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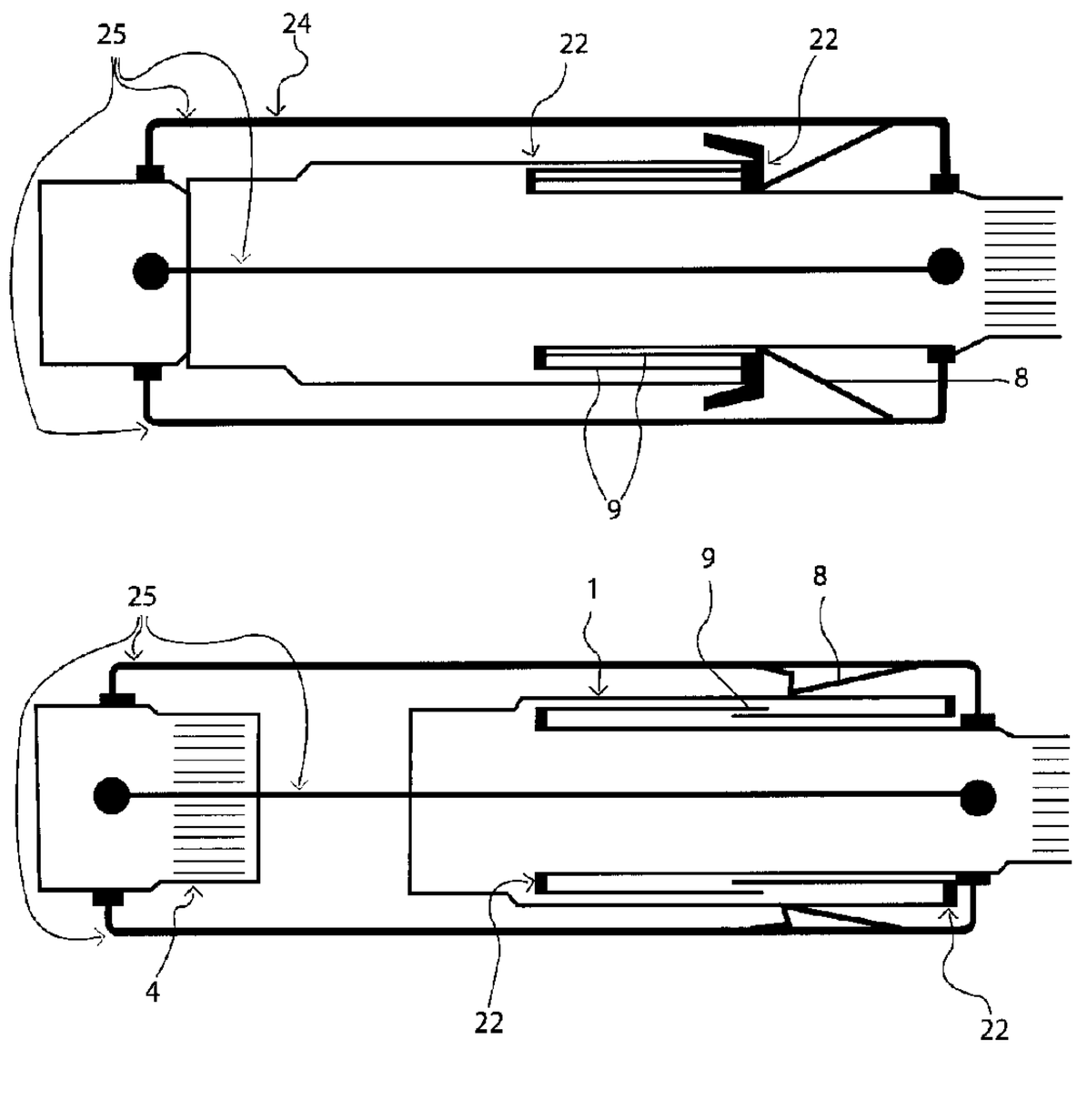


(57) Abrégé/Abstract:
The "Chimney Cap Link", a device that when used will conserve heat in a dwelling. Installed between the stove pipe and the wall connection, it serves to enable one to, in only seconds, install or remove an insulated double wall cap. To be done regularly, without any leakage when wood stove or similar appliance is in use, and done cleanly with ease. Having a sliding lock seal, the prototype is framed using one half (1/2) inch steel rod and nuts. Rivets and sealant is used to join the one third (1/3) length parallel walls to the two primary pipes. Welding may be a better option or one piece pipe parts. The sliding seal reveals an open gap in the pipe, in order to insert or remove the insulated cap. Therefore, when used, the cap stops heat from escaping out the hole in the wall and prevents cold air from entering the dwelling. Also during the hot summer months, when air conditioners are in use, the insulated cap performs the opposite function, it caps the heat out and prevents the inner cool air from escaping out the hole. When regularly used the "Chimney Cap Link" performs its duty 24 hours a day, and saves on energy 24 hours per day.

ABSTRACT OF THE DISCLOSURE

The **"Chimney Cap Link",** a device that when used will conserve heat in a dwelling. Installed between the stove pipe and the wall connection, it serves to enable one to, in only seconds, install or remove an insulated double wall cap. To be done regularly, without any leakage when wood stove or similar appliance is in use, and done cleanly with ease.

Having a sliding lock seal, the prototype is framed using one half (1/2) inch steel rod and nuts. Rivets and sealant is used to join the one third (1/3) length parallel walls to the two primary pipes. Welding may be a better option or one piece pipe parts. The sliding seal reveals an open gap in the pipe, in order to insert or remove the insulated cap.

Therefore, when used, the cap stops heat from escaping out the hole in the wall and prevents cold air from entering the dwelling. Also during the hot summer months, when air conditioners are in use, the insulated cap performs the opposite function, it caps the heat out and prevents the inner cool air from escaping out the hole.

When regularly used the **"Chimney Cap Link"** performs its duty 24 hours a day, and saves on energy 24 hours per day.

CHIMNEY CAP LINK

FIELD OF THE INVENTION

[0001] The present invention generally relates to a wood or combustion stove or furnace installation, and more particularly, to a frame mounted slidable pipe link assembly and its utility in providing quick access to an open flue, and by means by which the flue may be rapidly coupled to a stove or other combustion device.

BACKGROUND OF THE INVENTION

[0002] Combustion heating units, such as furnaces or stoves, whether utilizing wood or other forms of fuel to generate heat, all require a smoke evacuation conduit, a flue pipe leading to a chimney, is common place.

It is such that these are popular devices for heating in residential and commercial buildings.

[0003] When such a unit is not in use, however, the opening within the unit, connected to a flue leading outside forms a passage, through which heated air or cooled air can escape from the interior of the building.

A frame mounted slidable pipe link assembly, providing instant access to a flue, when it is not in use, said assembly when installed preferably at the exterior wall hole, at the bottom of the chimney, inside the building, would provide simple access to open a flue line at the wall in order to install a cap directly over and into the wall hole opening, at the wall or to clean out the inner chimney bottom or to simply inspect the inside of the flue at this important location in the flue. In there lies the usefulness and utility of a chimney cap link. Or a frame mounted slidable pipe link assembly. The multi-purpose utility of the said device is evident.

[0004] Few innovations for quick and easy access to a flue have been previously put forth in prior art. For example, EP Pat. No 2149751A2 to Thomas, Pierre, Druette and Coirier discloses a "device of preparing for a conduit ensuring connection between a heating appliance (standard stove or cooker) and a flue of smoke leading to a chimney, it still relates to the process of setting opens some of such a device of preparing." Note the single purpose and utility of this device is to introduce to an already standard flue pipe an additional outer sliding shield cover, encasing the standard flue pipe concentrically sliding one into the other and introducing a collar spacer ring at one extremity of both pipe lengths so as to allow for, when one pipe length is slid into the other, pipe lengths are interlocked and slid up and down. This newly attached sliding shield cover allows for an air chamber space within the two interlocked pipe lengths and two openings or vents are present and situated at one extremity of each sliding pipe. One for the top end and one for the bottom end. When installed the sliding pipe lengths serve to adjust the vent hole openings permitting increased or decreased circulation of colder air entering the air chamber, between the parallel walls of the main flue and the additional two cylindrical interlocking sliding cover parts, then air rising up to the top opening vent, venting out the hot air accumulating in the upper chamber area. Thus creating an air insulated barrier of a double wall nature, with the outer cover surface cool enough to touch and thus creating a safer characteristic of said device permitting by law the flue pipe device to be located closer to interior walls of the building. However, it does not open or provide any access inside the flue itself, which presents again another major difference. In addition there is no seal as compared to the frame mounted slidable pipe link assembly. Another difference is stated, the device is made to be installed in a vertical position. Note the framed slidable pipe link assembly is constructed to be installed at all angles or slope, either vertical or horizontal or yet again at a slope of any angle. This fact constitutes a major

difference with its enhanced versatility and wider or broader applications such as a wall connection, as compared to the previously stated EU patented prior art.

The two spacer rings in the EU patented device are similar to the two spacer rings used in the frame mounted slidable pipe link assembly device. However there utility, purpose and function are different , in such that, yes the EU spacers serve as an abutment in between the sliding cylinders in order for them to snugly fit within one another and slide easily and also they serve to create an open air space between said parallel walls. Note this is where their resemblance ends. The spacer rings within the frame mounted slidable pipe link assembly actually do more. They are present in order to provide a concentric frame platform around the pipe ends in which allows for the attachment of the shorter interior seal walls within the sliding seal. Also they constitute the parts or location within the seal which stops any leakage eminating from within a flue pipe by being the abutment part inner surface within the seal, where and when the sleave is pulled and slid tight, the shorter inner walls abut squarely against the spacers tightly and block any leakage of the conduit or flue. Thus constituting a two inner point of contact sliding seal, which can be applied to many conduits of smoke and also liquids, such as water, pulp, steam, oil and more.

[0005] Therefore, a heretofore unaddressed need still exists in the art to address the aforementioned deficiencies and inadequacies.

SUMMARY OF THE INVENTION

[0006] In one aspect the present invention relates to a stove or combustion unit flue coupling device, permitting an opening and access inside the flue. In one embodiment, the stove smoke flues new framed slidable pipe link assembly, includes two, **2** pipes of a set length and same diameter, three frame rods of solid heat resistance material, bent to a 90° angle, in from each end. Attached to the two said pipes, by welding or other means, parallel to the pipe exterior walls

which are lined up, end to end, and linking the two flue pipe lengths, while also leaving a gap or empty open space in between the two pipe ends. The frame rods are to be attached in a triangular fashion. Another pipe for the sliding sleave seal, of a longer length but larger diameter is also present, serving as the body of the moving part, the sliding sleave seal being of greater diameter than the two initial pipe lengths, it can be slid left and right over the pipe of the link and covering or revealing the open gap in the stove pipe line. At the output end of the sleave, a reducing concentric pipe piece is attached to reduce the diameter of the head of the sleave down in order to fit over and connect to the pipe end, at the output end of the link assembly. The open output pipe length that is within the link assembly.

[0007] In one embodiment the frame mounted slidable pipe link assembly, entails a seal feature which serves to seal the slit that exist inside, between the sliding sleave wall of one diameter and the link pipe wall of standard diameter. This interior slit or crack, that is present, is the open slit of air in between the sliding sleave wall and the pipe wall in which the sleave slides over when slid one within the other.

By adding and attaching by way of welding or rivets, one new shorter semi-length of flue pipe of a different smaller diameter, being shorter in the the length of the sliding sleave, by way of inserting it within the sleave at its intake end, and sliding it in flush, then inserting a metal spacer ring in between the pipe walls at the intake end, then affixing them together to create the bottom double wall section of the sliding seal sleave. The said spacer is providing a gap in between the pipe walls, this gap enabling shorter pipe walls to slide into one another and thus constituting one half portion of the sliding pipe seal.

The other half of the seal is present at the output end of the number 2 pipe part, in the link. Again another shorter pipe, of this time, a larger diameter than the standard diameter number 2 pipe, but

again being shorter than the length of the sleave. This new shorter length pipe is slid down and over the number 2 pipe in the link, down again. Flush with the pipe end, then another metal spacer is inserted within the now parallel pipe walls, encircling the pipe wall within and creating another small gap in between and allowing the other shorter wall to also slide in and out.

By sliding the head of the sleave up over the number 2 pipe, then pulled together tightly, the new shorter walls that were added, interlock then abut squarely with the spacers creating a four wall seal chamber with two points of contact barriers contained within.

The inner slit present in the seal wall, is protected against the leakage of creosote and such by a protective inner cylindrical type shield, which protrudes down within and overlapping and bypassing the slit.

[0008] In one embodiment, the chimney cap link device further includes, an insulated flue cap, to be left hanging, when not in used, on the units frame by way of a hooked metal handle that is incorporated onto the cap which also embodies an inner concentric metal wall cavity containing two and one half (**2 ½**) inches of insulation, capped with a concentric cover plate. However although, spoken of here the insulated double wall cap is not and does not form part of this claim.

[0009] In one embodiment, the frame mounted slidable pipe link assembly further includes two metal flexible leaf snap in locks. Measuring four inches by one inch in width with one sixteenth of an inch in thickness. Attached to the lower area of the frame, they rise up in a slope leading under the protruding bottom of the sliding sleave when it is locked in place. Bent outward at the top ends one inch, then upward one inch, in which providing small handles to grip, and pull out or push and snap in against the pipe wall.

[0010] In one embodiment the pipes, the frame rods, the hooked handle and all material utilized in the construction of the framed slidable pipe link assembly, all consist of high temperature endurance metals. These and other aspects of the present invention will become apparent from the following description of the preferred embodiment taken in conjunction with the following drawings, although variations and modification therein may be affected without departing from the scope of the novel concepts of the disclosure.

1. a pipe link assembly for removably sealing a first predetermined gap between axially aligned first and second flue pipes, the pipe link comprising:

a. a sliding sleave having a first diameter, a first length, a flue engagement end, and a sealing end,

i. the sliding sleave comprising a first sealing wall corresponding in shape to the sliding sleave

1. the first sealing wall having a second diameter that is different than the first diameter

2. the first sealing wall having a second length shorter than the first length,

3. the first sealing wall arranged substantially concentrically with the sliding sleave

4. the first sealing wall having a sealing end fixedly attached to the sealing end of the sliding sleave and an open end arranged to form a first space between the first sealing wall and the sliding sleave;

b. a flue pipe part having a third diameter, a third length, a flue engagement end and a sealing end;

i. the third diameter being different than the first and second diameters;

ii. the flue pipe part being in sealing engagement with the second flue pipe at the flue pipe part flue engagement end, there remaining an access gap between the sealing end of the flue pipe part and the first flue pipe;

iii. the flue pipe part comprising a second sealing wall corresponding in shape to the flue pipe part;

1. The second sealing wall having a fourth diameter that is different than the first, second, and third diameters;

2. The second sealing wall arranged substantially concentrically with the flue pipe part;

3. The second sealing end of the flue pipe part and an open end arranged to form a second space between the second sealing wall and the flue pipe part;

2. the flue pipe part and the sliding sleave comprising respective double wall sections at their respective sleave sealing ends;

3. the sealing end of the sliding sleave and the sealing end of the flue pipe part being axially aligned in opposed relationship such that when the sliding sleave is moved in a direction away from the flue engagement end of the flue pipe part, the open

end of the first sealing wall slides between the flue pipe part and the second sealing wall, and the open end of the second sealing wall slides between the sliding sleave and the first sealing wall; each of the first length, the second length, the third length, and the fourth length selected such that as the respective open ends approach the opposed respective sealing ends, the flue engagement end of the sliding sleave is moved into sealing engagement with the first flue pipe.

2. the pipe link assembly device, further comprising a triangular frame cage of three metal rods bent at the ends inward and attached to pipe link assemblies first and second flue pipes.

3. the pipe link assembly device as described, wherein the inner cone shaped shield is attached at the flue engagement end within the sliding sleave pipe wall.

4. the pipe link assembly device, further comprising two snap in leaf spring locks attached to the frame, one on each side.

5. the pipe link assembly device, wherein a method of use of a slidable pipe link as recited here, the intended uses for the open gap are for internal inspection and for insertion and or removing a flue cap and for cleaning interior of flue out to chimney base.

BRIEF DESCRIPTION OF THE DRAWINGS;

[0011] The accompanying drawings illustrate one or more embodiments of the invention and, together with the written description, serve to explain the principles of the invention. Whenever possible the same reference numbers are used throughout the drawings to refer to the same or like elements of an embodiment, and where in:

[0012] FIG. **1** Depicts a view of a complete frame mounted slidable pipe link assembly device, connected to wall, according to one embodiment of the present invention, with its support structure frame, sliding sleave seal and cap hanging on the unit frame.

[0013] FIG. **2** Shows another view of a frame (**25**) mounted slidable pipe link assembly in the open position with the hooked insulated cap, shown in place hanging in the open gap within the link and at the ready to be pushed into place covering the exterior wall hole.

[0014] FIG. **3** Shows another view of the frame mounted sliding pipe link assembly, with enhanced depiction of the inner sliding seal and how the inner semi walls (**9**) interact when engaged and when disengaged.

[0015] FIG. **4** Depicts a close up view of how the inner seal walls (**9**), interlock when slid one inside another and when pulled tightly together.

[0016] FIG. **5** Illustrated in Figure **5** drawing, is a partial sight, crosses from there according to 6-6 of figure **5**. It is a sight of end of the units illustrated on FIG. **1** and **2.**

[0017] FIG. **6** Depicts another illustration of the outer semi wall (**9**), the superior spacer (**22**) and the lower link pipe (**2**), that when assembled forms a partially doubled walled pipe.

[0018] FIG. **7** Depicts illustrations of the sliding sleaves (**1**) top header part (**23**) being a reducing pipe length, and also the interior shield (**5**) of the device, and also a sight of end depiction of the spacer, two wall relationship.

[0019] FIG. **8** Depicts a detailed representation of the double walled insulated cap (**3**), with the hooked metal handle (**12**).

FIG. **9** Simply shows the side view of a double wall insulated cap, hanging on a wall and another frontal depiction of it in place, covering and insulating a wall or ceiling flue opening.

Seen and referenced is the complete cap assembly (**3**) with the hooked handle as referenced as number twelve (**12**).

DETAILED DESCRIPTION OF THE INVENTION

[0020] The present invention is more particularly described in the following examples that are intended as illustrative only. Since numerous modifications and variations there in will be apparent to those skilled in the art. Various embodiments of the invention are now described in detail. Referring to the drawings, like numbers indicate like parts throughout the views. As used in the description herein and throughout the claim that follows. The meaning of "a", "an", and "the", includes plural reference unless the context clearly dictates otherwise. Also as used in the description herein and throughout the claim that follows, the meaning of "in", includes "in" and "on" unless the context clearly dictates otherwise. Also , in the construction of the invention, all parts are attached by way of either welding and rivets and threaded nuts that attach the frame parts.

[0021] The description shall be made as to the embodiments of the present invention in conjunction with the accompanying drawings in FIG. **1 - 9**. In accordance with the purposes of this invention, as embodied and broadly described herein, this invention, in one aspect relates to a combustion stove or furnace flue opening link assembly device. It includes a rigid metal frame (**25**), of three solid metal rods (**24**), threaded at the ends and bent uniformly at a 90 ° angle, one and one half inch **1 ½** in from the ends. This frame (**25**) then attached in a triangular pattern, parallel to the two pipes contained within the link (**2**), (**4**)**,** with angled ends inward connecting and attached to the outer pipe walls of the two pipe parts of the link, (**2**) and (**4**), when they are aligned end to end, leaving an open space in between. Thus the frame (**25**) permanently linking

these two aligned pipe parts in a fashion that permits a sliding sleave to slide back and forth over said two pipe parts, (**2**) and (**4**).

[0022] This sliding sleave (**1**) is of slightly greater diameter than the two previous standard sized pipes (**2**) and (**4**) and is slid over back and forth on the 2 pipe parts of the link. Being part of an inner sliding seal, the sleave slides easily left or right thus opening and revealing the open space that exist between both pipe ends. Or when slid up tightly and closed, creates an inner four wall, two point of contact chamber seal that surrounds the pipe wall and seals the existing inner wall slit from the sliding sleave. The framed sliding pipe link assembly is intended for use in all regular standard flue pipe diameters. The device is intended and most effective when installed at the exterior outer wall or ceiling flue hole, which leads out of the structure into the chimney outside, where it's cold. Thus the link provides, access inside the flue, exactly at this key location within the structure, where an insulated, double wall chimney cap can be inserted directly into the cold exterior wall and block the cold out, and also being the key location to clean out the chimney without dismantling anything and also for internal inspection of the flue or conduit.

[0023] Refering to FIG. **1 – 9**, the framed mounted slidable pipe link assembly device, FIG. **1**, includes a sliding sleave (**1**), made of standard flue pipe, but of a slightly larger diameter. The sleave (**1**) also has attached at its bottom end, a new shorter length pipe (**9**), of slightly smaller diameter, and being of shorter length than the sleave (**1**). When (**9**) is inserted into the bottom end of the sleave (**1**) a metal spacer (**22**) is also inserted in a concentric manner, where the spacer is now situated in between the now parallel pipe walls and flush with the pipe ends which are also flush. When, attached we have two walls on the lower end of the sleave (**1**). Then a second semi length pipe (**9**), being the same length as the first, but of larger diameter, is fitted down and

over pipe part (**2**) until the ends are flush, then again a concentric spacer (**22**) is attached in between the pipe walls flush with ends. Please refer to FIG. **6**.

Like illustrated in FIG.'s **2**, **3** and **4,** the device of preparing being the frame mounted slidable pipe link assembly understands: a cylindrical sleave (**1**), made up of more than just an inner double wall (**9**) on its lower end but also contains other parts. Illustrated in FIG. **7** is the inner shield (**5**) this being a cylindrical and slightly cone shaped metal tube (**5**) that when slid down into the top of the sliding sleave (**1**) until flush and attached around the top, it, this shield (**5**) protrudes down within the sleave (**1**) and by-passes the inner wall slit that is present within the sliding link wall, thus overlapping the wall slit inside and protecting the inner seal from any creosote leakage and the likes. Being attached to the sliding sleave (**1**), the shield (**5**) also travels left or right along with the sleave.

Also depicted in FIG. **7** is the reducing upper end part (**23**) pipe piece of the sleave (**1**), whereas when attached concentrically over the sleave (**1**), it (**23**) serves to reduce down to the standard diameter to connect to the crimped top end pipe (**4**) of the link.

[0024] Depicted in FIG. **1** is one of two metal handles (**26**) of a flat surface grip style, attached. Also depicted are two metal flexible spring leaf locks (**8**), made of thin flat metal and bent at the top outward horizontally for an inch, then bent up vertical for one inch to form a flat pull grip , when firmly attached to the lower inner frame (**25**) and at a slope in which they abut slightly to the sleave wall they can be manipulated to snap into locking position or be pulled out to unlock the seal.

[0025] illustrated in FIG. **8** is a detailed part by part depiction of a double wall, hooked handle, insulated, chimney flue cap (**3**). By utilizing a regular standard metal chimney flue cap (**18**) a hooked metal handle (**12**), is attached within the cap (**18**), at the center, then bending outward at

the center of the cap facing, a threaded bolt (**21**), is inserted through the center facing and leading directly through the unit and protruding out the other end. Then an inner concentric metal cylinder (**16**) is fitted within the cap (**18**), being of smaller diameter than the standard cap (**18**), it is the new inner lining wall attached down in the cap (**18**) to the inner facing wall. Thus providing for the double wall nature of the cap (**3**) creating an inner core for insulation (**15**) to be inserted. A flat concentric metal cover plate (**14**) is then fitted over the exposed insulation present, at a center hole accepting the bolt ending and tightened by a lock nut (**13**). Note because of the double wall (**16**) feature of the cap (**3**), it connects to both, either, a regular crimped male flue pipe end or any standard sized opening.

Various features of the invention are set forth in the following claim;

Claim 1: A pipe link assembly for removably sealing a first predetermined gap between axially aligned first and second flue pipes, the pipe link comprising:

a. a sliding sleave having a first diameter, a first length, a flue engagement end, and a sealing end,

i. the sliding sleave comprising a first sealing wall corresponding in shape to the sliding sleave,

1. the first sealing wall having a second diameter that is different than the first diameter

2. the first sealing wall having a second length shorter than the first length,

3. the first sealing wall arranged substantially concentrically with the sliding sleave

4. the first sealing wall having a sealing end fixedly attached to the sealing end of the sliding sleave and an open end arranged to form a first space between the first sealing wall and the sliding sleave;

b. a flue pipe part having a third diameter, a third length, a flue engagement end and a sealing end;

i. the third diameter being different than the first and second diameters;

ii. the flue pipe part being in sealing engagement with the second flue pipe at the flue pipe part flue engagement end, there remaining an access gap between the sealing end of the flue pipe part and the first flue pipe;

iii. the flue pipe part comprising a second sealing wall corresponding in shape to the flue pipe part;

1. the second sealing wall having a fourth diameter that is different than the first, second, and third diameters;

2. the second sealing wall arranged substantially concentrically with the flue pipe part;

3. the second sealing wall having a sealing end fixedly attached to the sealing end of the flue pipe part and an open end arranged to form a second space between the second sealing wall and the flue pipe part;

- the flue pipe part and the sliding sleave comprising respective double wall sections at their respective sleave sealing ends;
- the sealing end of the sliding sleave and the sealing end of the flue pipe part being axially aligned in opposed relationship such that when the sliding sleave is moved in a direction away from the flue engagement end of the flue pipe part, the open end of the first sealing wall slides between the flue pipe part and the second sealing wall, and the open end of the second sealing wall slides between the sliding sleave and the first sealing wall each of the first length, the second length, the third length, and the fourth length selected such that as the respective open ends approach the opposed respective sealing ends, the flue engagement end of the sliding sleave is moved into sealing engagement with the first flue pipe.

Claim 2: The pipe link assembly of claim 1, further comprising a triangular frame cage comprising three metal rods bent inwardly at their respective ends, the ends of the metal rods being attached to the first and second flue pipes respectively.

Claim 3: The pipe link assembly of claim 2, wherein an inner cone shaped shield is attached at the flue engagement end within the sliding sleave.

Claim 4: The pipe link assembly of claim 3, further comprising two snap in leaf spring locks attached to the frame, on opposite sides thereof.

Claim 5: A method of use of the pipe link assembly of any one of claims 1-4, the method comprising i) providing the pipe link assembly as a part of a flue; ii) moving the sliding sleave of the pipe link assembly to expose the gap; and iii) performing any one or more of: inspection of the flue; inserting a flue cap; removing the flue cap; and cleaning the interior of the flue.

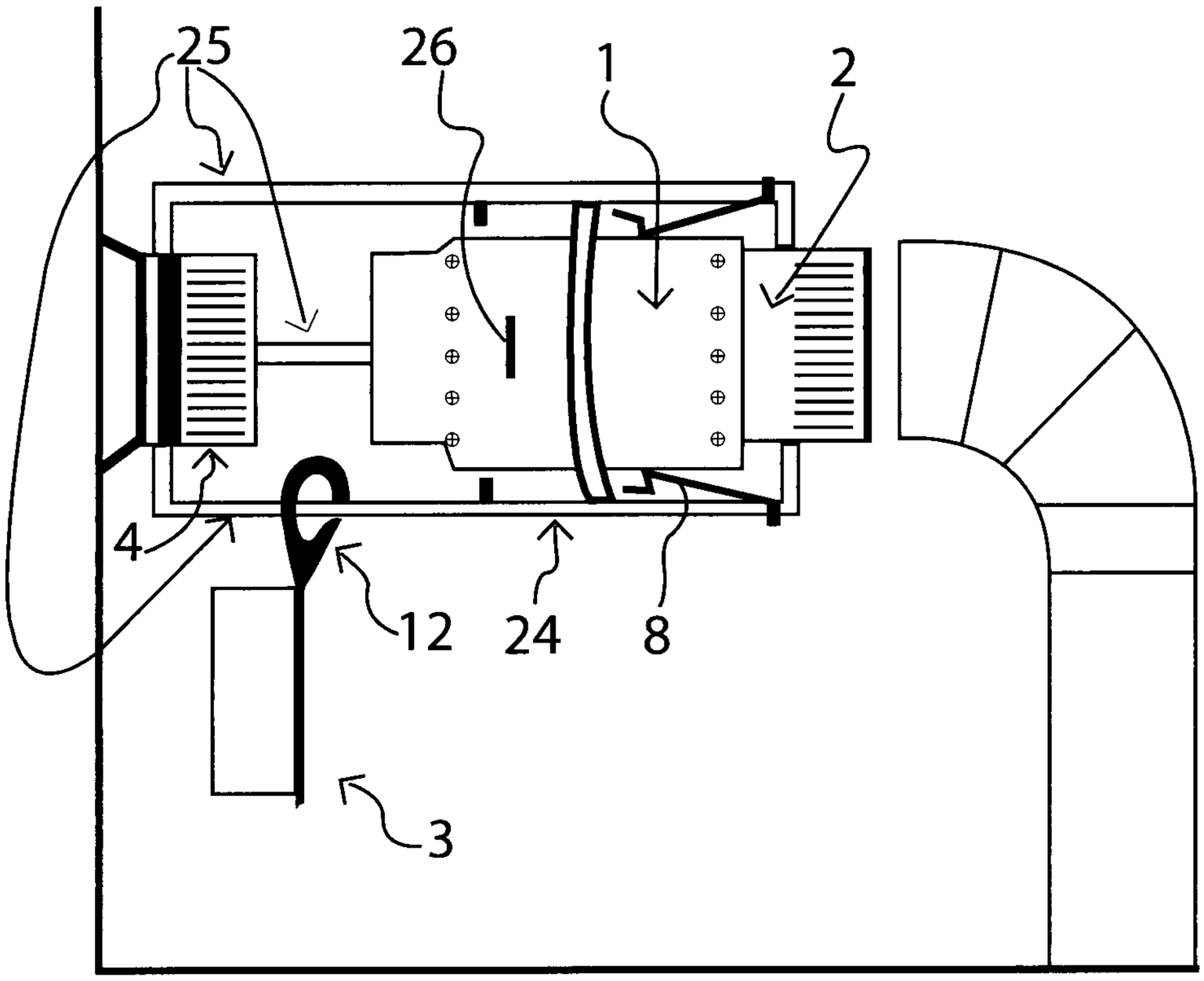


FIG.1

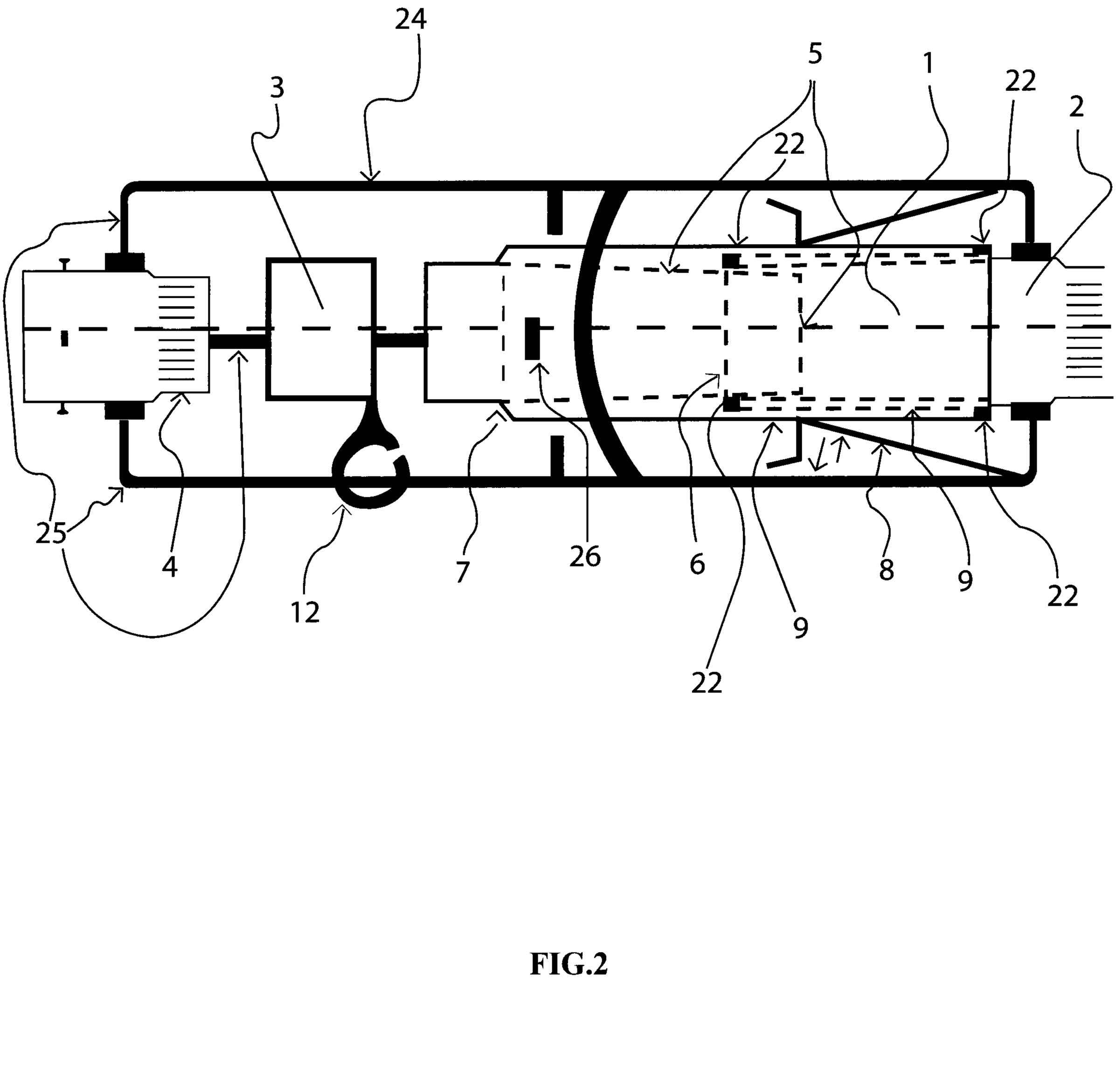


FIG.2

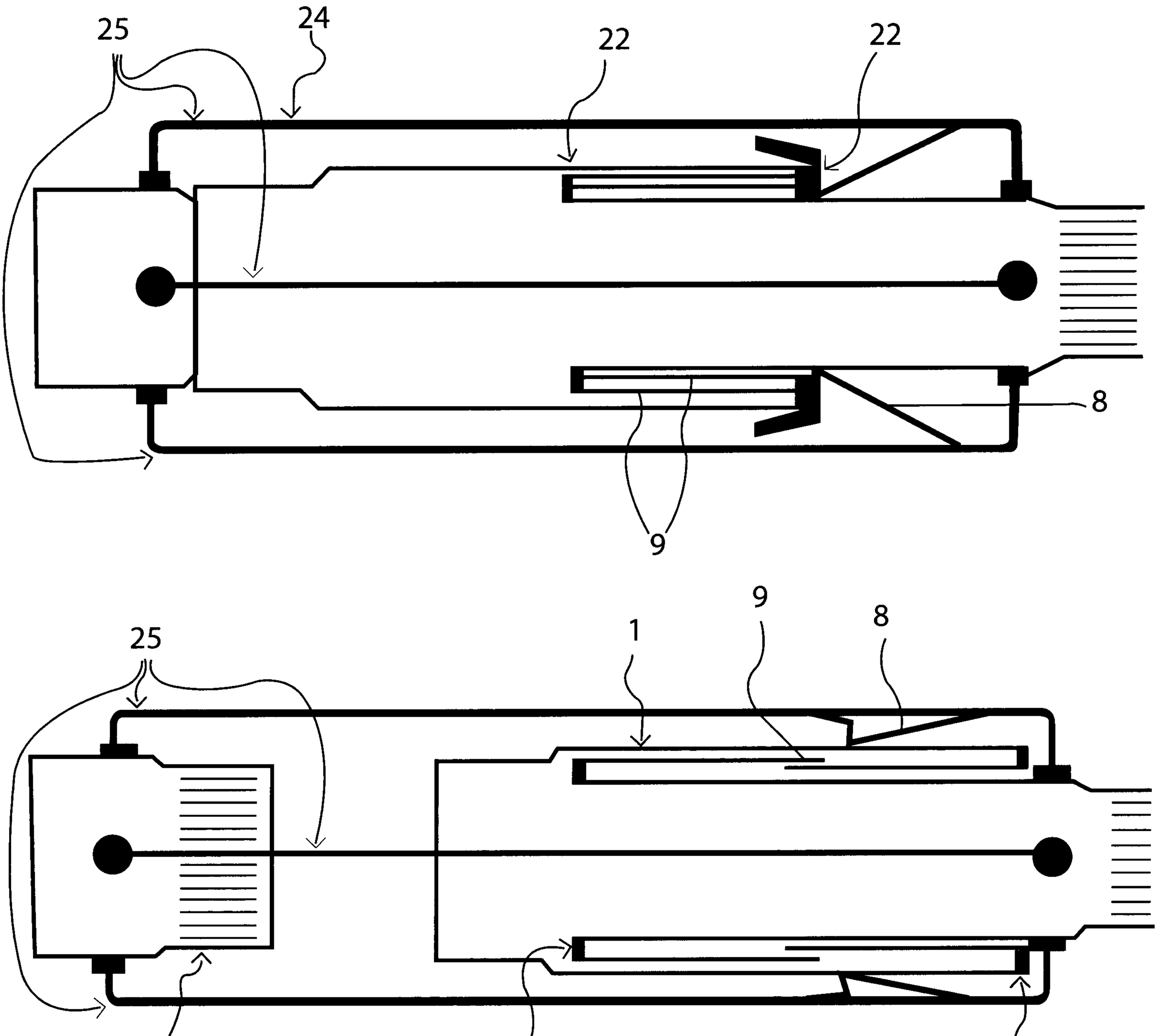


FIG.3

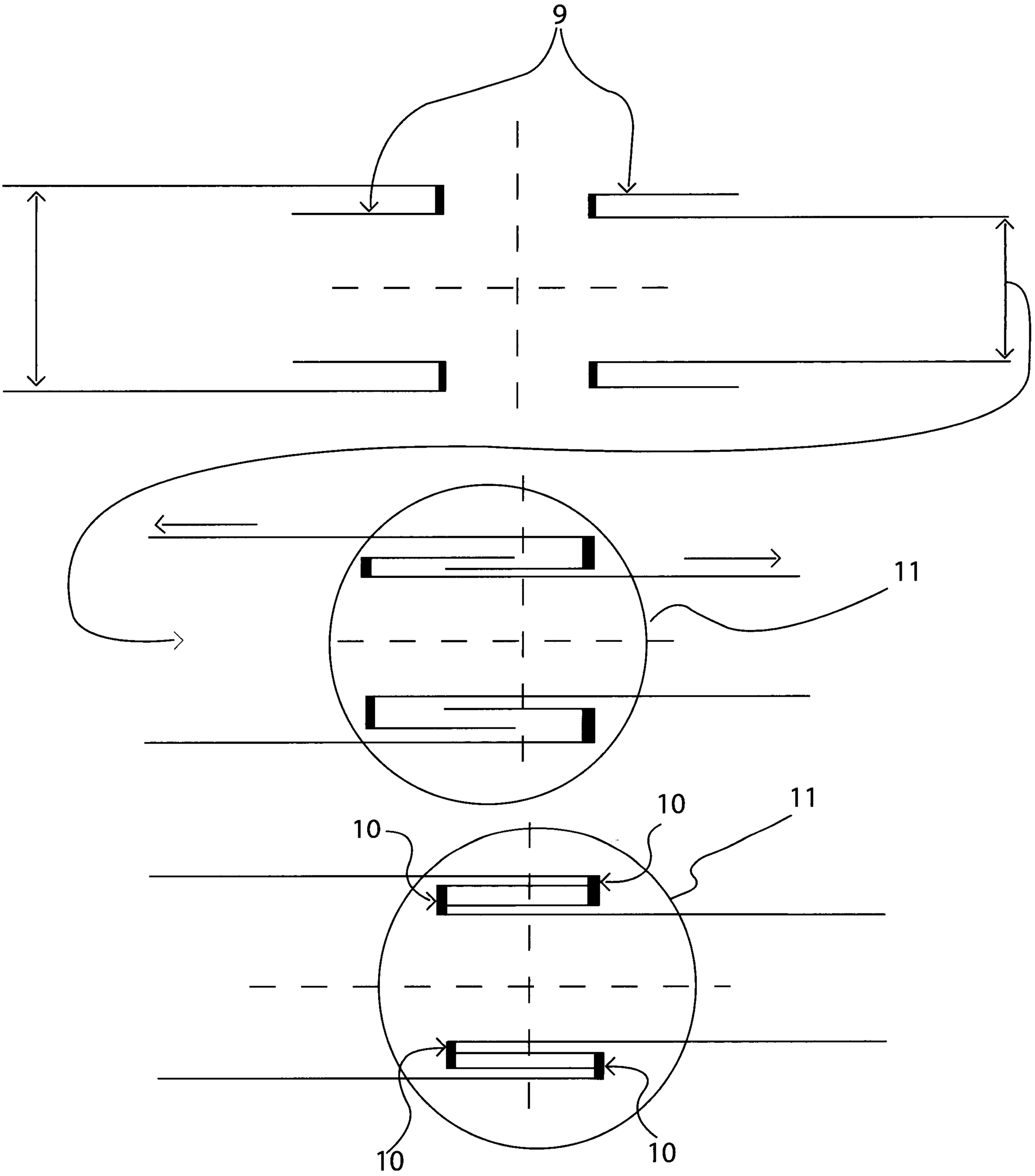


FIG.4

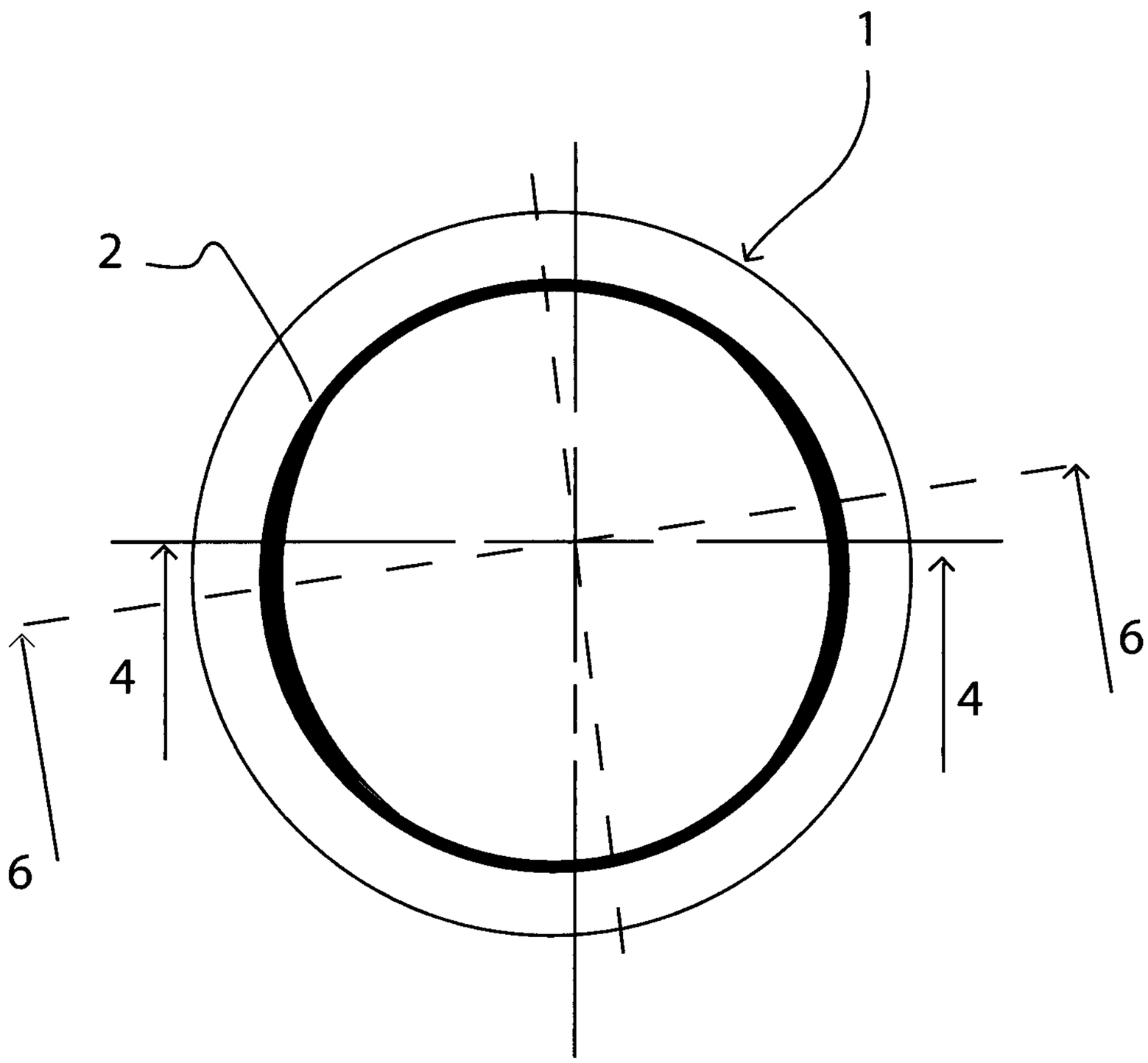


FIG.5

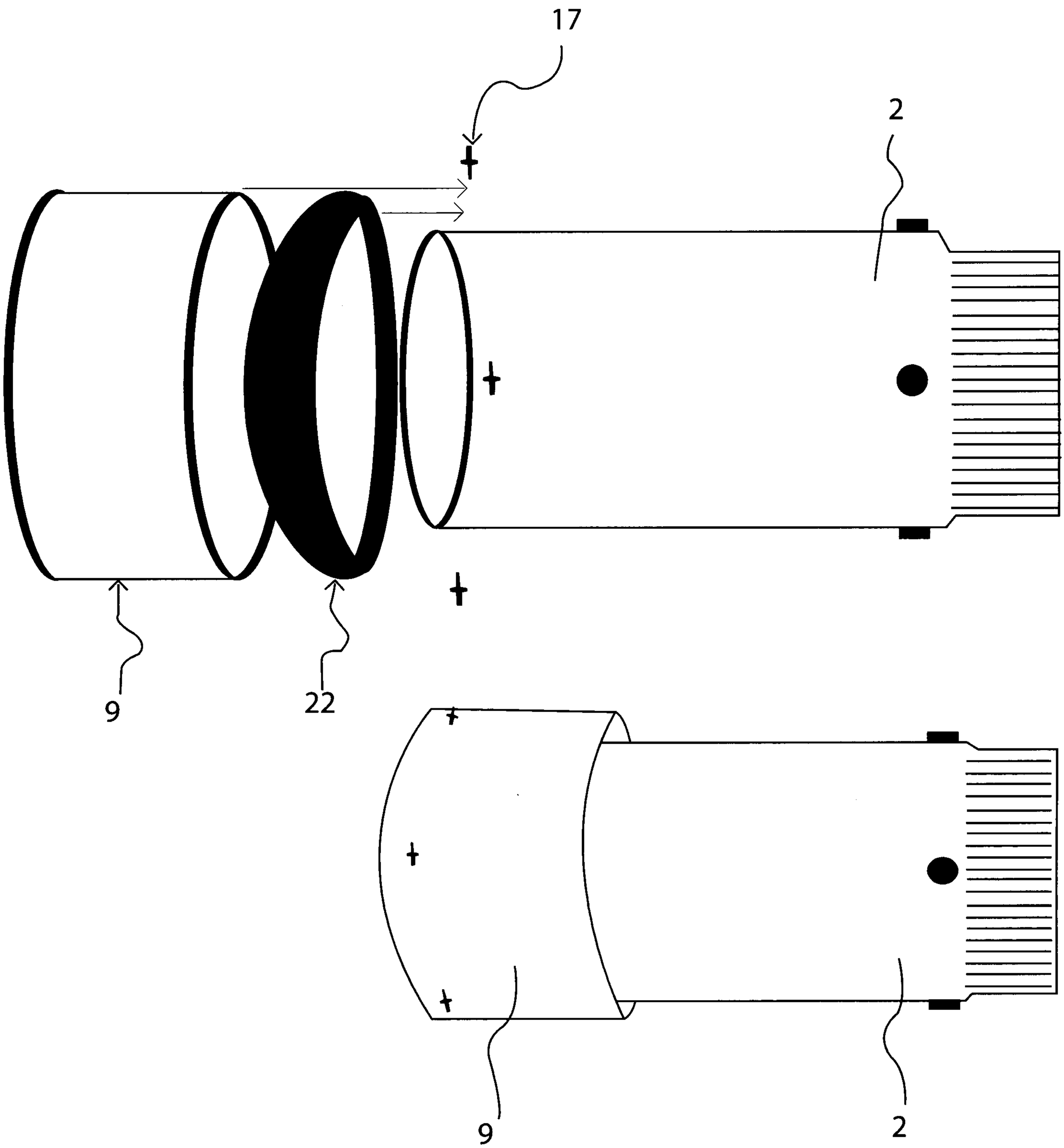


FIG.6

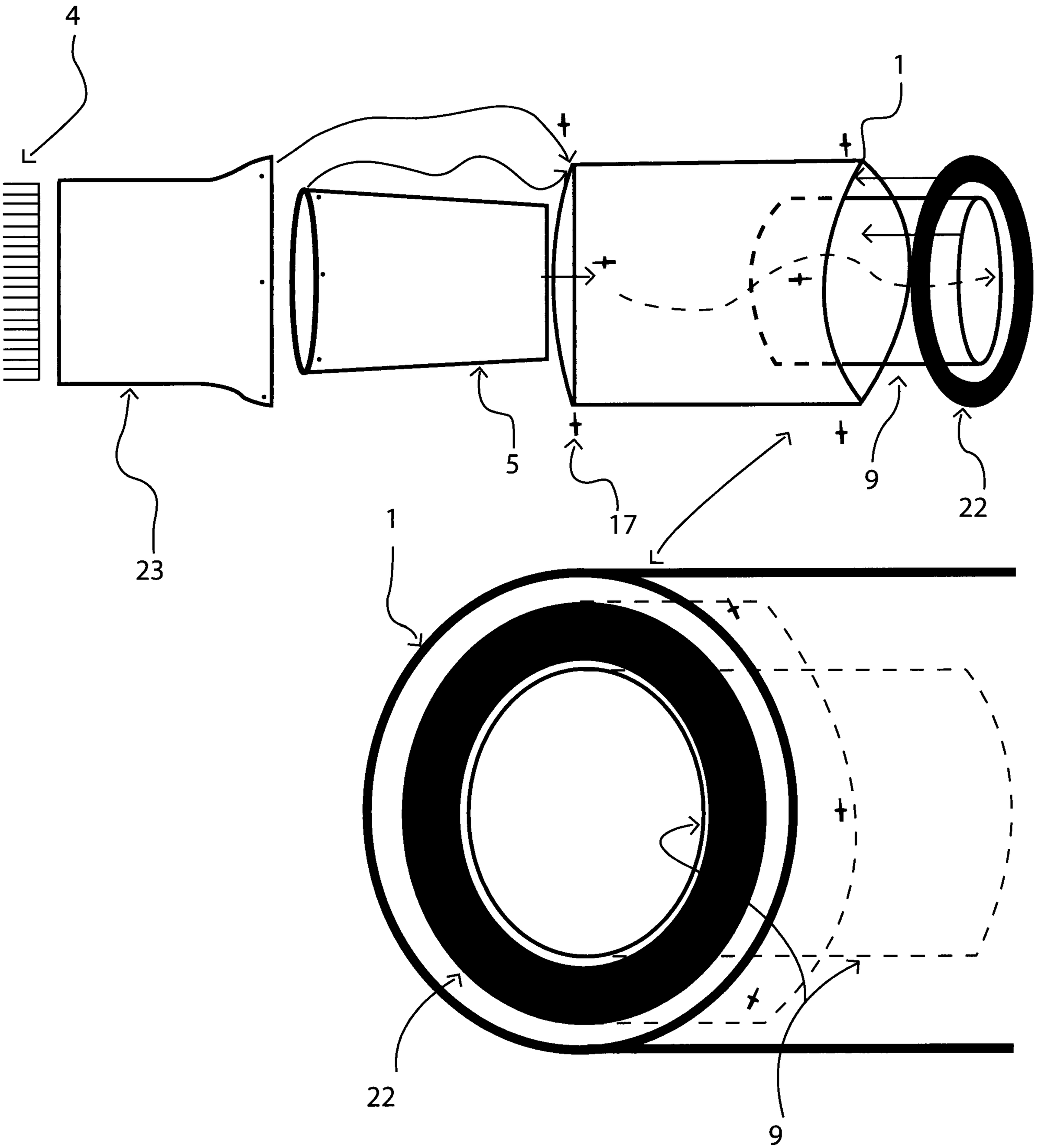


FIG.7

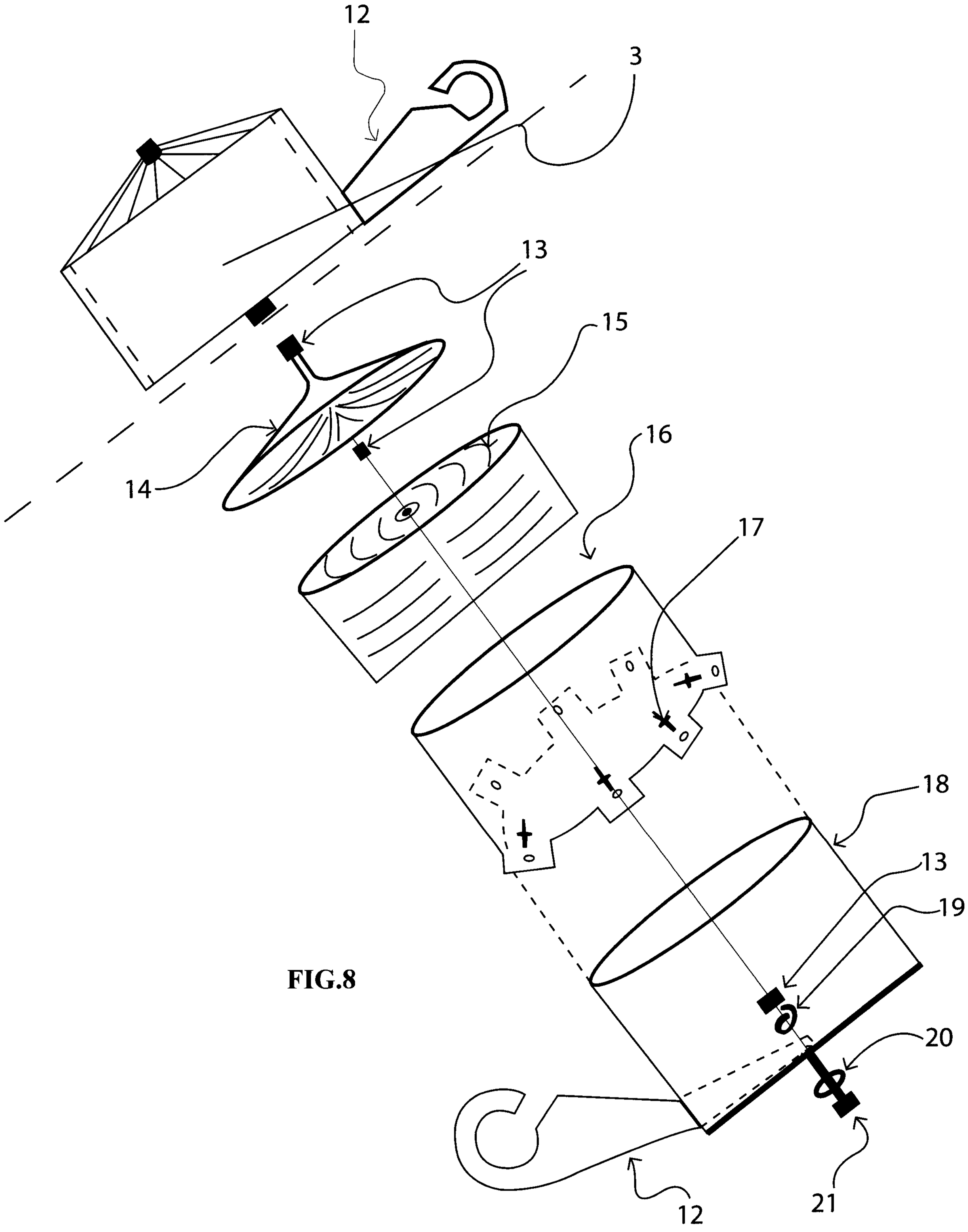


FIG.8

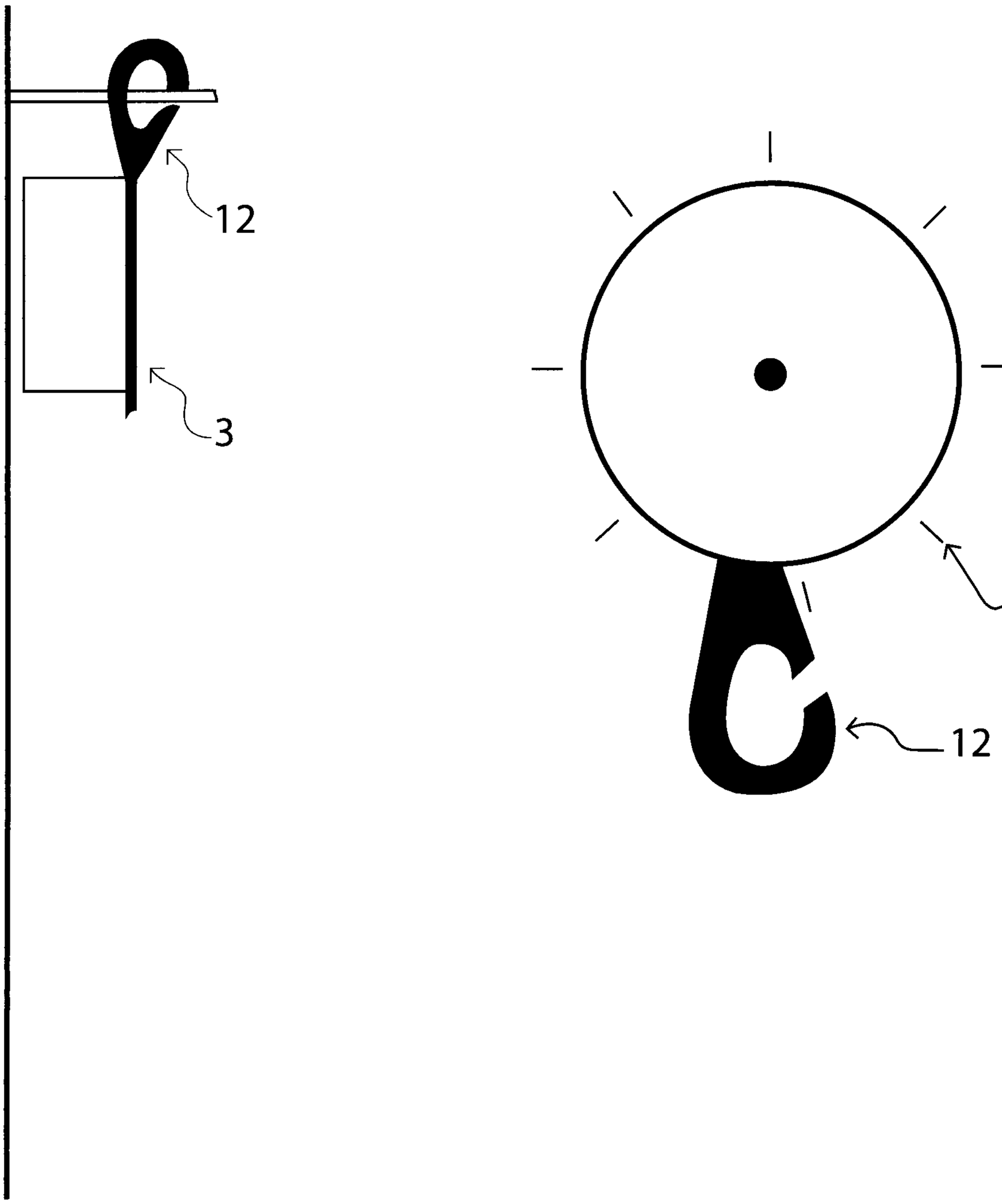
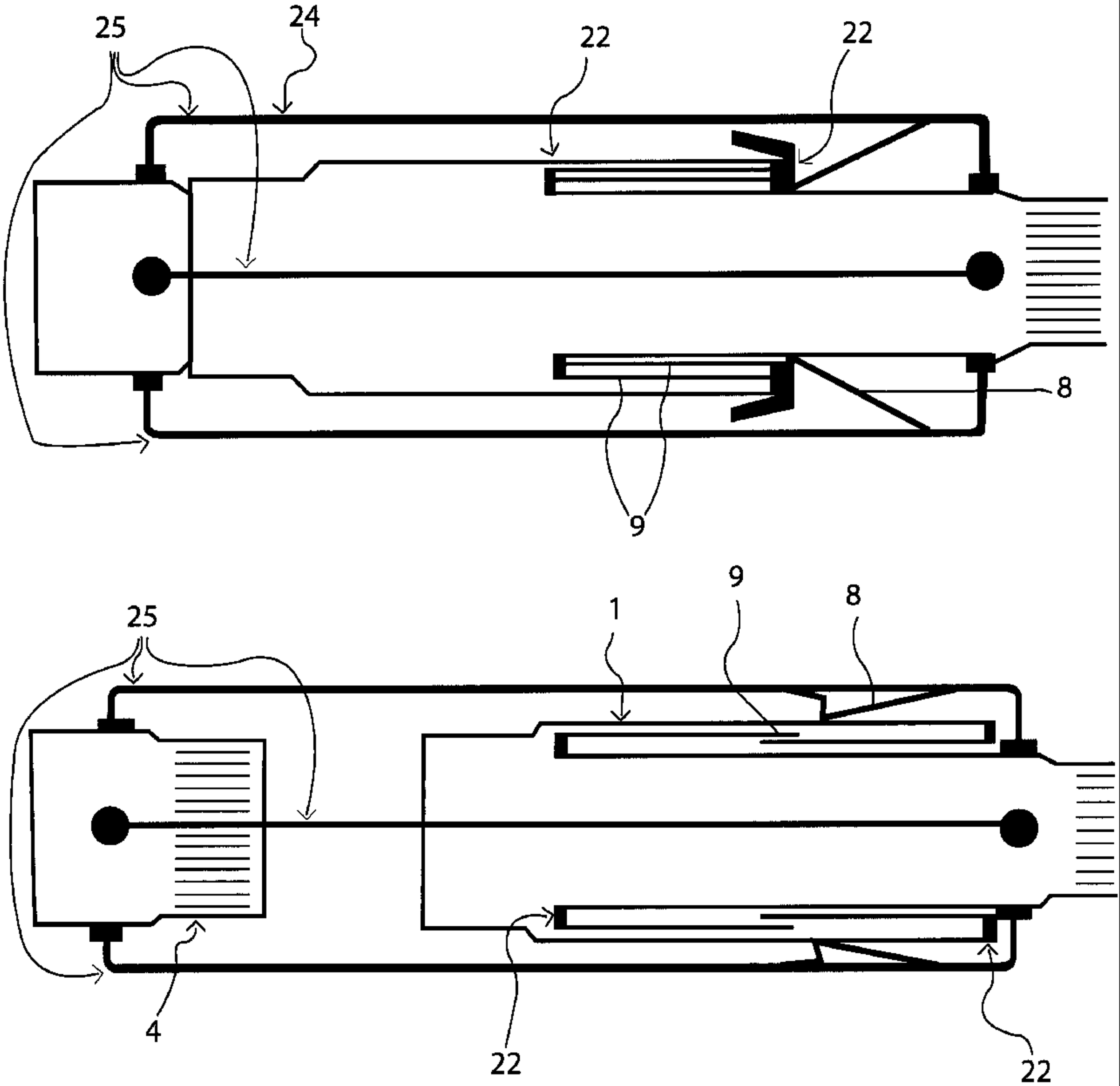


FIG. 9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