

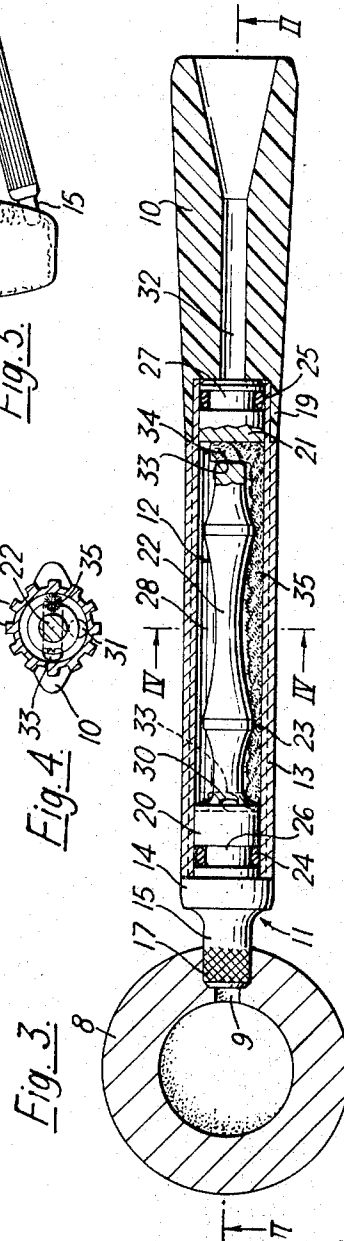
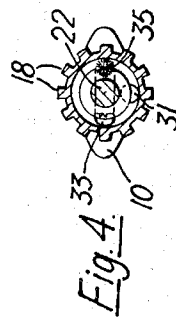
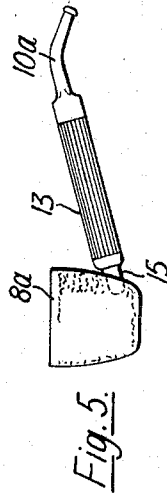
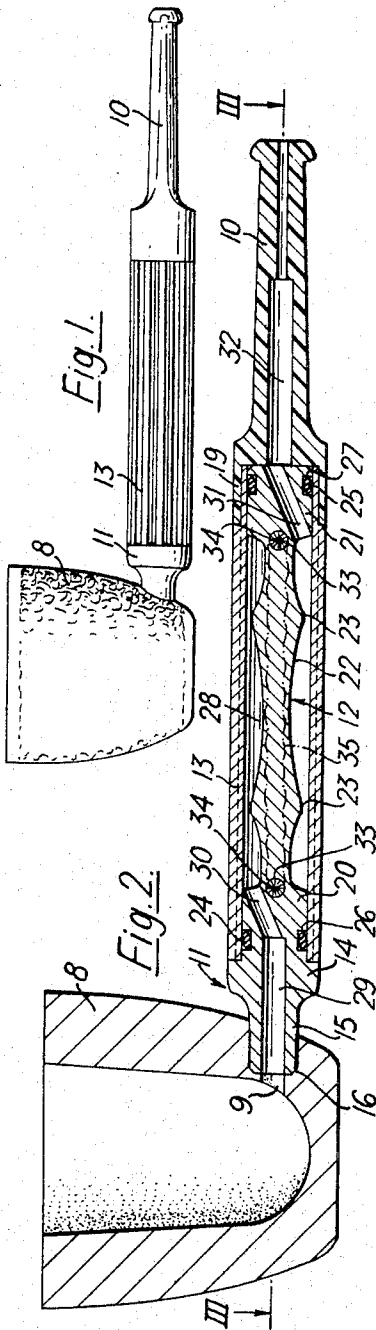
Nov. 7, 1967

H. LOWENTHAL
SMOKERS' UTENSILS

3,351,067

Filed April 12, 1965

2 Sheets-Sheet 1



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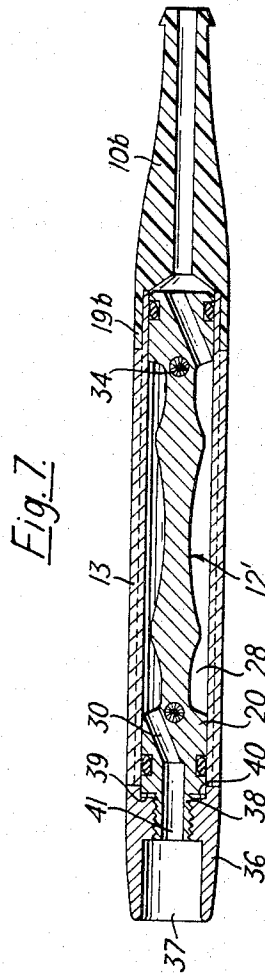
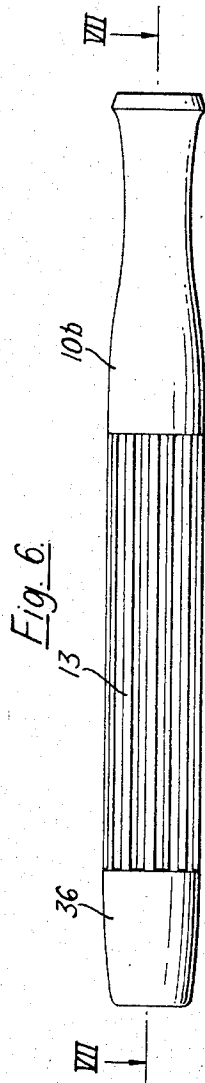
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1

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SMOKERS' UTENSILS

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ABSTRACT OF THE DISCLOSURE

A stem for a smoking device comprising an outer tubular member and an inner member extending axially within and spaced from the inner wall of the tube, together with an elongated absorbent cleaner extending longitudinally between the members and having bent ends seated in transverse holes in the inner member.

This invention relates to smokers' utensils, such as pipes and cigarettes or cigar holders, of the kind having a stem which includes a tubular metal part forming a smoke cooling chamber and an assembly which fits into the tubular metal part and has two ducts formed in it. One duct leads from the part of the utensil upstream of the cooling chamber, that is from the bowl of the pipe or the end of a holder in which the cigarette or cigar is to be held, into the chamber formed within the tubular metal part and the second duct leads from this chamber to the mouthpiece. Besides forming a smoke cooling chamber, the inside of the tubular metal part also acts as a sump in which some moisture and tarry products from the smoke are deposited. It is difficult to clean the tubular metal part with the ordinary kind of pipe cleaner as it is of appreciable diameter.

According to this invention, we provide a smokers' utensil of the kind described with an elongated absorbent cleaner which is carried by the internal assembly and which extends along the assembly within an annular clearance between this assembly and the internal wall of the tubular metal part and lies in contact with the wall.

With this arrangement much of the moisture is absorbed by the cleaner during smoking and when it is desired to clean the cooling chamber formed within the tubular metal part, if the inside of the tubular metal part is cylindrical, the assembly is rotated so that the elongated absorbent cleaner sweeps round and over the inside wall of the tubular metal part and the assembly and cleaner is then withdrawn from the tubular metal part so that the cleaner may be replaced by a new one.

The elongated cleaner may be fixed to the internal assembly by metal clips, it may be fixed at one end only in a hole in the internal assembly, but preferably the internal assembly is provided with a transverse hole at each end and the elongated cleaner has each of its ends bent at an angle to the remainder of its length and these bent portions fit in the two holes in the internal assembly. The cleaner is then held in place by the surrounding tubular metal part.

If the internal assembly is fitted at its inner end with a piston which scrapes the inner wall of the tubular metal part when the assembly is withdrawn, the tubular metal part will be subjected to the two separate cleaning actions, one of which wipes it circumferentially round and round and the other, brought about by the piston, scrapes it longitudinally.

When the internal assembly is a piston assembly fitted with a piston at its inner end, in order to improve the scraping effect of the piston when the assembly is with-

2

drawn from the tubular metal part, the piston may be provided with a peripheral groove holding an O-ring which fits tightly inside the tubular metal part and both acts as a seal between this part and the piston assembly during normal use and acts as a scraper to clean the inside of the tubular metal part when the piston assembly is drawn out of the tubular metal part.

The O-ring can easily be removed from its groove and a new one can be fitted very simply if at any time the seal becomes impaired or the scraping action of the piston assembly ceases to be effective.

The piston assembly may be provided with pistons having peripheral grooves holding O-rings at both ends to seal both ends to the smoke cooling chamber within the tubular metal part during normal use. The or each O-ring is preferably made of silicone rubber but it may be made of any other similar resilient material which is impervious to nicotine, is nontoxic and can withstand temperatures of up to about 180° F.

Previously in smokers' utensils of the kind described having an internal piston assembly, the assembly has been fixed to the mouthpiece and the tubular metal part of the stem has been fixed to the part of the utensil of the cooling chamber, that is the pipe bowl when the utensil is a pipe, so that the piston assembly is withdrawn from the tubular metal part when the mouthpiece is removed. With this arrangement there is inevitably a space within the tubular metal part between the part of the utensil upstream of the cooling chamber and the innermost end of the piston when the mouthpiece is pushed into place. Smoke flows through this space on its passage to the duct in the piston which leads into the cooling chamber and therefore tarry deposits are left in this space when the assembly is withdrawn and, being at the very inner end of the tubular metal part of the stem, it is very difficult to clean this space out at all.

Preferably therefore, in accordance with a further feature of the invention, the tubular metal part is fixed to the mouthpiece of the device and the piston assembly is fixed to a part of the device upstream of the cooling chamber. In this way the difficulty of cleaning the space inside the upstream end of the tubular metal part is avoided.

In previous utensils of the kind described, the ducts form the ends of the internal assembly extend right through to points near the centre of the cooling chamber. This has meant that although the chamber acts efficiently as a trap for tarry material and moisture, the smoke does not flow as far through it and there is not therefore so much cooling effect. Preferably therefore the smoke inlet and outlet ducts through the assembly are formed the one in one end and the other end of the assembly so that in use smoke has to flow from one duct to the other along substantially the whole length of the cooling chamber formed within the tubular metal part. To ensure that the flow takes place around the whole periphery of the tubular metal part so that there is maximum contact with the walls of the tubular metal part to promote a satisfactory cooling effect, one or more baffles may be provided along the length of the internal assembly. These baffles which may be a number of annular bulges leave only a narrow annular clearance between their radially outermost portions and the inner surface of the tubular metal part, through which the smoke has to pass as it flows from one duct to the other. The absorbent cleaner also passes through this narrow clearance and is held by the bulges or other baffles firmly against the inner wall of the tubular metal part.

Two modifications of a pipe and a cigarette holder constructed in accordance with the present invention are illustrated by way of example in the accompanying drawings in which:

3

FIGURE 1 is a side elevation of one pipe;

FIGURE 2 is a central vertical section through the pipe but on a larger scale and taken on the line II—II in FIGURE 3;

FIGURE 3 is a section taken on the line III—III in FIGURE 2;

FIGURE 4 is a section taken on the line IV—IV in FIGURE 3;

FIGURE 5 is a side elevation of a pipe similar to that shown in FIGURE 1 but on a smaller scale and having a bent stem;

FIGURE 6 is a side elevation of a cigarette holder; and

FIGURE 7 is a section taken on the line VII—VII in FIGURE 6.

The pipe shown in FIGURES 1 to 4 has a bowl 8 made by a turning operation out of a brier root and has a countersunk hole 9 through the bottom of its side wall communicating with the bottom of the inside of the bowl. A mouthpiece 10 made of vulcanite or black plastic material is connected to the bowl 8 by a stem which is formed in two parts. One part consists of a metal adaptor piece 11 which is formed integrally with a piston assembly 12 as an anodised aluminium turning. The other part consists of an extruded aluminium tubular steel part 13 having an external diameter of 0.45 inch.

The adaptor piece 11 comprises a larger diameter portion 14 which is flush with the outside of the tubular metal part 13 and a smaller diameter spigot 15 which has an external diameter of 0.25 inch and is secured in the enlarged entrance to the hole 9 in the side wall of the bowl 8. The tip 16 of the spigot is chamfered and its external surface 17 is knurled and the spigot 15 is secured in position by forcing it axially into the hole, which is initially four or five thousandths of an inch undersize with the interposition of an epoxy resin adhesive between the knurled surface 17 and the inner wall of the hole.

During its extrusion the tubular metal part 13 is formed on its external surface with a number of axially extending parallel fins 18 which both act to increase the external surface area of the part 13 and enhance the appearance of the pipe stem. The appearance is further improved if the radially outwardly facing surfaces of the fins 18 are coloured silver or gold in contrast to the grooves between the fins 18 which may then be black. The fins 18 do not extend fully to the mouthpiece end of the tubular metal part 13 and at that end the tubular metal part 13 is secured as a force fit within an annular flange 19 at the end of the mouthpiece 10. The outer cylindrical surface of the flange 19 is flush with the outer surfaces of the fins 18.

The piston assembly 12 comprises two pistons 20 and 21 which are situated one at each end and which are interconnected by a piston rod 22 formed with two annular bulges 23. The pistons 20 and 21 have a very small clearance within the inner cylindrical surface of the tubular metal part 13 and this clearance is taken up by silicon rubber O-sealing rings 24 and 25 of normally circular section which rest in annular grooves 26 and 27 in the pistons 20 and 21 respectively. The sealing rings 24 and 25 seal the ends of a smoke cooling chamber 28 formed within the tubular metal part 13 in the annular space around the piston rod 22 and also frictionally engage with the inner surface of the tubular metal part 13 sufficiently to hold the piston assembly 12 assembled within the tubular metal part 13. Since the piston assembly 12 is secured together with the adaptor piece 11 to the bowl 8, and the tubular metal part 13 is secured to the flange 19 at the mouthpiece 10, when the mouthpiece 10 and bowl 8 are pulled apart from one another, the piston assembly 12 slides out of the tubular metal part 13. As this happens the piston 21 assisted by the scraping action of the sealing ring 25 sweeps out of the tubular metal part any deposits adhering to the inner wall of the part 13. The sealing rings 24 and 25 can very easily be

4

replaced by new ones should they become worn so that the cleaning action of the piston 21 is not impaired irreparably after considerable use.

The entrance to the smoke cooling chamber 28 is through the hole 9 in the side wall of the bowl 8 and through an inlet duct consisting of a coaxial passageway 29 in the adaptor piece 11 and an inclined passageway 30 leading into the top of the chamber 28 through the piston 20. The exit from the smoke cooling chamber 28 is through an outlet duct consisting of an inclined passageway 31 leading from the bottom of the chamber 28 to a central passageway 32 in the mouthpiece 10.

When the pipe is smoked and smoke is drawn from within the bowl 8 through the stem and mouthpiece 10 into the smoker's mouth, the smoke enters the cooling chamber 28 through the inlet duct and the annular bulges 23 act as baffles and deflect the smoke outwards into contact with the wall of the tubular metal part 13 with consequent cooling since the outer surface of the part 13 is exposed to the ambient temperature and the tubular metal part is a good conductor of heat. Contact between the smoke and the inner surface of the tubular metal part 13 is additionally promoted because the smoke has to flow from the top of the chamber 28 to the bottom before it can reach the outlet duct.

At the junctions between the pistons 20 and 21 and the piston rod 22 the piston assembly 12 is formed with two transversely extending holes 33 which receive the bent ends 34 of a pipe cleaner of the conventional type consisting of wire base to which woolly material is fixed. The two end portions 34 are bent at right angles to the main portion 35 of the cleaner which extends parallel to the axis of the stem and is held in contact with the inner surface of the tubular metal part 13 by the annular bulges 23. Any moisture which accumulates in the chamber 28 originating either from the bowl 8 or the mouthpiece 10 of the pipe will be soaked up by the body 35 of the cleaner as the pipe is tilted to and fro in use.

The cleaner serves an additional purpose however and if the mouthpiece 10 together with the tubular metal part 13 is rotated relatively to the bowl 8 and piston assembly 12 before the piston assembly is withdrawn from the tubular metal part 13 the body 35 of the cleaner will sweep around the chamber 28 and clean off from the inner surface of the tubular metal part 13 substantially all the moisture, tar and other deposits which has accumulated in the chamber 28 during smoking. This materially reduces the scraping action which the piston 21 and sealing ring 25 are called upon to carry out. When the cleaner is saturated, the body 35 is simply withdrawn laterally away from the piston assembly so that the end portions 34 are drawn out of the transverse holes 33 and the cleaner is replaced with a new one.

The pipe shown in FIGURE 5 is identical to that shown in FIGURES 1 to 4 except that its mouthpiece 10a is bent and to allow for the consequent angle which the tubular metal part 13 makes with the upright axis at the bowl 8a of the pipe, the hole in the side wall of the bowl 8a is inclined less than 90° to the upright axis of the bowl so that it receives the spigot of the adaptor piece coaxially.

The cigarette holder illustrated in FIGURES 6 and 7 has an end piece 36 with a recess 37 for receiving frictionally the end of a cigarette, and a mouthpiece 10b which, except for its shape, is similar to the pipe mouthpiece 10. The stem of the cigarette holder is also almost identical to the stem of the pipes shown in FIGURES 1 to 5 and includes a tubular metal part 13 secured to the mouthpiece 10b and the piston assembly 12'. The only differences from the stem of the pipes is that instead of being formed integrally with a metal adaptor piece, it has an externally screw-threaded coaxial spigot 38 which screws into a tapped opening in the end piece 36 with the interposition of a sealing washer 39 between the end of the piston 20 and a shoulder 40 on the end piece 36. The inlet duct to the smoke cooling chamber 28 is again formed by

5

an inclined passageway 30 this time in conjunction with a co-axial passageway 41 in the spigot 38 leading into the recess 37.

Similarly to the pipe stem the outer surface of the end portion 36 is flush with the outer surface of the tubular metal part 13 which is in turn flush with the outer surface of a flange 19b on the mouthpiece 10b. The piston assembly 12' can be pulled out of the tubular metal part 13 by pulling the end piece 36 away from the mouthpiece 10b and the inner surface of the tubular metal part 13 can be cleaned by the adsorbent cleaner upon rotation of the end piece 36 relatively to the pipe stem 10b prior to withdrawal of the piston assembly 12' from the tubular metal part 13.

It is not necessary for the piston assembly 12 in the pipes to be formed integrally with the adaptor piece 11 and a screwthreaded connection, similar to the connection between the piston assembly 12 and end piece 36 in the cigarette holder could be used as alternative in the pipes.

I claim:

1. A stem for a smoking device comprising an outer tubular member and an inner member mounted within said outer member and extending longitudinally thereof, said inner member having at least a portion thereof radially spaced from the inner wall of said outer member and defining with said inner wall an annular smoke-cooling chamber, and an elongated absorbent cleaner extending longitudinally of said annular chamber in contact with said inner wall, said inner member being provided with longitudinally spaced transverse holes and said cleaner having bent ends inserted in said holes to hold it in place on said inner member.

2. A stem for a smoking device as claimed in claim 1

6

in which said inner member is provided with annular ribs which press said cleaner against the inner wall of said outer member.

3. A smoker's pipe comprising a stem as claimed in claim 1, a mouthpiece fixed to said outer member and a bowl fixed to said inner member, said inner member and cleaner being rotatably mounted in said outer member, whereby relative rotation of said bowl and mouthpiece causes said cleaner to wipe the inner wall of said outer member.

4. A smoker's pipe as claimed in claim 3 in which said inner member is longitudinally removable from said outer member and in which said inner member comprises an O-ring seal at the end thereof remote from said bowl, said seal being positioned to wipe the inner surface of said outer member as said inner member is longitudinally removed from said outer member.

References Cited

UNITED STATES PATENTS

20	D. 142,760	10/1945	Wyse.	
	1,562,401	11/1925	Williams	131—203
	1,985,365	12/1934	Dexter	131—203
25	2,001,612	5/1935	Jacquemin	131—184
	2,015,781	10/1935	Bowles	131—184
	2,209,794	7/1940	Semonsen	131—203
	2,774,621	12/1956	Kilbourne.	

FOREIGN PATENTS

30	17,617	9/1895	Great Britain.
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