

**“FILTERING ELEMENT AND SMOKE MOUTHPIECE CONTAINING
SAID FILTERING ELEMENT”
DESCRIPTION**

The present invention relates to an antiviral and anticarcinogenic filtering element and to a smoke mouthpiece, in particular a mouthpiece for a nargile, adapted to house said filtering element. Furthermore, the present invention relates to an accessory device comprising the filtering element
5 and applicable to the smoke mouthpiece, and to an antiviral and anticarcinogenic pipe for a nargile applicable to the smoke mouthpiece of the present invention, said smoke mouthpiece potentially being connected to the accessory device.

The nargile, often also called a shisha, hookah or water pipe, is an oriental
10 pipe for smoking tobacco whose structure has been roughly the same for hundreds of years.

In fact, still today, each nargile essentially includes a container for water, a brazier for tobacco and a suction pipe. The smoker inhales the smoke through a special suction pipe which places in communication the water
15 container where the smoke is generated and the mouth of the smoker.

Smoking a nargile is a consolidated social custom in the Arab world, but has now also become fashionable among Western youths who increasingly often meet in evocative bars furnished with exotic tastes to share the pleasure of smoking tobacco aromatised with fruit which is
20 usually used in a nargile.

The increasing spread of this custom has inspired the health authorities of many countries and the anti-smoking associations to investigate the harmful potential of smoking tobacco through a nargile.

It is a common belief that the smoke from a nargile does not affect human
25 health.

This “belief” is connected both with the fact that the combustion temperature of the tobacco a the nargile is lower with respect to a cigarette (in the case of a nargile, the tobacco burns out slowly and indirectly through charcoal that burns at about 450 degrees, whereas in a

cigarette the tobacco burns directly at a temperature comprised between 800 and 900 degrees), and with the presumed filtering effect of the water through which the smoke of the tobacco burned in the nargile passes.

However, many experts have measured the quantity of carbon monoxide present in the air exhaled by a group of non-smokers, a group of moderate smokers and a group of heavy smokers and the experiment showed that people who smoke a nargile can take in large amounts of carbon monoxide. Therefore, effectively, this way of using tobacco is absolutely no healthier, but on the contrary may be more harmful than smoking a cigarette.

In fact, substantial research has highlighted that the use of a nargile is associated with the onset of various pathological conditions such as tumours, chronic lung disease, cardiovascular risks, etc.

A further risk to which nargile smokers are exposed which has aroused much concern in the World Health Organisation is the transmission of pathogenic agents, of bacterial and viral origin, etc. through the saliva of smokers or however through the inhalation of the smoke by the smokers.

In fact, it is usual for nargile smokers to pass each other the suction pipe using the same mouthpiece. This step is potentially at high risk of the transmission of pathogenic agents from one individual to another. This is added to the fact that the water, where the burned tobacco smoke passes, may be contaminated by an individual carrying a pathogenic agent. In this way, the people who use the nargile subsequently will also be subject to risk of contagion. In fact, it is usual for managers of bars where the nargile is smoked to not always change the water in the container of which the nargile is comprised.

The possibility of the rapid transfer of pathogenic agents with the custom of smoking a nargile, both through the use of the same mouthpiece, and through potentially contaminated water, is extremely dangerous when it refers to pathogens that threaten people's lives. For example, when the world alarm concerning the possible uncontrolled spread of swine flu caused by the H1N1 virus occurred, many countries prohibited the use of

the nargile precisely in light of the very high potential for the spread of a pathogenic agent through this custom.

If, further to the H1N1 virus, we think about the possibility of the development of new insidious pathogenic agents and the danger of human immunodeficiency virus (HIV), tuberculosis or even the more trivial Herpes simplex virus, it is clear how important the need is to find a solution to the possibility of transferring pathogenic agents from one individual to another through the use of a nargile.

In general, in light of the above, the need to minimise the damage to human health caused by carcinogenic substances or pathogenic agents through the use of a nargile is very important.

The technical problems presented above are solved by the Applicant with an antiviral and/or anticarcinogenic filtering element for a smoke mouthpiece and a smoke mouthpiece adapted to house said filtering element as specified in the appended independent claims.

The preferred aspects of said filtering element and said mouthpiece are specified in the appended dependent claims.

In particular, the Applicant has found that, by applying the antiviral and/or anticarcinogenic filtering element to the smoke mouthpiece according to the present invention, it is possible to avoid the transmission of pathogenic agents from one individual to another associated with smoke, in particular with nargile smoke, and to substantially reduce the amount of carcinogenic substances that a smoker absorbs from tobacco smoke, in particular from nargile tobacco. The application of the antiviral and/or anticarcinogenic filtering element to the smoke mouthpiece according to the present invention is substantially advantageous for the purpose of reducing the risk of spreading diseases, whether they are caused by pathogenic agents such as viruses or bacteria, or caused by the carcinogenic substances contained in the tobacco. This result enables the large scale spread of disease to be prevented, i.e. it avoids pandemics and epidemics, and substantially reduces health care costs for individual countries and worldwide.

The present invention is described in detail herein below, also with the aid of the accompanying figures, in which:

- Figure 1 illustrates a preferred embodiment of a filtering element according to the present invention in perspective view.
- 5 – Figure 2 illustrates a front view of the embodiment of the filtering element of Figure 1.
- Figure 3 illustrates a perspective view of an embodiment of the smoke mouthpiece according to the present invention in the assembled configuration.
- 10 – Figure 4 illustrates a perspective view of the embodiment of the smoke mouthpiece of Figure 3 in an exploded configuration.
- Figure 5 illustrates a cross section of the embodiment of the smoke mouthpiece of Figure 3.
- Figure 6 illustrates a perspective view of an accessory device for a
15 filtering element according to the present invention in the assembled configuration.
- Figure 7 illustrates a perspective view of the embodiment of the accessory device of Figure 5 in an exploded configuration.
- Figure 8 illustrates an embodiment of the smoke mouthpiece of the
20 present invention applied to a pipe for a nargile.

A first aspect of the present invention relates to a filtering element for a smoke mouthpiece as illustrated in Figures 1 and 2.

The filtering element 1 comprises at least one layer of fabric 2 able to stop pathogenic agents and/or carcinogenic substances contained in a smoke
25 fluid (for example tobacco smoke) and that contact the surface of said filtering element 1. Therefore said fabric can be defined as an antiviral and/or anticarcinogenic filtering fabric and, consequently, also the filtering element of the present invention is an antiviral and/or anticarcinogenic filtering element.

Preferably the filtering element 1 further comprises a peripheral support 3 to which said at least one layer of fabric 2 is anchored.

According to a preferred embodiment of the invention, the layer of fabric 2 able to stop the pathogenic agents is a cellulose fabric. Preferably said fabric 2 comprises at least one layer comprising bivalent metal ions and/or at least one reactive dye. The bivalent metal ions are preferably copper (Cu^{2+}) or zinc (Zn^{2+}). The reactive dye is preferably a porphyrin, preferably a phthalocyanine. In particular, said porphyrin and said phthalocyanine are a porphyrin and a phthalocyanine containing copper (Cu). Preferably the reactive dye is chosen from CI Reactive Blue 4, CI Reactive Blue 21, CI Reactive Blue, CI Reactive Blue 163, CI Reactive Brown 23, CI Reactive Orange 4, CI Reactive Red 1, CI Reactive Red 2, CI Reactive Red 6, CI Reactive Red 11, CI Reactive Red 78, CI Reactive Yellow 39 and CI Reactive Yellow 86, more preferably CI Reactive Blue 21. Preferably said at least one layer comprising bivalent metal ions and/or said at least one reactive dye is attached to the fabric, preferably to a cellulose fabric, through a vinyl sulfone group. In particular, the fabric 2 is a fabric comprising a non hydrogel sulfate cellulose.

The layer of fabric 2 able to stop the carcinogenic substances is a fabric made of a material that binds selectively and inactivates the polycyclic aromatic hydrocarbons, preferably a fabric that comprises cellulose fibres and a porphyrin, preferably a phthalocyanine. Preferably said porphyrin and said phthalocyanine contain copper, more preferably the phthalocyanine containing copper is CI Reactive Blue 21.

In particular, the filtering element 1 further comprises one or more layers of a hydrophilic material, preferably a hydrophilic plastic, and/or a heat deformable fabric, in particular chosen from: polypropylene, polyester and cellulose acetate. Said one or more layers of a hydrophilic material and/or a heat deformable fabric are preferably adjacent to or in contact with each other. In an embodiment of the present invention, said heat deformable fabric is a spunbond non-woven polypropylene fabric (known as Spunbond Nonwoven Polypropylene Fiber-SBPF) or a melt-blow polypropylene fibre fabric (known as Melt Blow Polypropylene Fibre – MBPF). The hydrophilic

material has the aim of rapidly absorbing any drops containing said pathogenic agents and/or said carcinogenic substances.

In a further embodiment of the invention, the layer of fabric 2 able to stop the pathogenic agents is made of the same fabric used to make the mask
5 BioMask™ or the material described in patent application WO 2009/146412.

In a further embodiment of the invention, the layer of fabric 2 able to stop the carcinogenic substances is the material MicroBlue™ or the material described in patent application WO 2007121439, or in patent EP1317192,
10 or in patent EP1557098.

According to a further embodiment of the present invention the layer of fabric 2 comprises polymeric fibers preferably selected from the group consisting of: silicone, polypropylene (PP), polyethylene (PE), nylon, latex, stainless steel, titanium and polytetrafluoroethylene (PTFE), preferably the
15 polymeric fibers are made of polyethylene.

In particular, said layer of fabric 2 comprises, in addition to the polymeric fibers, nanoparticles and/or fibers (filaments) of silver and/or salt thereof, and/or nanoparticles or fibers (filaments) of copper, zinc or natural charcoal. The silver is preferably non-toxic and/or colloidal.

20 Preferably the nanoparticles and/or the fibers (filaments) are in the form of a coating.

The coating is realized preferably by elettroplating or by plasma/sputter coating.

In the preferred embodiment of the invention, the coating is realized by
25 spraying of colloidal silver on the polymeric fibers, preferably on polyethylene fibers. In fact, in particular, a filtering element having a layer of polyethylene coated with colloidal silver as layer of fabric 2 was particularly effective in both the retaining/blocking of the carcinogenic substances generated by the combustion of any type of tobacco from
30 hookah (for example those containing more or less molasses), and any pathogens present in the stream of air through it.

The amount of said silver nanoparticles and/or natural coal varies preferably from 0.1 to 50 $\mu\text{g}/\text{cm}^2$, more preferably from 1 to 35 $\mu\text{g}/\text{cm}^2$. Alternatively, the filtering fabric is an electrostatic fabric made of polymeric fibers characterized by a permanent dipole and preferably comprising an additive, more preferably an amine of fatty acids, which allows to increase the electrostatic capacity of the fiber in function of the increasing of the heat. In this way the increase of the temperature that occurs during smoking the hookah causes an increase of the electrostatic capacity of the filter and, therefore, the death of the pathogens possibly present in the stream of air that passes through the filter.

Preferably, the layer of tissue 2 has a filterability index (retention rating) which varies from 0.05 to 1.5 microns, preferably is of 0.07, 0.10, 0.20, 0.45, 0.70, 1 micron.

Preferably the weight per unit area (grammage) of the layer of fabric 2, preferably made of polyethylene, varies from 100 to 140 g/m^2 , preferably from 110 to 130 g/m^2 .

The pathogenic agents to which the present invention refers, are preferably human pathogens, in particular viruses, bacteria or fungi. For example, the pathogenic agents are those that cause diseases that can be transmitted between humans, in particular diseases of the respiratory apparatus, preferably the flu virus, in particular the H1N1 virus, the herpes simplex virus, adeno-associated virus, papilloma virus, the hepatitis B virus, the hepatitis C virus or HIV.

The carcinogenic substances to which the present invention refers are the substances contained in the smoke of tobacco for a nargile, in particular said carcinogenic substances are polycyclic aromatic hydrocarbons (PAHs).

With reference to the peripheral support 3, it is made of a rigid material, preferably plastic, for example polyethylene (PE), polypropylene (PP) or polyvinylchloride (PVC). The peripheral support 3 is used to define a rigid anchoring perimetric structure for said at least one layer of fabric 2.

Preferably, the peripheral support 3 comprises an annular body with a circular development. In particular, said layer of fabric 2 is firmly anchored to the peripheral support 3 preferably through hot extrusion.

Preferably, the filtering element 1 has a prevalent lying plane and a dimension, measured on said prevalent lying plane, such as to allow the filtering element 1 to be inserted (preferably to measure) in the suction channel of a smoke mouthpiece, in particular for a nargile. Preferably such dimension is comprised between 15 and 25 mm. In the embodiment of Figures 1 and 2, such dimension constitutes the external diameter of the annular body.

The thickness of the filter element 1 preferably varies between 2 to 6 mm², more preferably between 3 and 5 mm²

A further aspect of the present invention regards a smoke mouthpiece, preferably a mouthpiece for a nargile, adapted to house at least one filtering element of the type previously described. An example of such a mouthpiece is illustrated in an assembled view, exploded view and cross section in Figures 3, 4 and 5 respectively and is indicated overall with reference number 4.

Advantageously such smoke mouthpiece 4 is a sectional mouthpiece. As illustrated in Figures 3, 4 and 5, the mouthpiece 4 comprises: a head body 5, a central body 6, and potentially a connection body 7.

The head body 5 extends between a distal end 9 and a proximal end 8 and is preferably curved. The head body 5 defines the portion of the mouthpiece 4 from which the smoker inhales through his/her mouth and is therefore hollow internally in order to define an internal conduit "C1" extending between the mentioned ends 8, 9.

The central body 6 of the mouthpiece 4 extends between a proximal end 10 and a distal end 11 and is hollow internally in order to define a respective through conduit "C2" in fluid communication with the internal conduit "C1" of the head body 5. The central body 6 is connectable to the

head body 5 so that the internal conduit "C2" of the central body 6 defines an extension of the internal conduit "C1" of the head body 5.

The connection body 7 is intended to be directly connectable to a smoke supply source, for example the pipe of a nargile. The connection body 7 is
5 firmly applicable to the distal end of the central body 6, therefore opposite the head body 5.

The connection between the head body 5 and the central body 6 and/or between the central body 6 and the connection body 7 is performed through reversible connection means. Preferably said connection means
10 comprise an axial protrusion at the end of one of the two bodies and a corresponding receiving portion at the end of the other body. In other words, the connection means are defined by respective press, snap-fit or screw engagements. For example, an axial protrusion 9a is envisaged at the distal end 9 of the head body 5, and a corresponding receiving portion
15 10a at the proximal end 10 of the central body 6 and/or the axial protrusion is at the distal end 11 of the central body 6, whereas the corresponding receiving portion is at the level of the connection body 7.

Figure 5 illustrates a cross section of the mouthpiece 4. In particular, it can be observed that the mutual coupling between the head body 5 and the
20 central body 6 of the mouthpiece 4 and/or the mutual coupling between the central body 6 and the connection body 7 of the mouthpiece determine, preferably, the formation of respective chambers or gaps 12 between the two coupled ends. Each chamber 12 is able to house at least one filtering element 1.

25 Preferably, the peripheral support 3 of the filtering element 1 is held between the two coupled ends and allows the filtering element 1 to remain in a fixed position between the head body 5 and the central body 6 of the mouthpiece 4 and/or between the central body 6 and the connection body 7 of the mouthpiece 4.

30 In this configuration, the filtering element 1 is arranged with its prevalent plane of transversal magnitude, preferably perpendicular to the

development direction of the internal conduits of the head body 5 and the central body 6.

Therefore, in some embodiments the sectional smoke mouthpiece of the present invention comprises at least one filtering element 1 between the
5 head body 5 and the central body 6 and/or at least one filtering element 1 between the central body 6 and the connection body 7. Preferably the smoke mouthpiece comprises at least one antiviral filtering element 1 and at least one anticarcinogenic filtering element 1.

In a non-illustrated embodiment, the mouthpiece 4 comprises the
10 mentioned head body 5 and the central body 6 without the connection body 7 and only includes at least one filtering element 1 between the head body 5 and the central body 6.

Preferably, the mouthpiece and/or its portions are made of a rigid material, preferably plastic, wood, sepiolite or magnesium silicate hydrate and a
15 terracotta, a ceramic or the like, or at least one metal. In this way the smoke mouthpiece is very functional and convenient to transport since the various portions can be easily disassembled and washed after use.

In a further embodiment of the invention, at least one filtering element 1 of the type previously described is inserted in an accessory device 13,
20 preferably disposable. This embodiment allows the application, pre-mouthpiece, preferably disposable, of said filtering element 1. An example of this embodiment is illustrated in an assembled and an exploded view in Figures 6 and 7 respectively.

In the context of the present invention, pre-mouthpiece means that the
25 accessory device 4 in which the filtering element 1 is contained is applied on the proximal end 9 of the mouthpiece 4 from which the user inhales the smoke, or on the most proximal end of the mouthpiece 4 to the user's mouth.

With reference to Figure 7, the accessory device 13 comprises at least two
30 end portions 14, 15 preferably firmly connectable to each other, and at least one filtering element 1 contained between them.

In particular, each end portion has at least one respective through conduit 16, 17. In the assembled configuration the two conduits 16, 17, which are preferably coaxial, are communicating with each other with the interposition of at least one filtering element 1.

- 5 In the illustrated embodiment, between the two end portions 14, 15 of the accessory device 13 an internally hollow spacing element 18 is interposed. In fact, the hollow shape of said spacing element allows the conduits of the end portions to be placed in fluid communication. The spacing element 18 defines the mutual connection of said end portions 14, 15. Between the
10 spacing element 18 and each end portion 14, 15 at least one filtering element 1 is interposed, preferably at least one antiviral filtering element 1 and at least one anticarcinogenic filtering element 1.

- Preferably the portion 15 of the accessory device 13 is a connector element and the portion 14 is a nozzle element. The connector element
15 connects the accessory device 13 to the end of the mouthpiece 4 from which the user inhales the smoke.

The nozzle of the accessory device 13 in this embodiment constitutes the portion that engages the user's lips to inhale the smoke.

- In other words, this embodiment interposes, between the classic end of
20 the mouthpiece adapted to engage the user's lips and the actual user's lips, an accessory device 13 comprising at least one filtering element 1. This accessory device 13 is preferably made of a rigid material, more preferably plastic. The accessory device 13 can be used in a disposable way hence notably reducing the risk of passing pathogenic agents from
25 one smoker to another through the use of a common mouthpiece.

Preferably, the spacing element 18 is firmly connected to the end portions 14, 15 through a snap-fit or screw coupling or by interference.

- In an embodiment of the present invention, said accessory device 13 is commercially supplied as a pre-assembled accessory device (an example
30 is the one in Figure 6) and preferably the various parts of the device are not separable. This is in order to maintain the sterility of the at least one

filtering element. Preferably the pre-assembled accessory device 13 comprises at least one antiviral filtering element 1 and at least one anticarcinogenic filtering element 1.

Figure 8 illustrates an example of a further aspect of the present invention
5 wherein a pipe for a nargile "T" is coated on one internal surface "S" with the fabric 2 able to stop the pathogenic agents and/or the carcinogenic substances contained in the smoke of the type described above. In some embodiments, said pipe for a nargile is connectable to a mouthpiece of the type described above which, in turn, can be connected with the accessory
10 device of the type described above.

A further aspect of the present invention relates to a kit comprising at least one filtering element of the type described above, and/or at least one smoke mouthpiece of the type described above, and/or at least one accessory device of the type described above.

15 With particular reference to nargile smoke, the structure of the smoke mouthpiece of the present invention completely and definitively resolves many of the problems connected with this practice, whether it is performed in public or in private, unlike other strategies, such as the use of a disposable plastic pipe, attempted in the past by various health authorities
20 to contain said problems.

The possibility to safely re-use a number of times the same smoke mouthpiece, which is also light, pocket-sized, washable and easy to sanitise, by replacing the internal filters only, reduces the use and waste of material, with unmistakable environmental benefits.

25 The use of the kit according to the present invention, and therefore of the filtering element of the invention and the smoke mouthpiece adapted to contain it, as well as providing real and complete protection, both from an antiviral and toxicological point of view, reduces the cost of smoking with respect to the use of the disposable plastic pipe, without considering the
30 immense benefits on public health.

CLAIMS

1. A filtering element for a smoke mouthpiece comprising:
at least one layer of fabric (2) able to stop pathogenic agents and/or
carcinogenic substances contained in a flow of smoke;
5 at least one peripheral support (3) to which said at least one layer
of fabric (2) is firmly anchored.
2. The filtering element according to claim 1, wherein said at least one
layer of fabric (2) able to stop pathogenic agents comprises at least
one layer of bivalent metal ions and/or at least one reactive dye and
10 is preferably a cellulose fabric.
3. The filtering element according to claim 2, wherein the bivalent
metal ions are chosen from copper (Cu^{2+}) and zinc (Zn^{2+}) and the
dye is chosen from CI Reactive Blue 4, CI Reactive Blue 21, CI
Reactive Blue, CI Reactive Blue 163, CI Reactive Brown 23, CI
15 Reactive Orange 4, CI Reactive Red 1, CI Reactive Red 2, CI
Reactive Red 6, CI Reactive Red 11, CI Reactive Red 78, CI
Reactive Yellow 39 and CI Reactive Yellow 86.
4. The filtering element according to any of claims 1-3, wherein the
layer of fabric (2) able to stop carcinogenic substances comprises
20 cellulose fibres and a reactive dye, preferably a porphyrin, more
preferably a phthalocyanine.
5. The filtering element according to claim 4, wherein said porphyrin
and said phthalocyanine is a porphyrin or a phthalocyanine
containing copper, preferably the phthalocyanine containing copper
25 is CI Reactive Blue 21.
6. The filtering element according to any of claims 1 to 5 further
comprising one or more layers of a hydrophilic material, preferably
a hydrophilic plastic and/or at least one layer of a heat deformable
fabric, in particular chosen from: polypropylene, polyester and
30 cellulose acetate.
7. The filtering element according to claim 1, wherein said at least one
layer of fabric (2) comprises polymeric fibers preferably selected
from the group consisting of: silicone, polypropylene, polyethylene,
nylon, latex, stainless steel, titanium and polytetrafluoroethylene,

and nanoparticles or fibers of silver and/or salt thereof, and/or nanoparticles or fibers of copper, zinc or natural coal.

8. The filtering element according to claim 7, wherein said polymeric fibers are made of polyethylene and said nanoparticles or said fibers of silver are made of colloidal silver.
9. The filtering element according to claim 7 or 8, wherein said nanoparticles and/or said fibers are in the form of coating.
10. The filtering element according to claim 9, wherein said coating is realized by elettroplating or by plasma/sputter coating.
11. The filtering element according to any one of claims 7-10, wherein the amount of said silver nanoparticles and/or natural coal ranges from 0.1 to 50 $\mu\text{g}/\text{cm}^2$, preferably from 1 to 35 $\mu\text{g}/\text{cm}^2$.
12. The filtering element according to claim 1, wherein said at least one layer of fabric (2) is an electrostatic fabric comprising polymeric fibers characterized by a permanent dipole and an additive, preferably an amine of fatty acids, capable of increasing the electrostatic capacity of said fibers as a function of the increasing of the heat.
13. The filtering element according to any one of claims 1-12, wherein said layer of fabric 2 is characterized by a retention rating ranging from 0.05 to 1.5 micron, preferably is of 0.07, 0.10, 0.20, 0.45, 0.70, 1 micron.
14. A smoke mouthpiece comprising a filtering element (1) according to any of claims 1-13.
15. The smoke mouthpiece according to claim 14 comprising at least one head body (5) and at least one central body (6), said head body (5) and central body (6) internally defining an internal conduit (C1, C2) of said mouthpiece (4) in which said filtering element (1) is arranged.
16. The smoke mouthpiece according to claim 15, wherein the head body 5 can be connected to the central body 6 through reversible connection means (9a, 10a), said reversible connection means (9a, 10a) preferably being press, click or screw operated.
17. The smoke mouthpiece according to claim 15 or 16, further

comprising a connection body (7) firmly applicable to a distal end (11) of the central body (6) opposite the head body (5), said connection body (7) being conformed so as to be firmly connectable to a free end of a pipe (T), preferably a pipe for a nargile.

5 18. The smoke mouthpiece according to any of claims 14-17, wherein the central body (6) can be connected to the connection body (7) by reversible connection means, said reversible connection means preferably being press, click or screw operated.

10 19. The smoke mouthpiece according to any of claims 14-18, wherein said at least one filtering element (1) is positioned between the head body (5) and the central body (6) and/or said at least one filtering element (1) is positioned between the central body (6) and the connection body (7).

15 20. An accessory device for a smoke mouthpiece comprising at least two end portions (14, 15) and at least one filtering element (1) according to any of claims 1-13, said filtering element (1) being contained between said end portions (14, 15), wherein said end portions (14, 15) can be firmly connected to each other and wherein said end portions have respective through conduits (16, 17)
20 communicating between each other with the interposition of said filtering element (1).

25 21. The accessory device according to claim 20, comprising an internally hollow spacing element (18) interposed between said end portions (14, 15) wherein between said spacing element (18) and each end portion (14, 15) at least one filtering element (1) is interposed.

30 22. Kit comprising at least one filtering element according to any one of claims 1-13, and/or at least one smoke mouthpiece according to any one of claims 14-19, and/or at least one accessory device according to claim 20 or 21.

23. Use of the filtering element according to any one of claims 1-13, and/or of the smoke mouthpiece according to any one of claims 14-19, and/or of the accessory device according to claim 20 or 21, and/or the kit according to claim 22 to smoke hookah.

24. Method for smoking hookah comprising the use of the filtering element according to any one of claims 1-13, and/or of the mouthpiece according to any one of claims 14-19, and/or of the accessory device according to claim 20 or 21, and/or of the kit according to claim 22.

25. The filtering element according to any one of claims 1-13, and/or the mouthpiece according to any one of claims 14-19, and/or the accessory device according to claim 20 or 21, and/or the kit according to claim 22 for use in the prevention of the transmission of a disease of the respiratory system caused by a pathogen or a carcinogen.

26. The filtering element, and/or the mouthpiece, and/or the accessory device, and/or the kit according to claim 25 wherein said pathogen is selected from: the influenza virus, in particular H1N1 virus, herpes simplex virus, adeno-associated virus, papilloma virus, hepatitis B virus, hepatitis C virus and HIV.

27. The filtering element, and/or the mouthpiece, and/or the accessory device, and/or the kit according to claim 25, wherein said substance is selected from carcinogenic polycyclic aromatic hydrocarbons.

Fig.1

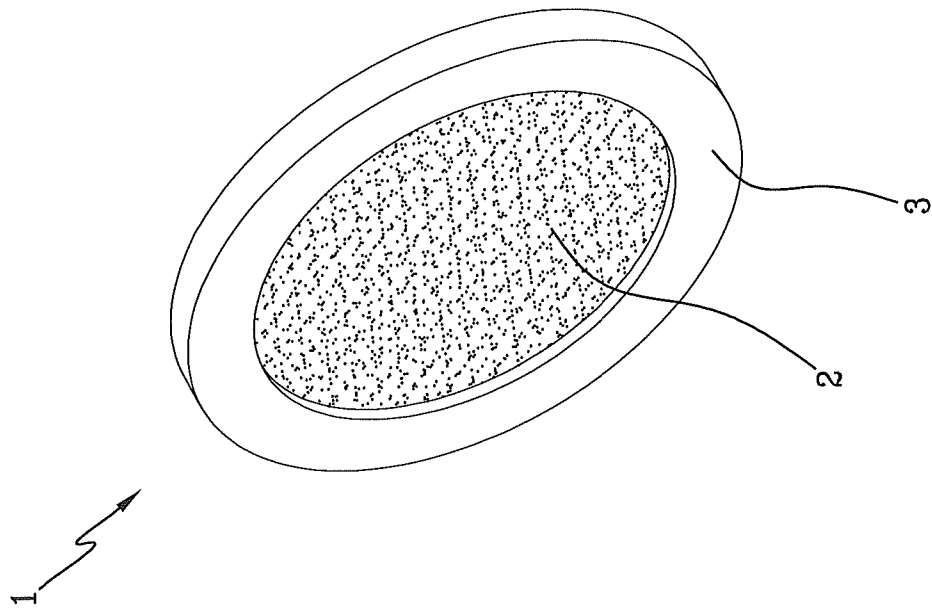


Fig.2

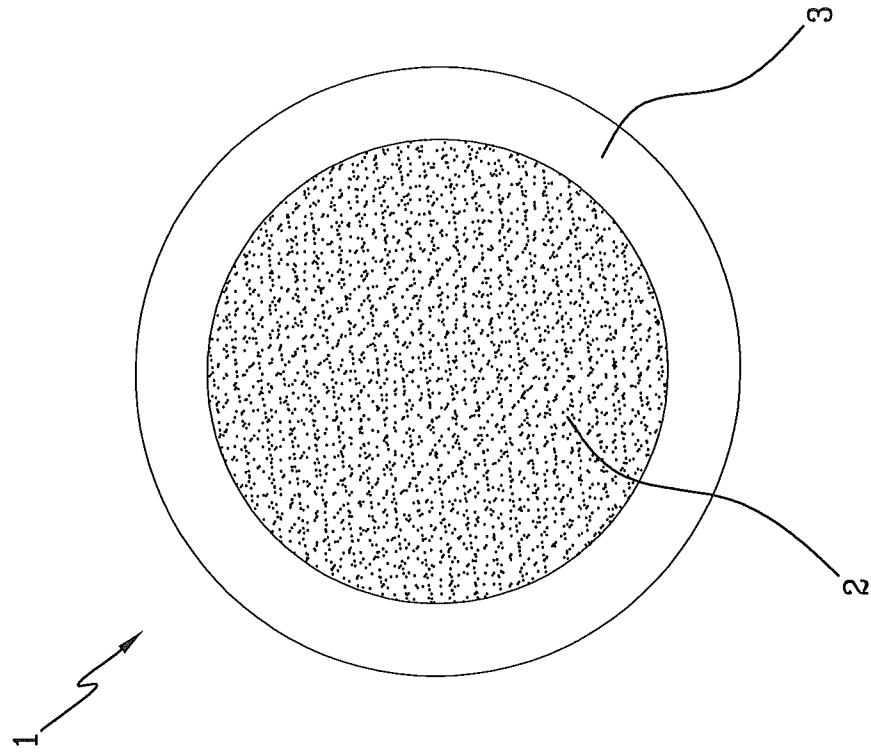
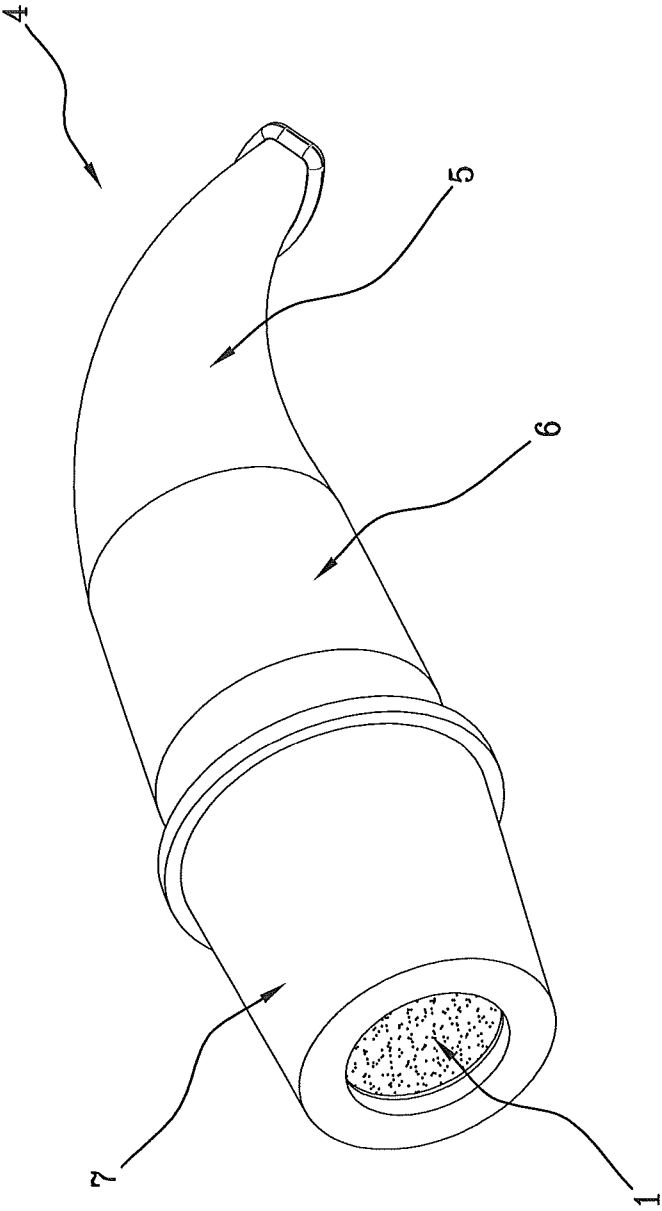


Fig.3



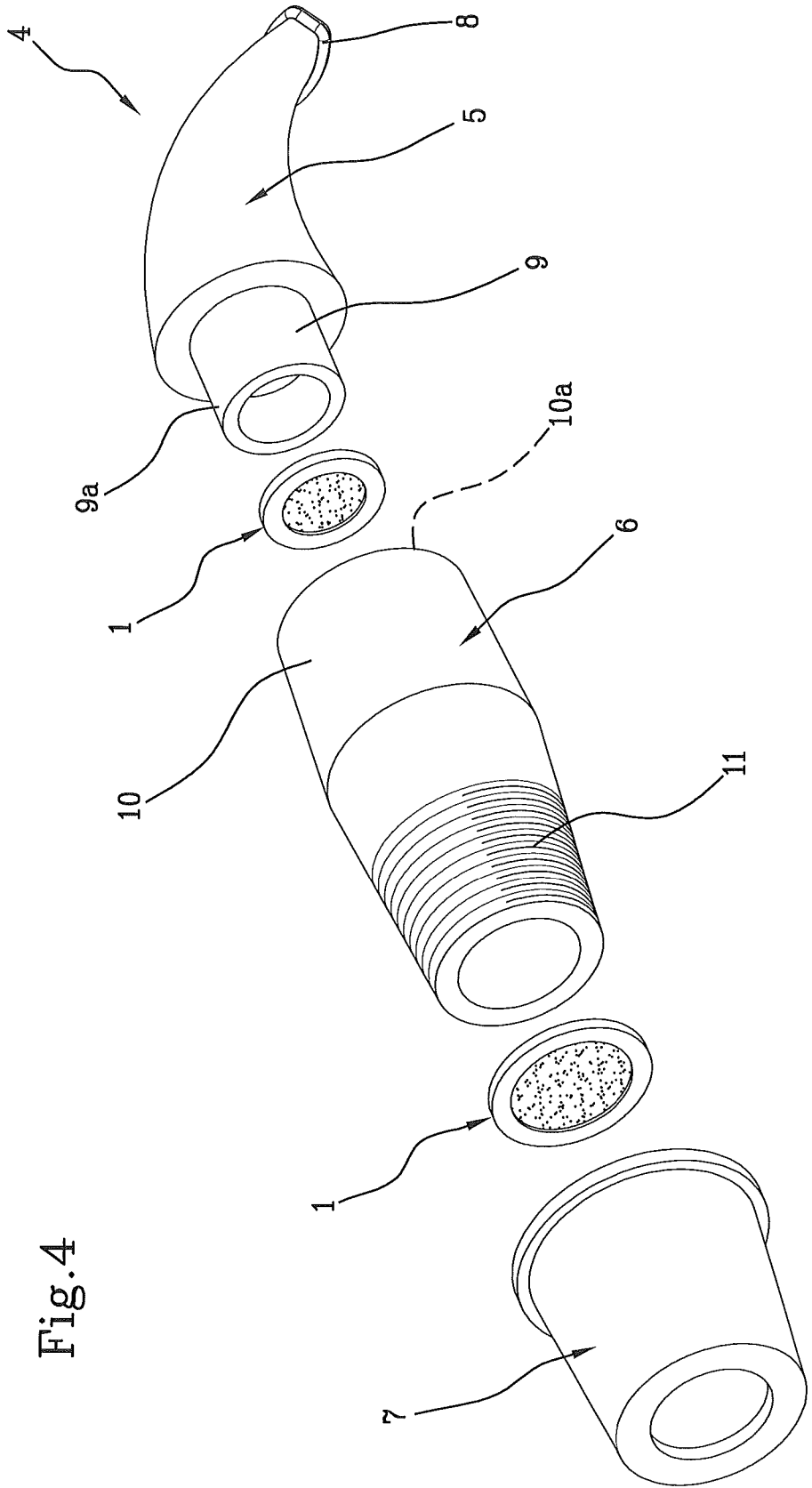
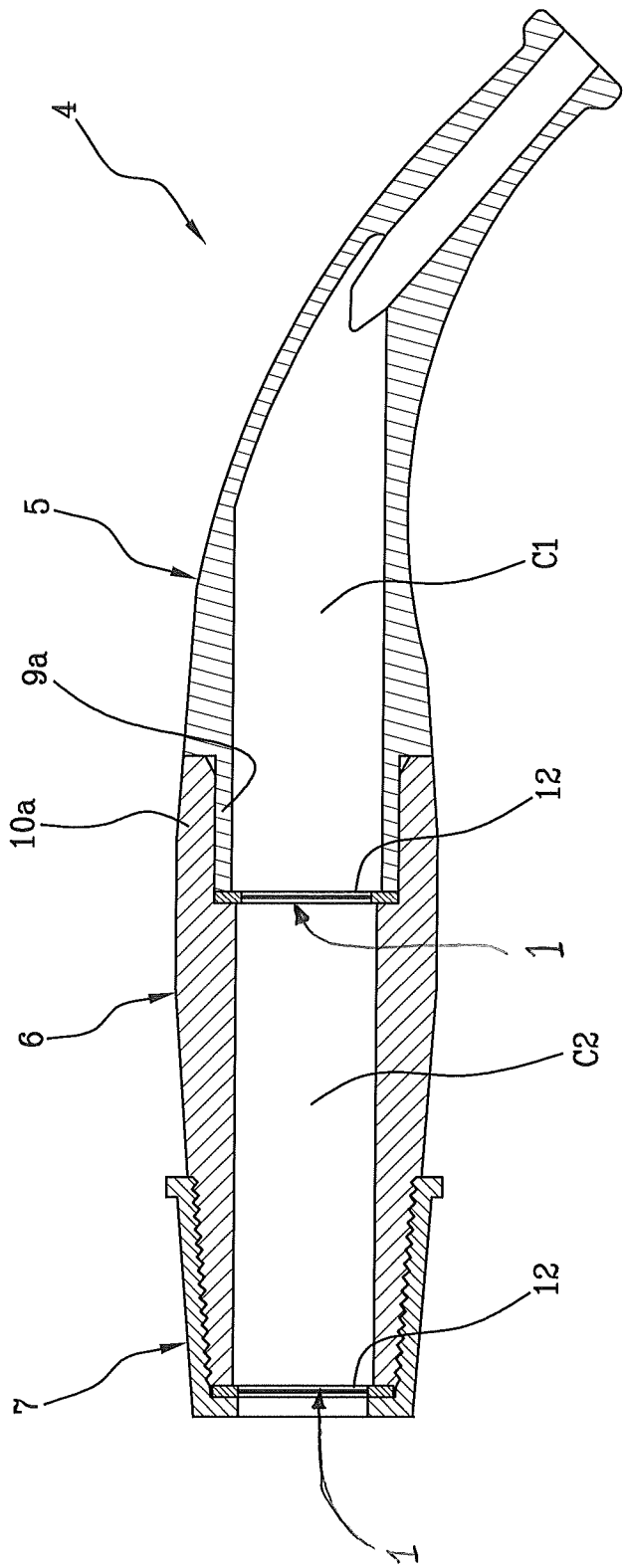


Fig.4

Fig.5



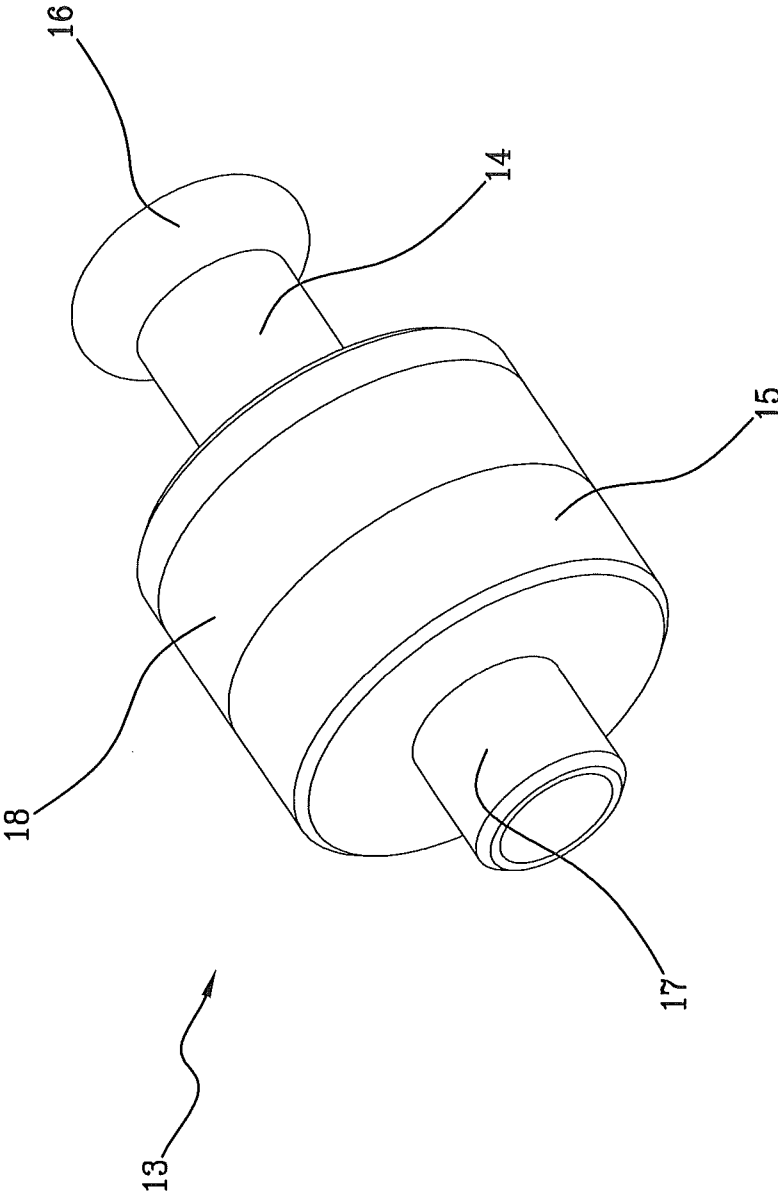


Fig. 6

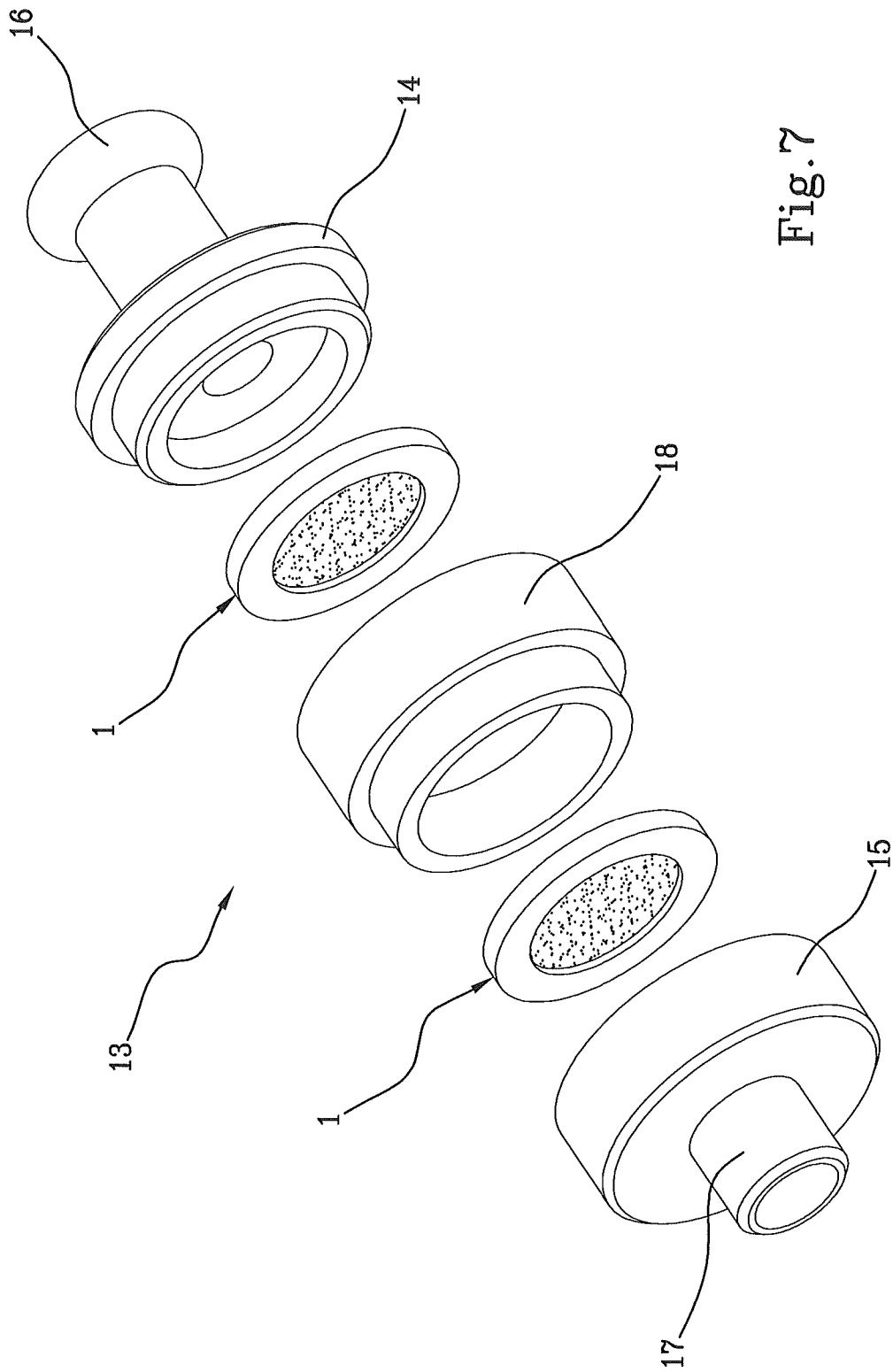


Fig. 7

Fig.8

