

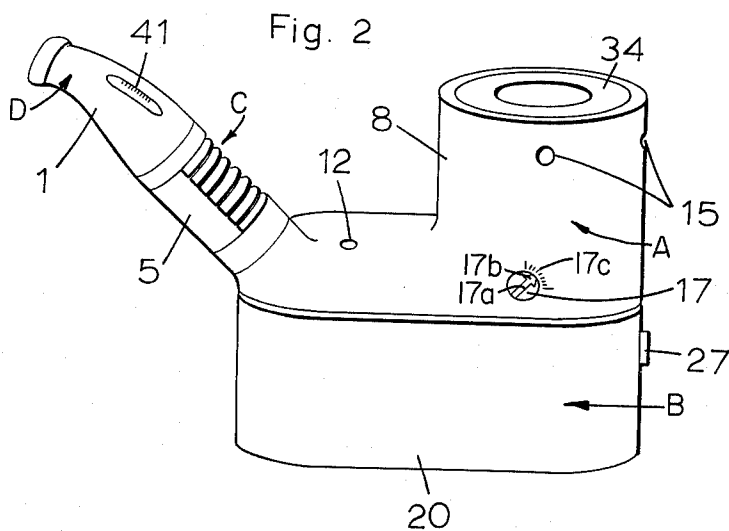
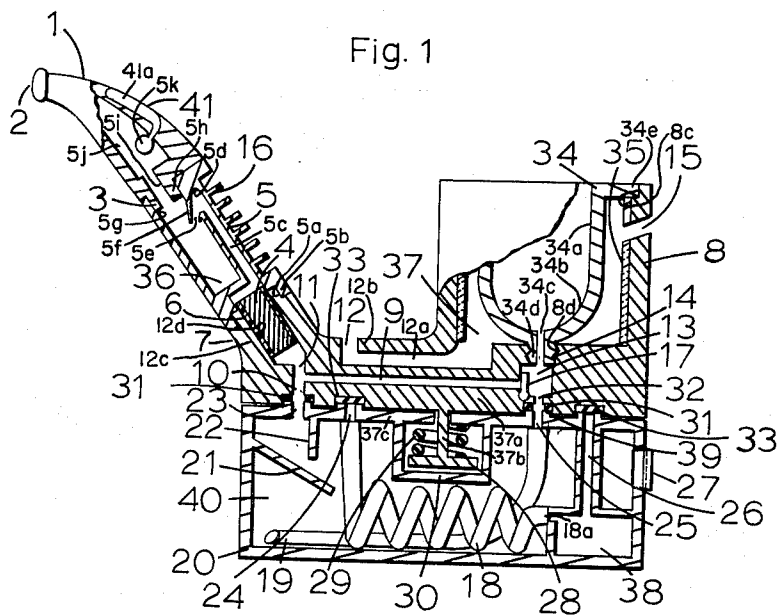
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ADJUSTABLE PIPE

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ADJUSTABLE PIPE

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1 Claim. (Cl. 131-173)

This invention generally relates to smoking pipes and more particularly to the capability of converting between liquid filtered smoke, liquid cooled smoke, air cooled smoke and adjustable degree of mixture of air cooled smoke with either liquid filtered or liquid cooled smoke.

An object of the invention is to provide a pipe with a liquid filter which can remove most tars from tobacco smoke.

Another object of the invention is to provide a pipe which is made of plastic with ceramic bowl and having a built-in bowl cooling air circulation path.

Still another object of the invention is to provide a pipe with multiple filters and capability of providing smoke of desired temperature and strength.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 shows in side elevation, a device constructed in accordance with the invention, the lower body being in section, the bowl and the stem being partially in section, the all purpose pipe being in liquid filtering position.

FIGURE 2 shows the perspective of the all purpose pipe.

In carrying out the invention, referring now specifically to FIGURE 2, the present smoking pipe preferably includes an upper body 8, a lower body B, a stem C and a mouth tip D. The upper body A comprises an outer bowl which may be made of plastic and which has an upper open end and a counterbore 8d. The inner bowl is indicated at 34. It preferably has an inner cylindrical bore 34a which has a partially spherical bottom wall 34b provided with a centrally located smoke discharge bore 34c located in a hub, or lug, which communicates with the bore 13 of the outer bowl 8. The hub 34d may be threaded into the counterbore 8d. The inner bowl 34 is separated from the outer bowl by means of a space for air which serves as insulation and also serves as a space carrying cooling air about the inner bowl inside the outer bowl. The inner bowl 34 also has an outwardly extending flange 34e which fits in the counterbore 8c and also is employed to retain in place the insulating sleeve 35. The insulation sleeve 35 may be cylindrical inside and out and fits inside the outer bowl inner wall and secured in place by the flange 34e of the inner bowl. The upper body has a rearwardly extending portion indicated at 12b which is provided with an aperture 12 for the entrance of air and the aperture 12 communicates with a bore 12a extending to the open space 37 carrying air to the space around the inner bowl 34. The outer bowl 8 is provided with a plurality of apertures 15 near its top. These apertures slant upwardly and outwardly to conduct air from space 37. The operation of these apertures is that the air in the space 37 is heated by the inner bowl 34 and the air is drawn in through the aperture 12 through the conduit 12a through the space 37 and is discharged upwardly and outwardly at the apertures 15.

The upper body may have a cylindrical extension 12c which forms a part of the stem and is provided with a cylindrical bore 12d having a mineral wool filter 4 inside for filtering smoke passing through the bore 12d. The bore 12d communicates at its lower end with a conduit

11 and the conduit 11 extends downwardly to a conduit 10 which is in communication with a horizontally extending conduit 9. The horizontally extending conduit 9 extends to an enlarged bore 13 below the lower end of the inner bowl and communicates with the aperture 34c which is the discharge aperture of the inner bowl. Within the enlarged bore 13 there is a flap valve 17 which is adapted to close the end of the conduit 9 and it is also adapted to be turned to horizontal position. When it is turned to the horizontal position it closes a lower aperture 32 extending downwardly from the bore 13. Suitable gaskets 31 are provided for affecting a non-leaking engagement of the adjacent part. The cylindrical extension 12c at the left end of the upper body A is adapted to be engaged by the stem section 5 which has a cylindrical bore 5a fitting on a reduced cylindrical portion 5b of the extension 12c. The stem section 5 may be made of suitable metal such as aluminum and is preferably provided with fins 16 for radiating heat from the smoke passing through it.

The stem section 5 also has a conduit 5c extending from the lower end upward to the point 5d where it turns backward and communicates with downwardly extending aperture 5e around a baffle 5f. At 5e the smoke passes into a condensation trap 36 and the upper end of the trap communicates with a bore 5i in the tip section 1. The metal section 5 has a cylindrical bore 5g for receiving the reduced end 5h of the tip section 1 which has a bore 5i communicating with a smoke chamber 5j. The smoke chamber 5j contains the bulb 5k of a thermometer 41 which has a laterally bent portion 41a which is the indicating part of the thermometer and is located in a groove in the tip section 1. The mouthpiece has a tip 2 which has a bore leading from the end thereof to the chamber 5j.

The upper body has a lower wall 37a adapted to engage the upper wall 37c of the lower body B and these two parts are held in engagement with each other by a shaft 37b having a head 28 which engages a coil spring 29 engaging the upper wall 37c of the lower body and drawing the head 28 downward. The head 28 and spring 29 are enclosed in a water free chamber 30 as shown in FIGURE 1. The location of the shaft 37b is midway of the ends of the lower body B so that the lower body B may be rotated with respect to upper body 8. The flap valve 17 is mounted on a shaft which extends out with the upper body 8 and as indicated at 17a is provided with an external portion 17b which is placed along scale 17c to indicate whether it is in the upper position or lower position or in any intermediate positions. The lower body B has a filling plug at 27 and has a downwardly extending bore 26 extending to a condensation trap 38 which communicates with one end 18a of a cooling coil 18, the other end of which extends to bore 24 in the top wall 37c. Both the ends of the coil 18 are closed by gaskets 33 when the lower body B is in the position shown in FIGURE 1. The bore 32 from the chamber for the flap valve 17 communicates with a bore 25 which extends to a tube 19 extending down to the bottom of the water chamber indicated at 40. The water chamber has a baffle 21 and another baffle 22 to prevent water from going out of the aperture 23. For this purpose, the baffle 21 slopes downwardly and the baffle 22 is vertical so that the smoke deposits any drops of water on the baffle 21 permitting the water to run back into the water chamber 40.

When the parts are in the position of FIGURE 1, the smoke tip 2 communicates with the bowl of the pipe as follows: through conduit 2, through thermometer chamber 5j, through bore 5i, through condensation trap 36, up aperture 5e, down aperture 5c, through filter 4, bore 11, bore 23, water chamber 40, through pipe 19, to aperture 25 into bore 13 below aperture 34c at bot-

tom of the inner bowl 34. Thus, the inner bowl is in communication with smoke tip 2 through tube 19 in the water and with the present arrangement of parts as shown in FIGURE 1, the water cools and filters smoke passing through it. The body B may be rotated one hundred and eighty degrees during which the bore 26 will be moved in communication with the conduit 10, the conduit 24 will be placed in communication with bore 32. When the lower body B is rotated one hundred and eighty degrees, the bore 24 is moved to be connected to the bore 32 and the bore 26 is moved to register with bore 10 then the coil 18 is connected so that the smoke will pass to 18 from the inner bowl 34 to the tip conduit 2. Thus the present arrangement is adapted to provide for the use of the water cooled pipe 18. The smoke may be passed through tube 18 without water filtering. The amount of smoke passing through the conduit 9 may be regulated by means of flap valve 17 which may close the conduit 9 entirely or may open it entirely or may be moved to some intermediate position where it regulates the amount of filtered and cooled or uncooled smoke.

In operation of the device, one can fill the bowl with tobacco in the usual manner. The pipe can be used in one of its many fashions. FIGURE 1 shows the pipe in its liquid filtered position. As the smoker sucks on the stem, a low pressure being created in the liquid chamber 40, tobacco smoke then flows from the inner bowl 34 through bore 25 and tubing 19 to the liquid chamber 40 where it is filtered with liquid therein. The moisture and tar are therefore deposited in the liquid. The clean smoke then travels on through the filter 4, smoke cooler 5, stem tip 1 and to the smoker.

Another fashion of the all purpose pipe is to cool smoke with liquid but without washing process. The lower body is rotated one hundred and eighty degrees from the position of FIGURE 1. The tobacco smoke from the inner bowl 34 travels through the port 24, the helical tubing 18, the condensation trap 38, the port 26, the filter 4, the smoke cooler 5, the stem 1 and to the smoker. The tobacco smoke is cooled in the helical tubing 18 and the condensed water is carried to the condensation trap 38 which can be drained as the lower body is at ninety degrees position from that of FIGURE 1.

Still more applications of the pipe are to use it as a regular pipe, or mixed smoke of either of the above alternatives and by-passed smoke (not passing through the lower body). The details of these operations are presently explained.

The flap valve 17 can be rotated ninety degrees, more or less, from the vertical to the horizontal position. The circular dial shown in FIGURE 2 is the outer end of the flap valve 17. The center of the dial 17c connects the shaft of the flap valve. As the dial is turned to the counterclockwise extreme, the pipe can function as either a liquid cooled pipe or a liquid filtered pipe as discussed previously. As the dial is turned to the clockwise extreme, the all purpose pipe can function only as a regular pipe since the port to the lower body is closed by the smoke flap valve. However, for both of the lower body positions, the smoke flap valve can be placed between the extreme positions. The smoker will receive mixed smoke. The smoke cooler 5 and filter 4 are optional in production. In fact, the helical tubing 18 and the condensation trap 38 are also matters of choice. The by-pass together with the lower body paths shall provide smoke of desired temperature and strength. The thermometer 41 is provided to aid in the temperature selection. The calibrated marks 17c of the body provide indications of degrees of mixing. The type of tobacco and the quantity of liquid used are governing factors of the

strength of smoke. Each smoker must experiment for his or her own particular need.

The draining and refilling of liquid is done through the drain plug 27 which is a threaded plug with a coin slot. The outer bowl is kept cool at all times because of the air current due to natural convection between the inner and the outer bowls. The insulator 35 further assures the coolness of the plastic outer bowl. The rubber gaskets 31, and the valve caps 33, prohibit any leakage through the ports. The spring 29 applies the necessary load to keep the corresponding ports engaged. The positioner bosses 39 keep the ports aligned.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

Having thus completely and fully described the invention, what is now claimed as new is as follows:

A smoking pipe comprising an upper body, and a lower body movably mounted on the upper body, said upper body being provided with a pipe stem ending in a mouth engaging tip body, said upper body comprising an upwardly open cylindrical plastic outer bowl having a cylindrical bore, an inner bowl of ceramic material of cylindrical shape, having a cylindrical bore with a projecting downwardly and fitting in a counterbore in the bottom of the outer bowl, said lug having a central discharge aperture, said inner bowl being spaced from the wall of the bore in the outer bowl to provide an air cooling space, and said outer bowl having a plurality of upwardly slanted air discharge bores for discharging air from said air space, said upper body also having a rearwardly extending upper portion carried by the outer bowl, said upper portion having a conduit extending from said air space and terminating in an upwardly open aperture for admission of air to said latter conduit to effect cooling of the inner bowl by convection air currents in said latter aperture and out of said slanted apertures, said lower body having a water chamber with a smoke cooling coil in said water chamber and having the ends of said smoke cooling coil communicating with upper ports in the upper wall of said lower body and adapted to register with conduits in the bottom of said upper body leading to the pipe stem and to the inner bowl, said lower body being rotatable to selectively provide for passage of smoke through said cooling coil or a smoke discharge aperture under the water level.

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