United States Patent

[11] 3,601,131

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[45] Patented **Aug. 24, 1971**

[54] **BIT FOR SMOKING ARTICLE HAVING SMOKE AND AIR PASSAGES**
10 Claims, 14 Drawing Figs.

[52] **U.S. Cl.** ..... **131/198 A,** 131/216, 131/229
[51] **Int. Cl.** **A24f 5/04**
[50] **Field of Search** ..... 131/198, 198 A, 216, 229

[56] **References Cited**

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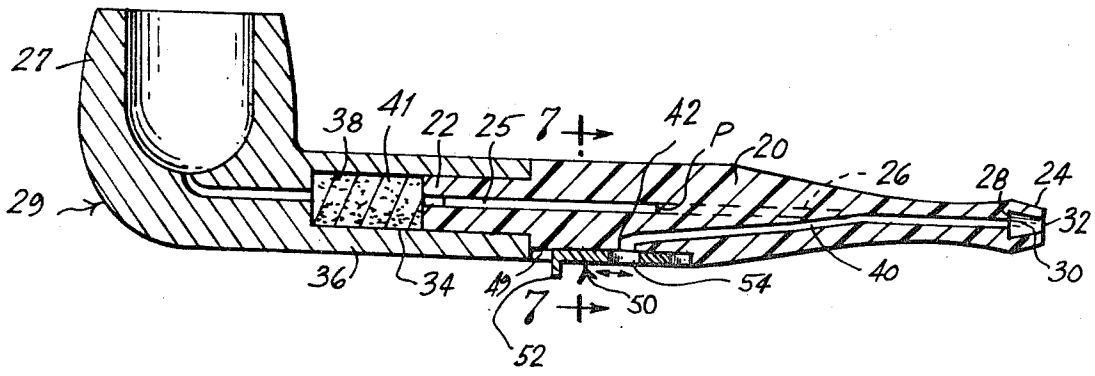
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Primary Examiner—Joseph S. Reich
Attorney—Polachek & Saulsbury

ABSTRACT: A smoking article which may be a pipe, cigar or cigarette holder has a removable stem or bit. The bit has a mouthpiece and tenon at opposite ends and is provided with separate air and smoke passages terminating at a mixing chamber at the mouthpiece end of the bit. The air passage extends from one side of the bit where there is a lateral opening. A movable slide valve member covers the lateral opening for adjusting the size of the opening and consequently the relative amount of air and smoke drawn through the bit. One smoke passage extends axially through the tenon end of the bit and is then divided into two branch passages which open into the mixing chamber. The air passage is located between the two branches. A slide valve carried upon the bit has a tapered opening operable over the air passage inlet to control not only the passage of air but the amount of air delivered. There is no mixture of air with smoke until it reaches the mouthpiece end of the bit, when it mixes, and cools and dilutes the hot smoke. The bit thus provides a cool and dry smoke.



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SHEET 1 OF 2

FIG. 1.

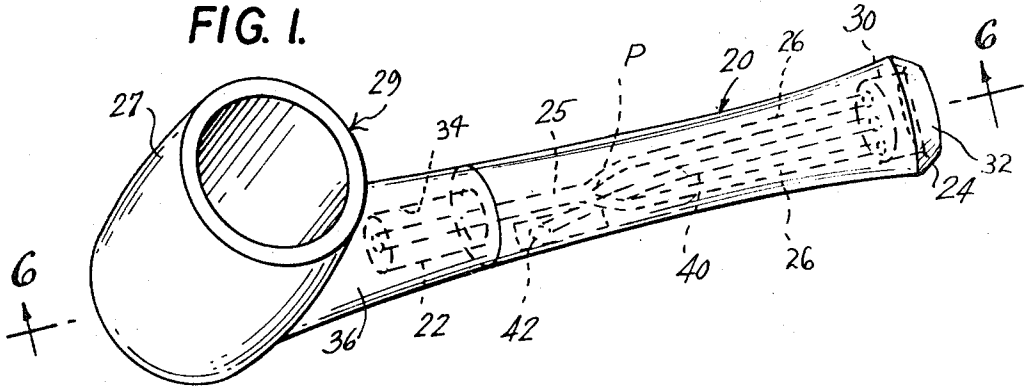
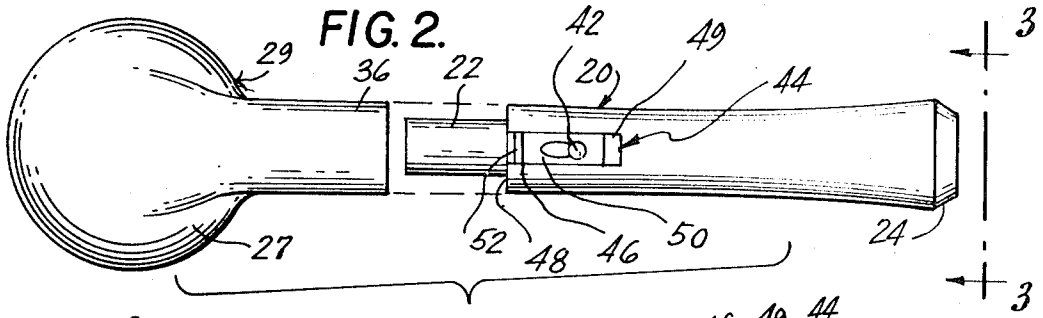


FIG. 2.



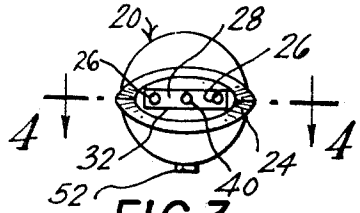


FIG. 3.

FIG. 5.

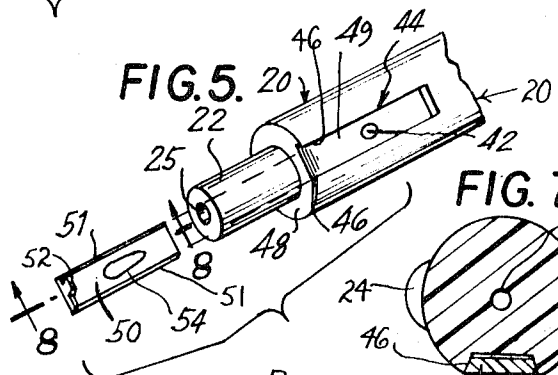


FIG. 7.

FIG. 8.

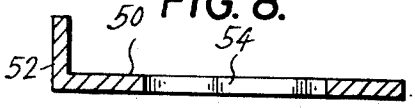


FIG. 4.

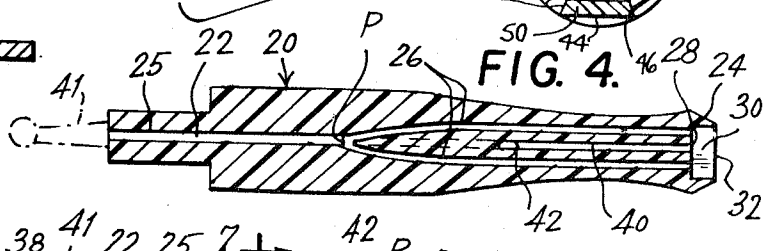
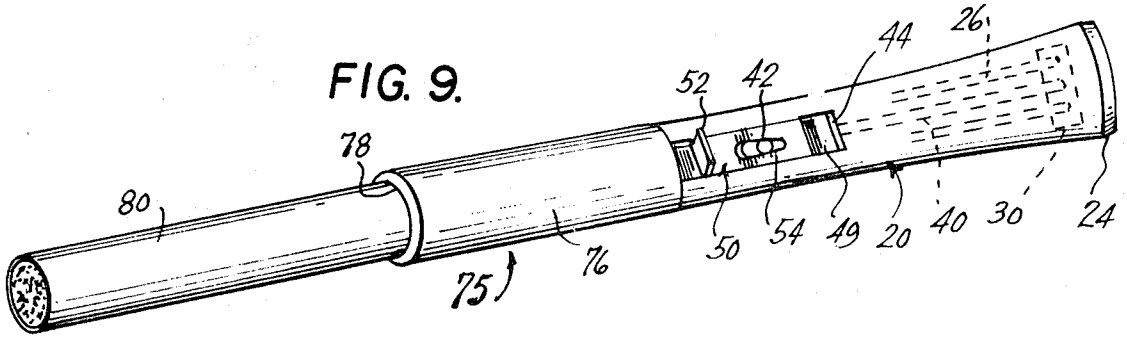


FIG. 6.

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FIG. 9.



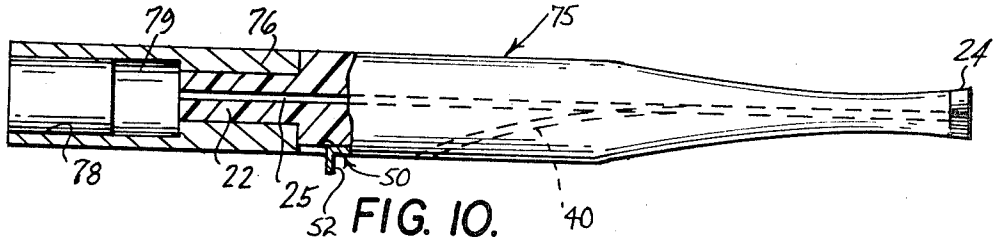


FIG. 10.

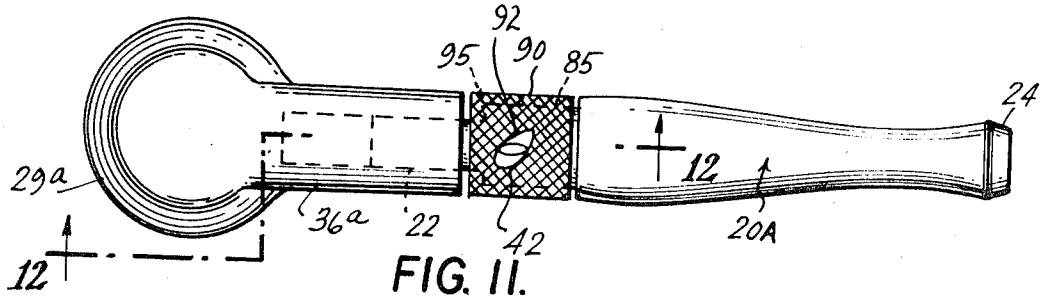


FIG. 11.

FIG. 14.

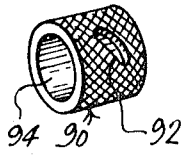


FIG. 12.

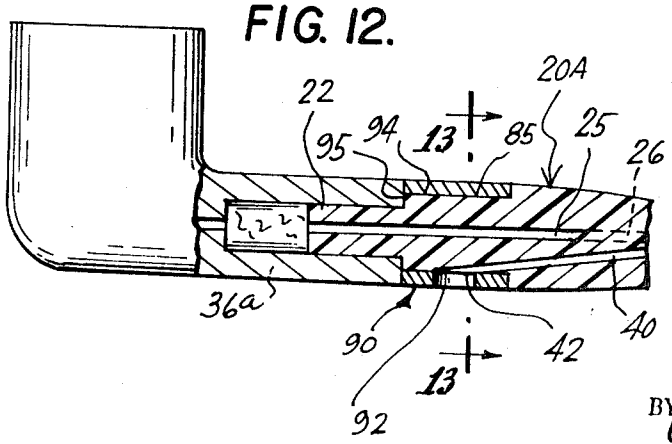
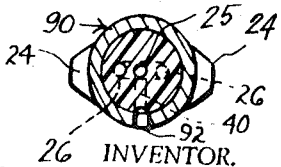


FIG. 13.



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BIT FOR SMOKING ARTICLE HAVING SMOKE AND AIR PASSAGES

This invention relates to smoking articles, and more particularly concerns a bit for a smoking pipe, a cigarette holder or a cigar holder with an auxiliary, adjustable and lateral air intake passage.

Bits for smoking articles have heretofore been known in which lateral holes were provided to admit air into the smoke conducting axial passage of the bit. They have not proven satisfactory in practice because the smoker could not effectively and directly draw air through the air passage. The suction in the air passage depended on the suction in the smoke passage so that too little or too much air was drawn in at a point removed from the mouthpiece end and there was no way to control the amount of the air drawn in.

It has been proposed heretofore to provide a stem or bit of a smoking pipe or a cigarette holder with a lateral passage for admitting air into the stream of smoke passing through the stem. U.S. Pat. No. 1,989,069 describes a typical construction of such a smoking device. The principal difficulty encountered with such a device is that the size of the passage or hole which admits the air is not variable to suit the smoker's taste. Realizing this shortcoming, various proposals have been made of a smoking article. Similar devices of this type have been described in U.S. Pat. Nos. 1,940,075; 2,123,014 and 2,233,287. Each of the constructions has one or more features which renders it impractical or ineffective. For example, in the construction described in U.S. Pat. No. 1,940,075, the pipe bit must be rotated with respect to the pipe stem and bowl to effect adjustment of the air hole. This is impractical because the adjustment causes misalignment of the pipe bit and bowl. A similar difficulty is encountered with the pipe of U.S. Pat. No. 2,123,014. Further objections involve the complexity of the valve structures used to adjust the hole size, difficulty of cleaning, and high manufacturing cost. U.S. Pat. No. 2,233,287, for example, employs a thermostat to control the lateral air intake. This makes adjustment of the air intake dependent on the temperature of the smoke passing through the stem and bit rather than on the personal tastes of the smoker. This construction like the others mentioned above can only be made manually adjustable by rotating the bit of the pipe with respect to the pipe bowl. The objection to this type of adjustment has already been mentioned.

The present invention is directed at overcoming the above and other difficulties and disadvantages by providing a smoking article in which a conveniently located slide valve is installed for controlling a lateral air intlet to the bit. The slide valve can be moved longitudinally of the bit in one form of the invention. In another embodiment the slide valve is rotatable. In both constructions the slide valve can be arranged to serve as a reinforcement for the joint between pipe bit and pipe stem.

These difficulties have thus been corrected, and the result has been found to provide a cooler, drier smoke than has heretofore been thought possible.

The invention will be explained in detail in connection with the drawings, wherein:

FIG. 1 is a perspective view of a smoking pipe provided with a bit embodying the invention.

FIG. 2 is an exploded bottom plan view of the pipe and bit.

FIG. 3 is an enlarged end view of the bit per se taken on line 3—3 of FIG. 2.

FIG. 4 is a central, longitudinal sectional view taken horizontally on line 4—4 of FIG. 3.

FIG. 5 is an exploded perspective view of a slide valve member and part of the bit.

FIG. 6 is a longitudinal central sectional view of the pipe taken on line 6—6 of FIG. 1, the view of the bit being in a vertical plane 90° from the plane of the view of FIG. 4.

FIG. 7 is an enlarged cross-sectional view taken on line 7—7 of FIG. 6.

FIG. 8 is an enlarged longitudinal sectional view of the valve member taken on line 8—8 of FIG. 5.

FIG. 9 is a perspective view of the bit installed in a cigarette holder, shown in an inverted position.

FIG. 10 is a side view of the cigarette holder with part shown in central section.

FIG. 11 is a bottom plan view of a smoking pipe provided with another bit according to the invention, the bit being shown partially withdrawn from the stem of the pipe.

FIG. 12 is view partially in section and partially in side elevation taken on line 12—12 of FIG. 11.

FIG. 13 is cross-sectional view taken on line 13—13 of FIG. 12.

FIG. 14 is a perspective view of the slide valve member used on the bit of FIGS. 11–13.

Referring first to FIGS. 1–8, there is shown a stem or bit 20 embodying the invention. The bit is an elongated molded plastic or ceramic member having a cylindrical tenon 22 at its rear end and a mouthpiece portion 24 at its front end. A bore or passage 25 extends axially of the tenon to a point P between opposite ends of the bit, where the bore divides into two laterally spaced branch passages 26 both of which lie in the same horizontal diametral plane as passage 25. Passages 26 extend forwardly and terminate at the rear inside wall 28 of a small mixing chamber 30 formed just inside the mouthpiece of the bit. Chamber 30 has an elongated rectangular opening 32 at the front end of the bit.

Passages 25, 26 serve to convey hot smoke from burning tobacco (not sh0wn) in the bowl 27 of pipe 29. Tenon 22 fits in bore 34 in the stem 36 of the pipe bowl. A porous filter 38 can be disposed in bore 34. Alternatively, a tar and moisture trap 41 can be fitted into the end of passage 25 to extend from tenon 22 into bore 34 as indicated by dotted lines in FIGS. 1 and 6, and as shown in FIG. 4, a conventional condensing device 41 may be applied at the front end of the bit.

The bit is further provided with an air passage 40. This passage extends forwardly and laterally inwardly from an oval side opening 42. The passage is located in the central vertical plane of the bit and thus terminates at wall 28 of mixing chamber 30 between the branch passages 26, see FIGS. 3 and 4. It will be apparent that when the smoker applies suction to the mouthpiece equal pressure is applied to each of passages 26 and 40. Smoke and air will be drawn into chamber 30 through the separate passages to mix in chamber 30. The relative quantities of smoke and air will depend on the relative cross-sectional areas of the several passages. The ratio of the air-to-smoke content of the mixture can be adjusted by the valve means shown best in FIGS. 2, 5, 6 and 7.

An elongated recess 44 is formed in the bit 20 with dovetailed edges 46. This recess extends forwardly from annular shoulder 48 of the bit. Preferably, this is conveniently located on the underside or bottom of the bit. Opening 42 of passage 40 is located in the bottom 49 of the recess 44. A slide valve member 50 frictionally and slidably fits the recess. This member has a depending tab 52 which serves as a fingerpiece. The valve member 50 is a narrow plate generally rectangular in plan view with beveled side edges 51. It is axially shorter than recess 44. A tapered axially extending slot 54 is formed in the slide valve member. This slot is centrally located. A pair of projections 56 are press formed in the slide valve member. The slide valve member can be moved longitudinally to center slot 54 with respect to round inlet opening 42 of passage 40. This will fully open passage 40 to permit air to pass freely into this passage. The valve member can thus be moved to close opening 42 partially or completely. When partially closed, as when member 50 is moved toward the pipe bowl, some air will enter passage 40. When fully closed no air will enter the passage. By this arrangement the relative volumes of air and smoke entering mixing chamber 30 can be varied to suit the smoker's taste.

FIGS. 9 and 10 show bit 20 used in a cigarette holder 75. For this purpose a sleeve 76 is fitted on the tenon 22. The sleeve has an axial bore 78 communicating with passage 25. A

supplemental filter **79** can be installed in bore **78** is desired. Bore **78** will receive a cylindrical cigarette **80**. Sleeve **76** can be adapted to hold a cigar. Other parts of the bit **20** are the same as already described in connection with FIGS. **1–8** and corresponding parts are identically numbered, certain of the details of the chamber **30** which are shown in FIG. **1** have been omitted in FIG. **9**. The bit operates in the same way as described above for mixing air and smoke in the common mixing chamber **30**, located at the mouthpiece end. The air and smoke are drawn independently of each other under suction applied at a common terminal in the mixing chamber.

FIGS. **11–14** show another bit **20A** which is similar to bit **20** insofar as smoke conducting passages **25**, **26** and air-conducting passages **40** are concerned. A cylindrical recess **85** is formed around the bit just forwardly of the tenon **22**. A cylindrical ringlike sleeve valve member **90** is slidably and rotatably fitted in recess **85**. A tapered slot **92** extends obliquely with respect to the axis of the valve member and opens into central bore **94** of the valve member. Slot **92** crosses opening **42** in passage **40**. When the bit is partially withdrawn from stem **36***a* of pipe **29***a*, valve member **90** can be turned freely to adjust the amount of overlap of slot **92** at opening **42** of passage **40**. The sleeve valve member can be turned to fully clear opening **42** or it can be turned to partially or fully close opening **42**. When the tenon **22** is fully inserted into stem **36***a* as shown in FIG. **12**, the valve member is held in place by pressure between shoulder **95** at the rear end of recess **85** and the front end of stem **36***a*.

In both bits **20** and **20A**, there is the same arrangement of smoke and air passages, only the slide valves are differently constructed. In any case the relative quantities of air and smoke passing into mixing chamber **30** are easily adjusted by use of either valve. Bit **20A** can of course be used in a cigarette or cigar holder in the same manner as shown in FIGS. **9** and **10** by adding sleeve **76**. The bits are interchangeable with other pipes and can replace conventional pipe bits. The bits will provide long satisfactory service. The bits can be easily cleaned since all passages are accessible at opposite ends. Pipe cleaners can be passed easily through the several passages. The bits can be manufactured by mass production plastic or ceramic working machinery at relatively low cost.

What is claimed is:

1. A bit for a smoking article, comprising an elongated generally cylindrical body having a cylindrical tenon at one end for engaging in bore means in said article, said body having a mouthpiece at its other end, said mouthpiece having chamber means for mixing smoke and air therein, said chamber means having an opening at the end of the mouthpiece for permitting a mixture of smoke and air to pass therethrough, said body having a smoke passage extending axially of the tenon to a point inside said body and a pair of laterall spaced branch smoke passages extending from said passage at said point to an inside wall of said chamber means for permitting smoke from said smoking article to be conveyed through said passages to said chamber means, said body further having an air passage extending obliquely between said inside wall of the chamber means and a side of said body, and terminating in a lateral opening thereat for permitting air to pass into said mixing chamber means, whereby suction applied at the end of the mouthpiece applies pressure equally in said air and smoke passages to draw smoke and air into the mixing chamber means for cooling the smoke.

2. A bit as defined in claim **1**, further comprising slide valve means on said body for adjusting the size of said lateral opening to regulate the relative quantities of smoke and air passing into said mixing chamber means and including tapered axially extending slot means operable over the air passage lateral opening.

3. A bit as defined in claim **1**, wherein said smoke and branch passages are disposed in a first diametral plane of said body, and wherein said air passage is disposed in another diametral plane intersecting said first diametral plane and so that the air passage extends in said body between the branch passages and opens at said inner wall of the chamber between the branch passages.

4. A bit as defined in claim **1**, wherein said body has means providing a recess in said one side thereof, said lateral opening being located at said recess means; and an apertured valve member slidably disposed in said recess means for adjustably opening and closing said lateral opening to regulate the relative quantities of smoke and air passing into said mixing chamber.

5. A bit as defined in claim **4**, wherein said recess means includes dovetailed edges, said valve member being a plate having lateral beveled edges engaged with the dovetailed edges of the recess means.

6. A bit as defined in claim **5**, further comprising means in the recess means and on the plate for cooperatively holding the valve member in any selected position in the recess means.

7. A bit as defined in claim **1**, wherein said body has means providing a cylindrical recess, said lateral opening being located at said recess means; and a cylindrical valve member rotatably engaged on said body in said recess means, said valve member having a slot located so that rotation of the valve member adjustably opens and closes said lateral opening to regulate the relative quantities of smoke and air passing into said mixing chamber.

8. A bit as defined in claim **1**, further comprising valve means on said body for adjusting the size of said lateral opening to regulate the relative quantities of smoke and air passing into said mixing chamber, said smoke and branch passages being disposed in a first diametral plane of said body, said air passage being disposed in another diametral plane intersecting said first diametral plane and located so that the air passage extends in said body between the branch passages and opens at said inner wall of the chamber between the branch passages.

9. A bit as defined in claim **8**, wherein said valve means comprises means providing a recess formed in said body, said lateral opening being located at said recess means, and an apertured valve member slidably disposed in said recess means for adjusting the size of said lateral opening.

10. A bit as defined in claim **9**, wherein said recess means extends longitudinally of said body and has dovetailed edges, said valve member being a plate having lateral beveled edges engaged with the dovetailed edges of the recess means.