A device according to claim 1 or 2, wherein the body is for attachment to the liner to be installed in the chimney or flue.
 4. A device according to any preceding claim, wherein the body has at least one wheel or bearing on an exterior thereof for guiding the body along the chimney or flue.
 5. A device according to any preceding claim, wherein the body comprises two portions that are attachable to each other, one portion including the first end, and the other portion including the second end.
 6. A device according to any preceding claim, wherein the body is substantially hollow.
 7. A device according to any preceding claim, wherein the body is elongate.
 8. A device according to any preceding claim, wherein the device has a mass of between 1Kg to 5Kg.
 9. A device according to any preceding claim, wherein one or both of the first end and the second end is tapered.
 10. A method of installing a liner in a chimney or flue using a coring device comprising a body having a circular cross section with a diameter substantially equal to or larger than an external diameter of the liner to be installed, method including:
 - attaching the body to at least one chimney rod; pushing the coring device along the chimney or flue using the at least one chimney rod to clear a channel in the chimney or flue; attaching the liner to the body; and pulling the liner along the chimney or flue using the at least one chimney rod.
 11. A method according to claim 10, and further including driving the body against a blocked or a narrow region in the chimney or flue prior to pulling the liner along the chimney or flue.
 12. A method according to claim 11, and further including measuring a position of the blocked or the narrow region in the chimney or flue using the at least one chimney rod.
 13. A method according to any of claims 10 - 12, the body having at least one wheel or bearing on an exterior thereof, the method including guiding the body through the chimney or flue using the at least one wheel or bearing.
 14. A method according to any of claims 10 - 13, wherein said pushing the coring device along the chimney or flue using the at least one chimney rod comprises pushing the coring device up the chimney or flue.
 15. A method according to any of claims 10 - 14, wherein said pulling the liner along the chimney or flue using the at least one chimney rod comprises pulling the liner down the chimney or flue.









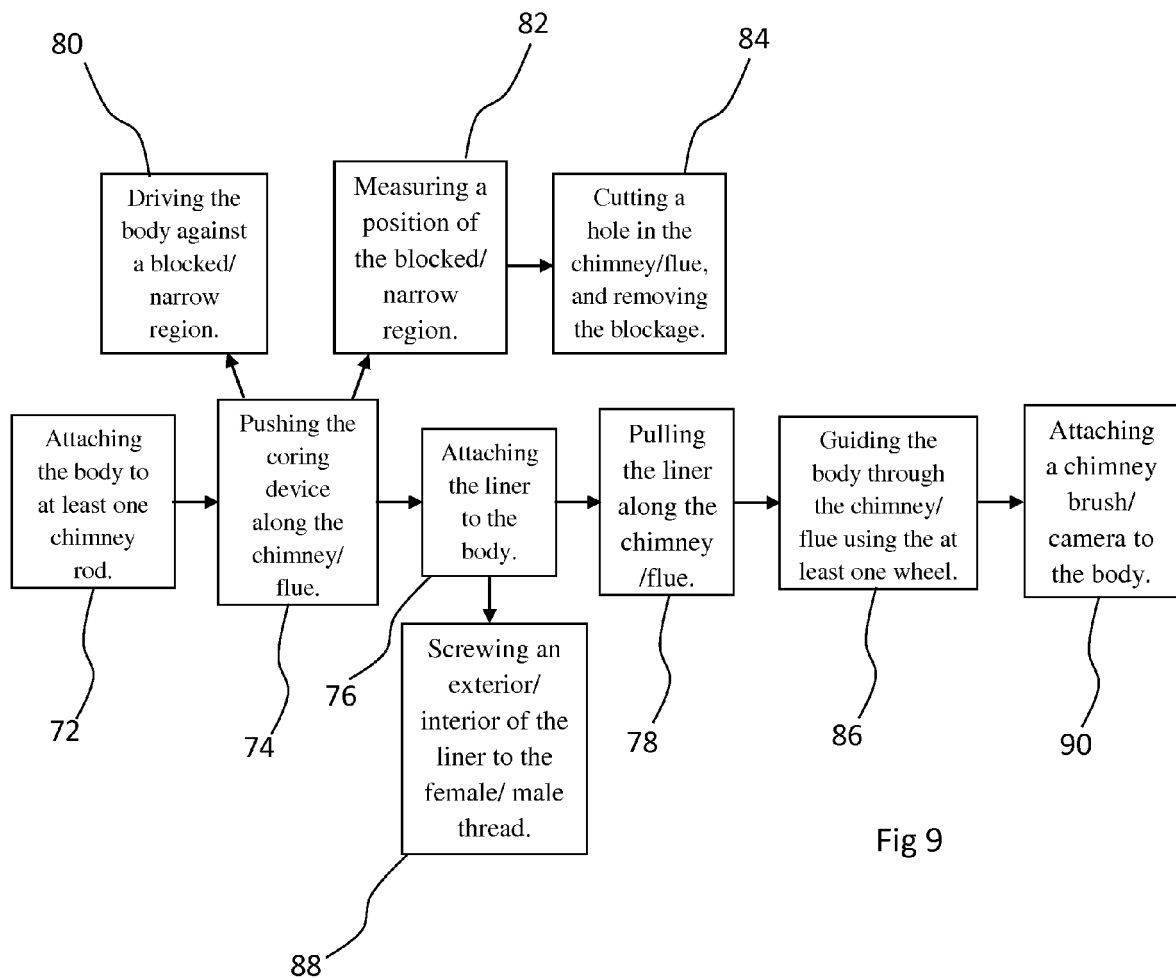


Fig 9



EUROPEAN SEARCH REPORT

Application Number
EP 15 16 1415

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 2 365 249 A1 (WUNSCH HORST [CH]) 14 September 2011 (2011-09-14)	1-3,5-9	INV. F23J13/02 E04G21/16
A	* paragraph [0022] - paragraph [0045]; figures 1-7 *	4,10	
X	DE 103 24 899 A1 (AGGEN HELMUT [DE]; BUSCHHORN KARL AUGUST [DE]) 27 January 2005 (2005-01-27)	1,3,5-8	
A	* paragraph [0028] - paragraph [0036]; figures 1-3 *	4,10	
X	DE 34 19 740 A1 (AHRENS ENERGIETECHNIK GMBH [DE]) 28 November 1985 (1985-11-28)	1-3,5, 7-9	F23J E04G
A	* page 4, line 31 - page 7, line 19; figure *	4,10	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 21 July 2015	
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 15 16 1415

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

21-07-2015

10

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 2365249	A1	14-09-2011	NONE		

DE 10324899	A1	27-01-2005	NONE		

DE 3419740	A1	28-11-1985	AT	386398 B	10-08-1988
			CH	670277 A5	31-05-1989
			DE	3419740 A1	28-11-1985

20

25

30

35

40

45

50

55

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82