

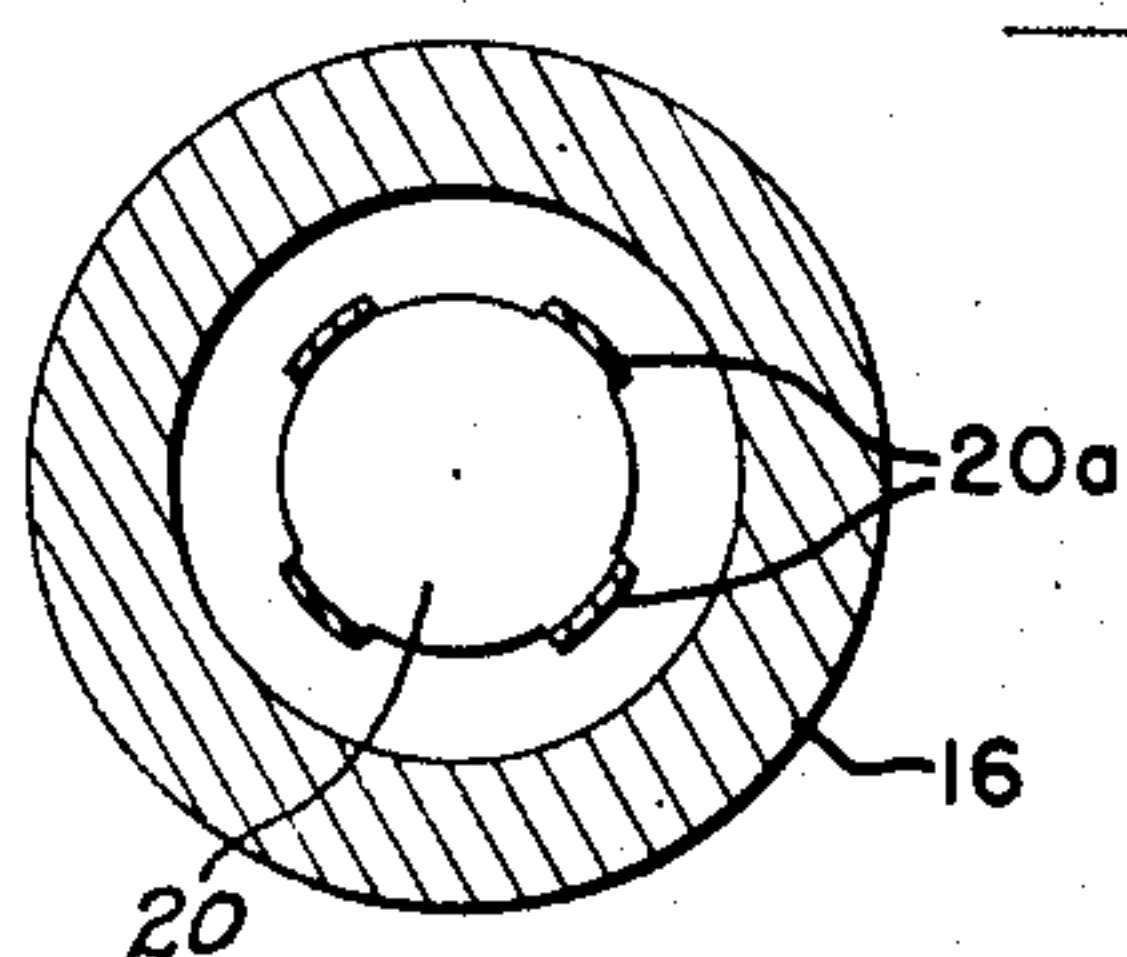
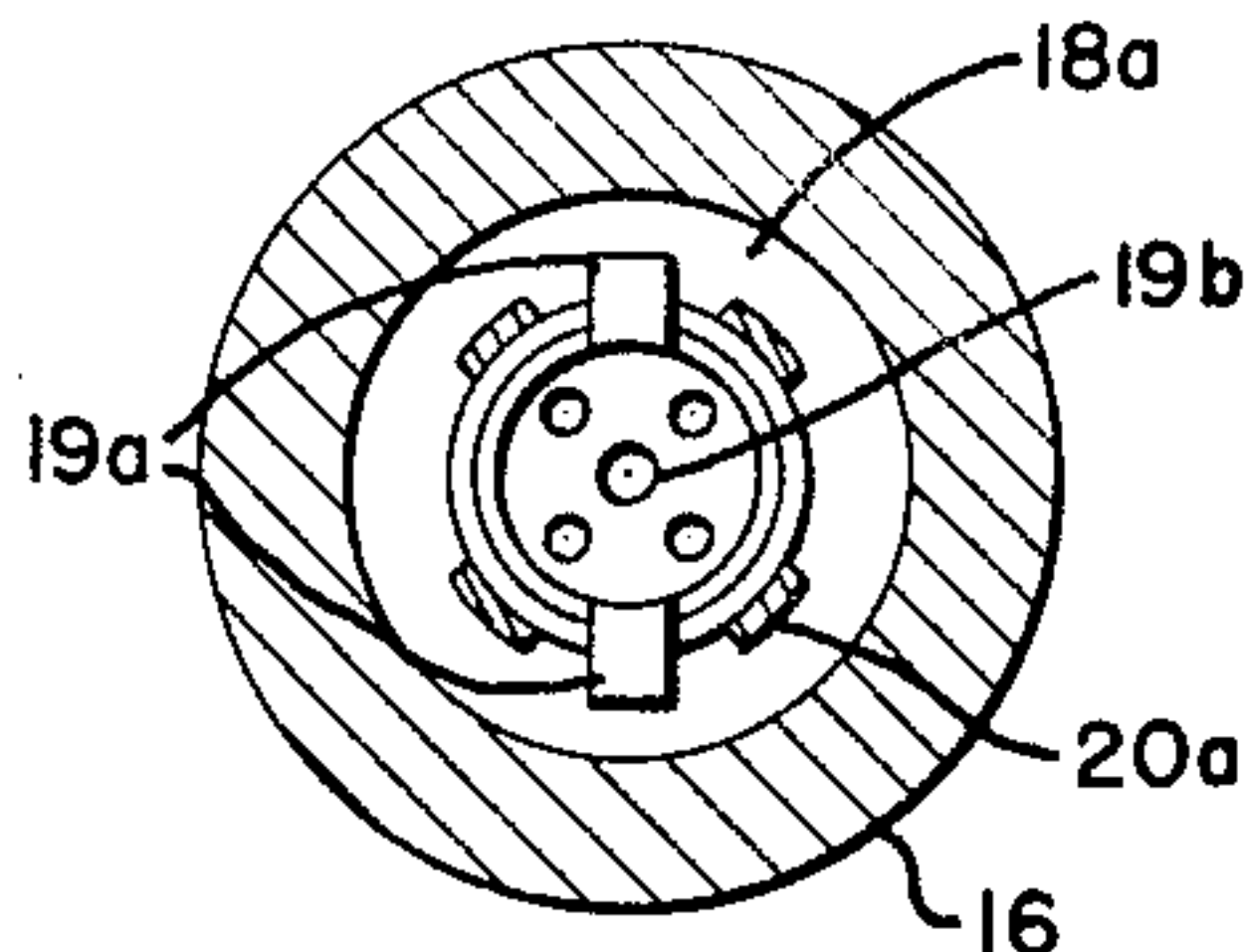
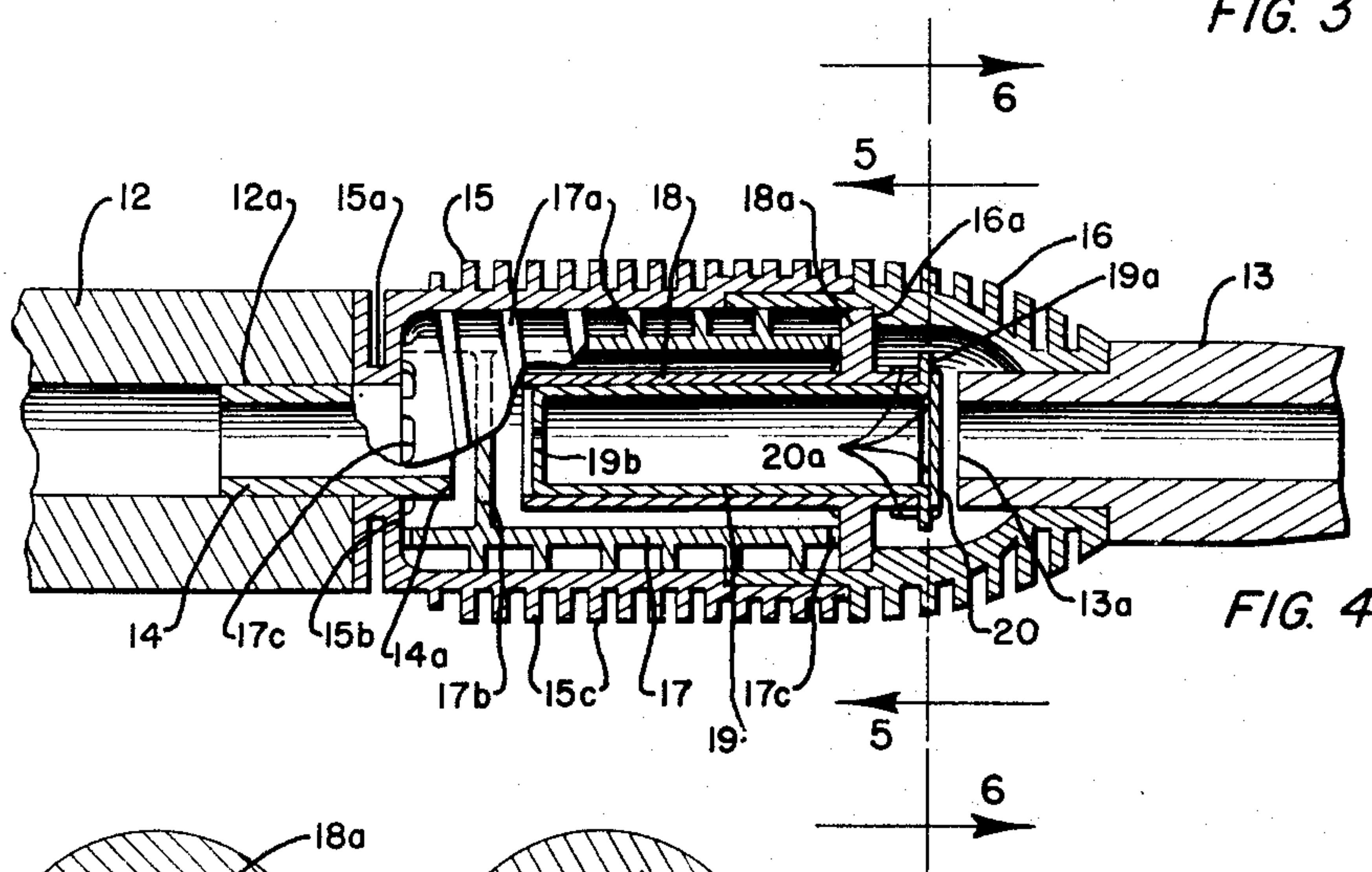
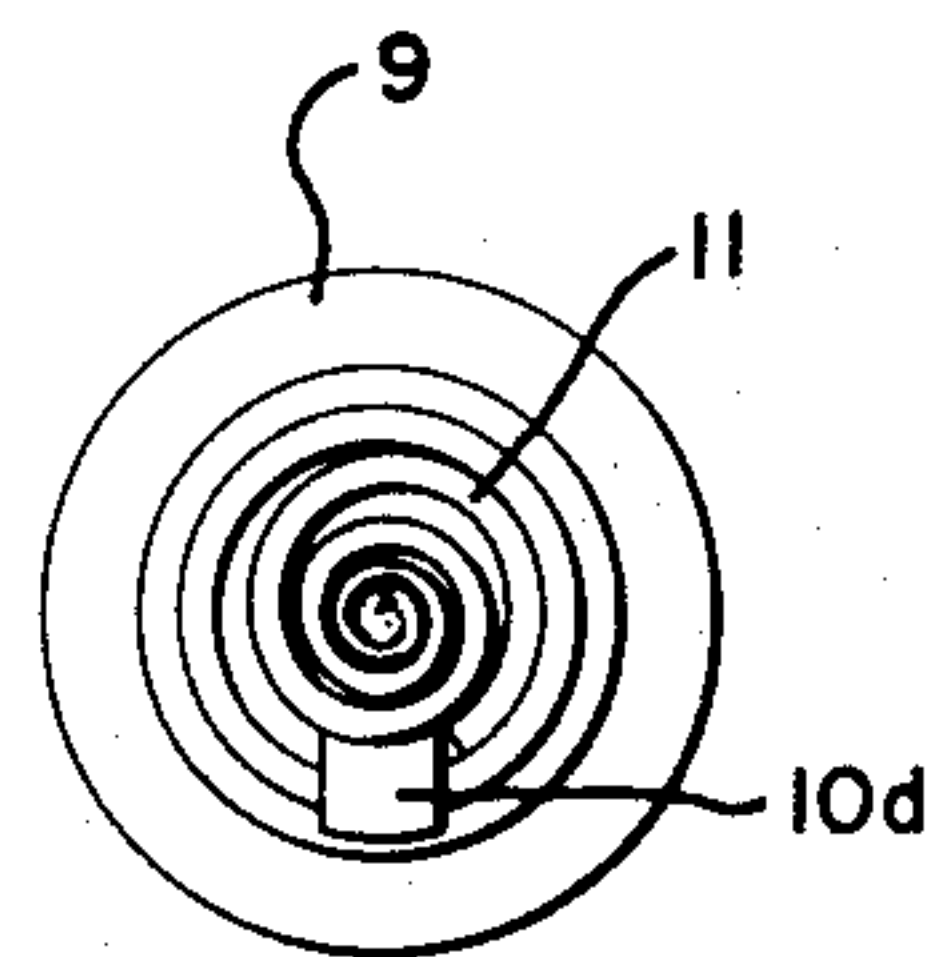
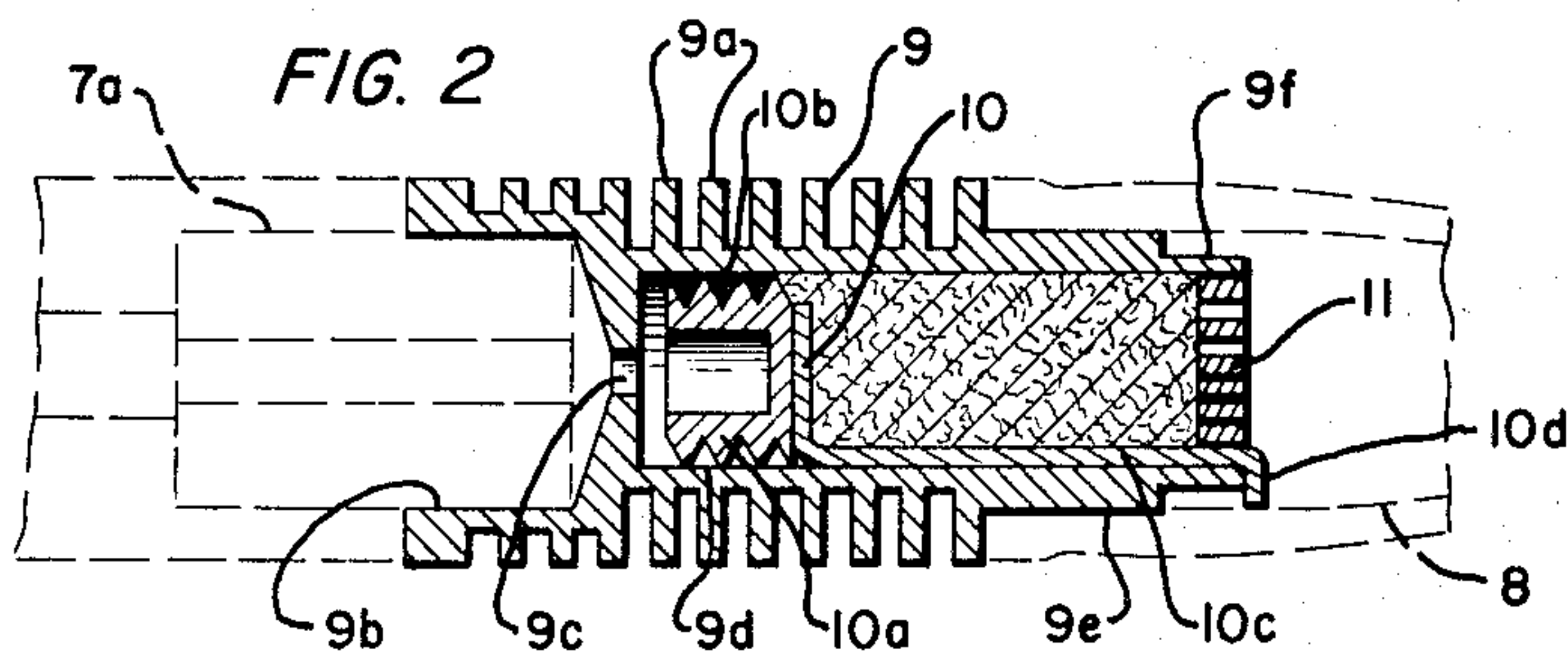
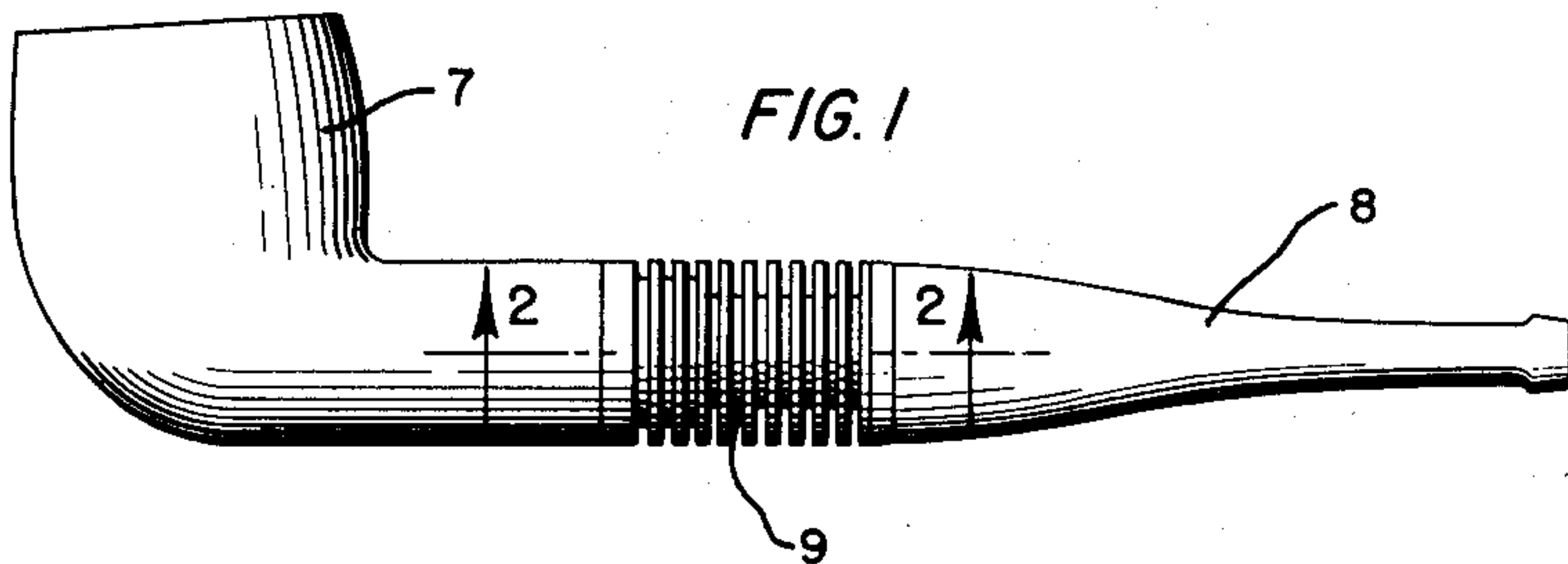
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2,628,622

SMOKING PIPE

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## UNITED STATES PATENT OFFICE

2,628,622

## SMOKING PIPE

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## 1 Claim. (Cl. 131—194)

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My invention relates to a smoking pipe, more particularly for use in smoking tobacco, and the objects of my invention are:

First, to provide a pipe of this class in which volatile fluids are cooled and condensed, and in which the smoke is further conditioned by passing through a filtering element providing a very cool, clean smoke;

Second, to provide a pipe of this class in which a heat exchanger casing provides preliminary controlling and condensation of the volatile fluids carried in the smoke whereafter the smoke is filtered through fresh, clean tobacco providing a smoke which is cool, filtered and flavored by fresh, clean tobacco;

Third, to provide a pipe of this class in which condensed liquid is trapped and prevented from flowing forwardly into the pipe bowl, and also in which saliva is trapped preventing the same from flowing backwardly through the stem and into the smoker's mouth;

Fourth, to provide a pipe of this class having heat exchanger means adapted to condense volatile fluids of the smoke into a liquid wherein said liquid is trapped and prevented from entering and damping the filtering tobacco through which the smoke passes subsequently to the cooling thereof;

Fifth, to provide a pipe of this class which may be constructed of conventional bowl and stem elements in connection with heat exchanger and tobacco containing casing members which are readily connected to said conventional bowl and stem elements;

Sixth, to provide a pipe of this class which may be readily cleaned without soiling the fingers of the operator;

Seventh, to provide a pipe of this class from which the used filtering tobacco is readily and easily removable;

Eighth, to provide a pipe of this class in which fresh, filtering tobacco is readily and easily placed; and

Ninth, to provide a pipe of this class which is very simple and economical of construction, efficient in operation and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claim. Reference is had to the accompanying drawings and to the characters of reference thereon forming a part of this application, in which:

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Figure 1 is a side elevational view of a form of my smoking pipe; Figure 2 is an enlarged longitudinal sectional view taken from the line 2—2 of Figure 1 showing the pipe bowl and stem elements by dash lines; Figure 3 is an end view of the structure shown in solid lines in Figure 2 of the drawings; Figure 4 is an enlarged longitudinal sectional view of a modified form of my smoking pipe showing portions in elevation to amplify the illustration and showing the filtering material omitted; Figure 5 is a transverse sectional view taken from the line 5—5 of Figure 4 and showing the filtering material omitted; and, Figure 6 is a transverse sectional view taken from the line 6—6 of Figure 4.

Similar characters of reference refer to similar parts and portions throughout the several views of the drawing.

In the structure as disclosed in Figures 1 to 3 inclusive of the drawings, the parts are designated as follows:

The bowl 7, stem 8, heat exchanger casing 9, basket 10 and the cover 11.

The heat exchanger casing 9 is secured in connection with the conventional bowl member 7 and conventional stem 8 and interconnects the same as shown in Figure 1 of the drawings. This heat exchanger casing 9 is provided with external annular heat exchanger fins 9a on the outer side thereof, as shown best in Figure 2 of the drawings. The forward end of this heat exchanger casing 9 is provided with a female connection portion 9b arranged to engage the conventional adapter 7a in connection with the bowl 7. The forward end of the heat exchanger casing 9 is provided with a restricted opening or orifice 9c communicating with an enlarged hollow cylindrical bore portion 9d in which is positioned the basket 10. The opposite end of the heat exchanger casing 9 is provided with a male adapter portion 9e and a reduced diameter portion 9f contiguous therewith arranged to provide a saliva trap within the stem 8, all as shown best in Figure 2 of the drawing. The basket 10 is provided with an internal heat exchanger portion 10a forming the bottom of the basket which is provided with a helically threaded portion 10b communicating with the orifice 9c in the forward end of the heat exchanger casing 9. This helically screw threaded portion 10b provides an elongated circumferential fluid passage adjacent the fins 9a of the heat exchanger casing 9, as shown best in Figure 2 of the drawings. Connected to this end 10a of the basket 10 is an extending strap 10c having an angularly dis-



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posed end portion 10d engaging the extending end of the heat exchanger casing 9. The cover 11 is spiral in form, as shown in Figure 3 of the drawings and is preferably made of flat resilient material. This cover 11 is frictionally engaged on the inner side of the heat exchanger casing 9 at its extended end, and serves as a retainer for tobacco in the heat exchanger casing 9, all as shown best in Figure 2 of the drawings.

The operation of my smoking pipe as shown in Figures 1 to 3 inclusive of the drawings is substantially as follows:

When the smoker draws smoke through the heat exchanger casing 9, the smoke first passes through the orifice 9c whereupon condensation of the volatile fluids begins. Then the smoke passes around the helically threaded portion of the basket 10 at the screw threads 10b thereof whereupon further condensation takes place as a result of the heat exchange provided by the fins 9a. After the smoke passes to the end of the screw threaded portion 10b it passes through fresh clean tobacco and is filtered therethrough toward the cover 11, through which it passes to the stem 8 and the mouth of the smoker. When removing the used filtering tobacco from the heat exchanger casing 9 the angularly disposed handle portion 10d is grasped and the basket 10 is removed from the heat exchanger casing 9 carrying with it the used tobacco and the cover 11. The helical threads 10b are readily wiped off and may be positioned in the heat exchanger casing 9 after the heat exchanger casing 9 is wiped out. Fresh tobacco is then inserted in the heat exchanger casing 9, and the cover 11 is placed in position as shown best in Figure 2 of the drawings. The pipe is then ready to be used again. It will be noted that condensation in the heat exchanger casing 9 is prevented from passing through the small orifice 9c forwardly into the pipe bowl 7, and that the reduced diameter trap portion 9f prevents saliva from passing from the stem 8 into the tobacco in the heat exchanger casing 9.

In the modification as shown in Figure 4 to 6 inclusive of the drawings, the parts are designated as follows:

The bowl shank member 12, stem member 13, adapter 14, heat exchanger casings 15 and 16, internal heat exchanger 17, filter casing 18, basket 19, and the cover 20.

The bowl shank member 12 and stem 13 are substantially conventional in form. Secured in connection with the bowl shank member 12 is the substantially conventional adapter 14 which extends into the bore 12a of the bowl shank member 12 at one end, and into the heat exchanger casing 15 at its other end, it being noted that the adapter 14 extends a considerable distance inwardly of the heat exchanger casing 15 at its end portion 14a. The forward end of the heat exchanger casing 15 is provided with a fairly deep annular groove 15a arranged to provide a heat exchanging surface adjacent the front wall 15b thereof. The outer side of this heat exchanger casing 15 is provided with circumferential heat exchanger fins 15c, and the opposite end of the heat exchanger casing 15 is connected in telescopic relation with the heat exchanger casing 16. The stem 13 extends inwardly of the heat exchanger casing 16 providing a saliva trap in the heat exchanger casing 16 rearwardly of the end 13a of said stem 13. Also the large diameter of the heat exchanger casing 16 provides for a saliva trapping reservoir around the

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outer side of the stem 13 adjacent its end portion 13a. The internal heat exchanger 17 is provided with external helical threaded portions 17a defining a relatively long helical passage at the inner side wall of the heat exchanger casing 15 adjacent the heat exchanger fins 15c thereof. This internal heat exchanger 17 is provided with an enclosing partition 17b near the end 14a of the adapter 14. The internal heat exchanger 17 is a hollow cylindrical member at both sides of the partition 17b, and opposite ends of this internal heat exchanger 17 are provided with notched portions 17c through which smoke passes adjacent the heat exchanger wall 15b of the heat exchanger casing 15, and the flange 18a of the filter casing 18. The filter casing 18 is a hollow cylindrical member and is supported intermediate the internal heat exchanger 17 and the internal annular shoulder 16a of the heat exchanger casing 16 by the flange portion 18a integral with said filter casing 18. The filter casing 18 extends near to the partition 17b of the internal heat exchanger 17 and is arranged to contain tobacco or other suitable material, not shown, therein for filtering smoke passing through said filter casing 18. The basket 19 is provided with a perforated end 19b. However, the basket is cup-shaped or tubular and is inserted in the filter casing 18, as shown in Figure 4, and fresh clean tobacco is placed in the basket 19 between the angularly extending portions 19a whereby the basket is filled from the end adjacent 19a to the open end of the filter casing 18. The cover 20 is a substantially disc shaped member provided with a plurality of tabs 20a frictionally engaged with the outer side of the filter casing 18 near the flange 18a thereof. It will be noted that these tabs 20a are disposed substantially 90° apart and straddle the angularly disposed end portions 19a of the basket 19 as shown best in Figure 5 of the drawings.

The operation of the modification as shown in Figures 4 to 6 inclusive of the drawings is substantially as follows:

When the smoker draws smoke through the bowl shank member 12, it passes backwardly through the adapter 14 to the end portion 14a thereof and impinges on the partition 17b of the internal heat exchanger 17. The smoke then passes adjacent the wall 15b of the heat exchanger casing 15 through the notched portions 17c in the end of the internal heat exchanger 17. At this point considerable condensation takes place, and the condensed liquid is trapped in the heat exchanger casing 15, and is prevented from returning into the bowl shank member 12 by means of the extension of the adapter 14 in the heat exchanger casing 15. After passing through the notched portions 17c the smoke progresses around the spiral passage defined by the spiral screw threads 17a adjacent the wall of the heat exchanger casing 15 on the outer side of which the fins 15c dissipate the heat to the atmosphere, thus condensation of the volatile fluids is accomplished intermediate the internal heat exchanger 17 and the heat exchanger casing 15, whereupon liquid drains to the lower side of the heat exchanger casing 15 and is maintained therein intermediate the wall 15b and the flange 18a of the filter casing 18 which is considerably smaller in diameter than the internal heat exchanger 17.

After the smoke has completed its travel in the spiral passage defined by the helical screw threads 17a, it passes through the notched por-



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tions 17c adjacent the flange 18a of the filter casing 18. Then the smoke progresses on the outer side of the filter casing 18 toward the partition 17b, whereupon it enters the perforated end of the basket 19 and passes through tobacco therein (not shown) toward the cover 20. The smoke then passes through the spaces provided between the end of the filter casing 18 and the cover 20 between the tabs 20a. After passing around the cover 20, the smoke is then drawn backwardly through the stem 13 to the smoker's mouth. Saliva passing through the stem 13 into the heat exchanger casing 16 is trapped therein and prevented from flowing backwardly into the smoker's mouth through the stem 13. When it is desired to clean the pipe and change the filtering tobacco, the operator proceeds as follows:

The heat exchanger casings 15 and 16 are separated from their telescopic connective relation with each other and the internal heat exchanger 17 together with the filter casing 18, basket 19 and cover 20 are removed permitting the operator to wipe the condensation out of the heat exchanger casings 15 and 16 and from the internal heat exchanger 17. The basket 19 is removed from the filter casing 18 by grasping the portions 19a with the fingers and longitudinally sliding the tobacco (not shown) out of the filter casing 18 engaged by the perforate end portion 19b of the basket 19. The cover 20 is removed in the same operation. When the basket 19 is replaced in the filter casing 18, tobacco is inserted therein and the cover 20 is placed in position as shown in Figures 4 and 5 of the drawings. The pipe is again assembled as shown in Figure 4 of the drawings ready for use.

Though I have shown and described a particular constructional combination and arrangement of parts and portions and a certain modification, I do not wish to be limited to the particular construction, combination and arrangement, nor to the modification, but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claim.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

In a smoking pipe of the class described, the combination of a bowl shank member and a stem member, heat exchanger casings connected together in telescopic relationship and interconnecting said stem member and said bowl shank member, an internal heat exchanger member in

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said heat exchanger casings having a partition therein and hollow cylindrical portions extending at opposite sides of said partition longitudinally of said heat exchanger casings, said internal heat exchanger member having externally helically disposed screw threaded portions adjacent the walls of said heat exchanger casings, one of said heat exchanger casings having a smoke inlet portion at one side of the partition of said internal heat exchanger member, a filter casing having an open end positioned in said internal heat exchanger member at the opposite side of said partition, a basket in said filter casing having a vented end and an open end adapted to contain filtering tobacco therein, and a cover for said filter casing at the open end thereof near the open end of said basket, opposite ends of said internal heat exchanger member having notched portions therein communicating with the helical passage defined by said helically screw threaded portions, said filter casing extending inwardly of said internal heat exchanger member, and said filter casing having an external annular flange arranged to support the same in concentric relation with the interior of said internal heat exchanger member.

ROBERT LEQUEUX SMITH.

#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
710,740	Berninger	Oct. 7, 1902
736,757	Martin	Aug. 18, 1903
976,936	Schulte	Nov. 29, 1910
1,005,067	Penney	Oct. 3, 1911
1,260,460	Schubert	Mar. 26, 1918
1,868,469	Broadway	July 19, 1932
1,915,414	Foley	June 27, 1933
2,116,951	McClune	May 10, 1938
2,207,849	Blum	July 16, 1940
2,243,091	Eguchi	May 27, 1941
2,357,018	Miller	Aug. 29, 1944
2,397,294	Schultz	Mar. 26, 1946
2,426,542	Wilson	Aug. 26, 1947

#### FOREIGN PATENTS

Number	Country	Date
367,684	Great Britain	Feb. 25, 1932
663,887	France	Apr. 15, 1929