Sept. 7, 1965 R. ANSPACH ET AL 3,204,642

SMOKING PIPES

Filed July 16, 1963

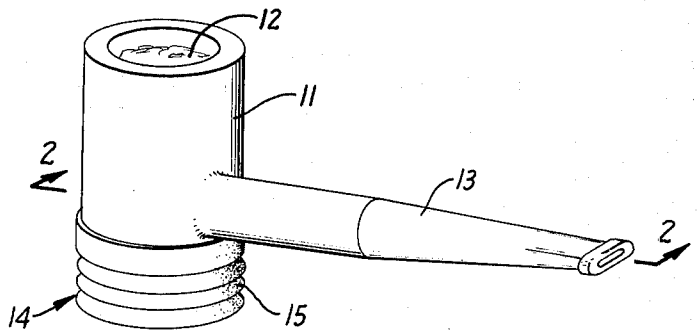


FIG. 1.

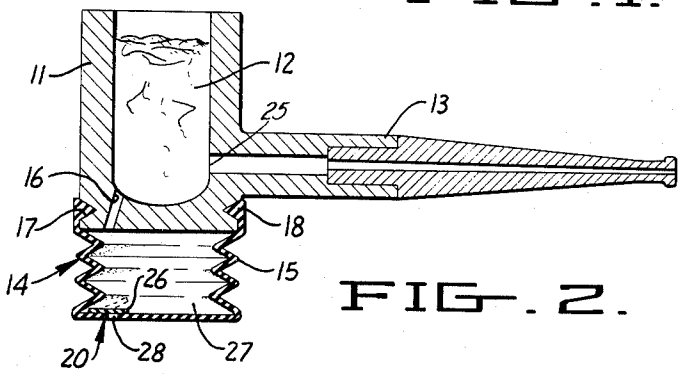


FIG. 2.

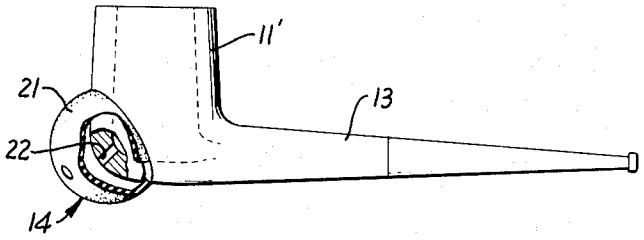


FIG. 3.

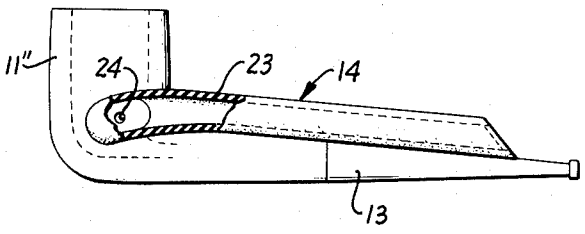


FIG. 4.

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United States Patent Office 3,204,642 Patented Sept. 7, 1965

3,204,642

SMOKING PIPES

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Filed July 16, 1963, Ser. No. 295,428
2 Claims. (Cl. 131—178)

This invention relates to improvements in smoking pipes and more particularly to means for maintaining air circulation in the bowl of the pipe.

In order to keep the tobacco burning in presently available smoking pipes it is necessary for the smoker to puff continually on the pipe in order to provide sufficient draft for combustion. If draft is not maintained, accumulated moisture and gases of combustion will soon extinguish the fire. The necessity of bringing the pipe to the mouth and puffing upon it to maintain a draft can be very annoying to the smoker, particularly when he is engaged in conversation. Consequently he is faced with the alternative of continually interrupting the conversation while drawing on the pipe or allowing the pipe to go out and having to relight it from time to time.

The present invention contemplates means incorporated into the pipe structure which is effective for maintaining a draft through the burning tobacco without requiring the smoker to lift the pipe to his mouth. Basically, this means consists of an air pumping device adapted to maintain a sufficient flow of air and manipulatable by the hand of the smoker holding the pipe.

Accordingly it is a principal object of the invention to provide a smoking pipe in which proper combustion of the tobacco is maintained by a simple manual operation not requiring the pipe to be conveyed to the lips of the smoker.

Another object of the present invention is to provide a smoking pipe of the character described in which the means for manually creating a draft through the burning tobacco does not substantially interfere with the normal smoking of the pipe but is available for use at all times.

A further object of the invention is to provide a manually operable device for maintaining proper flow of air through a smoker's pipe, the device being constructed of attractive and durable materials which enhance the appearance of the pipe and at the same time provide for easy and simple cleaning of the device.

Further objects and advantages of our invention will be apparent as the specification progresses, and the new and useful features of our smoking pipes will be fully defined in the claims attached hereto.

The preferred forms of our invention are illustrated in the accompanying drawing forming part of this specification, in which:

FIGURE 1 is a perspective view of a smoking pipe constructed in accordance with the present invention;

FIGURE 2, a longitudinal cross-sectional view taken substantially on the plane of line 2—2 of FIGURE 1;

FIGURE 3, a side elevational view, partly in section, illustrating a modified form of the invention; and

FIGURE 4, a side elevational view, partly in section, illustrating another form of the invention.

While we have shown only the preferred forms of our invention, it should be understood that various changes or modifications may be made within the scope of the claims attached hereto without departing from the spirit of the invention.

Referring to the drawings in detail, it will be seen that the smoking pipe of the present invention consists essentially of a pipe bowl **11** adapted for containing burning tobacco **12**, a pipe stem **13** in communication with the bowl and formed for engagement with the

mouth of a smoker (not shown) for drawing air through the burning tobacco, together with pumping means **14** connected to the bowl and formed for manual operation for passing air through the burning tobacco when the stem **13** is out of the smoker's mouth.

The air pumping means **14** may be of any suitable form capable of creating a draft through the tobacco adequate to prevent oxygen starvation sufficient to extinguish the fire. Thus, almost any manually operable form of air pump could be employed in the present invention. However, as all pipe smokers can testify, tobacco smoke contains moisture and tars which are readily deposited upon all surfaces with which the smoke comes in contact. This deposited material would seriously interfere with air pumps employing sliding surfaces and accordingly it is preferred to utilize an air displacing device in which this problem is eliminated.

The air pumping means **14** preferably consists essentially of a housing having resiliently distortable walls enclosing an air chamber so that pressure exerted against the housing will diminish the volume of the chamber and release of such pressure will restore the chamber to its original size. The configuration of the housing used will depend upon the amount of displacement desired, and the appearance of the housing when mounted in the desired location on the pipe. In FIGURES 1 and 2 of the drawing the air pumping means **14** consists basically of a bellows **15** carried by the pipe bowl **11**, communication between the bellows and the pipe bowl being provided by a passageway **16** formed through a wall of the bowl **11**. As illustrated, the bellows is preferably of the cylindrical accordion type and is conveniently formed as a unitary member by injection molding of a plastic such as polyethylene or polypropylene.

As a feature of the present invention, the bellows **15** may readily be removed from the pipe for washing out or other cleaning. To this end, and in order to provide an attractive appearance, the pipe bowl **11** is preferably of cylindrical form and the connection with the bellows is such that the generally cylindrical bellows will constitute an extension of the pipe bowl. As shown in FIGURE 2, this bellows has a flat bottom which can serve to support the pipe depending on the balance of the stem, as is known for pipes having bowls with flat bottoms. However, the bellows can be operated in this position by grasping the bowl and reciprocating it vertically. Easily releasable mounting of the bellows on the pipe bowl is accomplished by providing a groove **17** around the lower end of the bowl into which may be snapped a correspondingly shaped rim **18** on the upper end of the bellows.

In the form of the invention illustrated in FIGURE 3, the pumping means **14** consists of a hemispherical housing **21** releasably secured to the pipe bowl **11'** and communicating therewith through a passage **22** in a manner similar to the bellows of FIGURE 2. The housing **21** illustrated in FIGURE 3 is, however, preferably mounted on the forward side of the pipe bowl in approximately the position shown, it having been found that the device is more easily manipulated in this position by certain smokers.

The form of the invention illustrated in FIGURE 4 consists of an elongated flexible tube **23** carried on the stem of the pipe and communicating through passage **24** with the interior of the pipe bowl **11''**. With this form of the invention, the smoker may grip the stem of the pipe and accomplish the desired pumping action merely by tightening and loosening his grip.

In each form of the invention the passageway communicating with the interior of the pumping device should open into the interior of the bowl **11** a spaced distance from the passageway provided by the hollow stem **13**.

In the form illustrated in FIGURE 2, the air duct **16** has its opening in the bottom of the bowl located substantially as far as it can be from the smoke duct juncture **25** where the passage provided by the hollow stem **13** enters the bottom of the bowl. Air duct **16** is also shown inclined inwardly toward the bowl axis to effect an excellent distribution of pumped air or smoke. In addition, this spacing of the terminal points of the two passageways ensures that the air will pass through the tobacco and will not merely shortcut from one passageway to the other.

It should be pointed out that the air pump means **14** as described to this point provides a two-way blowing action through the burning tobacco; that is, intermittent application of pressure to the air pump means will cause the air to be alternately drawn into and expelled from the pipe bowl. This action has been found to be satisfactory when the air pumping means **14** has a capacity sufficient to maintain combustion with such two-way action even though large quantities of combustion inhibiting moisture and gases may be entrained on the air stream.

By providing a one-way pumping action in which fresh air is drawn through the burning tobacco with each stroke and contaminated air is not forced back through the pipe bowl, reduced capacity requirement of the air pump means **14**, or reduced frequency of operation for the same size air pump means, may be achieved.

For this purpose a check valve, such as check valve **20** illustrated in FIGURE 2 of the drawings, may be employed. Any suitable type of check valve which will not fail because of accumulation of tars and moisture could be used. As here shown, the check valve consists of a flexible flap **26** secured at one end to the inner surface of the lower wall **27** of the bellows with the distal end of the flap positioned in overlying relation to an opening **28** communicating with the atmosphere. Contacting pressure exerted on the bellows will cause the flexible flap **26** to seat across opening **28** so that air displaced from the chamber will be forced through passage **16** and thence through the burning tobacco **12**. It should be appreciated that the check valve could be inverted to reverse the direction of flow therethrough in which case air would be drawn from the atmosphere through the burning tobacco and thence through passage **16** into the interior of bellows **15** on the return stroke of the bellows, such air being expelled through the opening **28** when pressure is again applied to the bellows. Of course, if desired, check valves similar to those described could be incorporated into the structures illustrated in FIGURES 3 and 4 of the drawings.

It will be appreciated that when the embodiment of FIGURE 2 is operated against a flat surface, the flap valve will not operate when the pipe is pushed against the flat surface when the surface blocks the opening. However, the bellows still operates by virtue of the same

type of operation described above where there is no valve at all. If desired, the pipe can be supported on a flat surface and yet have the valve operative by placing the bowl of the pipe in overhanging relation to the table edge or other element providing a surface so that the duct **16** can draw smoke into chamber **27** or the valve can permit air to enter on demand.

From the foregoing it will be seen that the smoking pipe of the present invention is of novel and attractive design making it possible for the smoker to maintain a combustion-producing draft by merely squeezing and releasing the pipe with his hand, eliminating any requirement that the pipe be placed in the smoker's mouth in order to keep it lit.

We claim:

1. A smoking pipe, comprising a generally cylindrical bowl adapted for containing burning tobacco, a hollow pipe stem having an opening communicating directly with the interior of the bowl, a bit on said pipe stem formed for engagement by the mouth of a smoker for drawing air through said bowl and said stem, a generally cylindrical accordion-type bellows releasably secured to the lower end of said bowl and forming a downward continuation thereof, said bellows having a flat bottom adapted to support the pipe on a substantially horizontal surface and also adapted to be used as a means for pumping when the bowl is grasped and reciprocated vertically against a horizontal surface, said bowl being formed with passage means opening to the interior of the bowl at a distance from said stem and communicating with the interior of said bellows, a check valve mounted in said bellows and adapted for admitting air to the interior of the bellows when a reduced pressure condition exists therein, said bellows being formed of a resiliently distortable plastic material whereby pressure exerted against the bottom of said bellows will force air therefrom into said bowl and release of such pressure will cause the bellows to draw in air through said check valve.

2. The smoking pipe defined in claim **1**, in which the passage means inters the bowl at a location as far as it can be from the opening in the pipe stem communicating to the pipe bowl.

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